



FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION - 2018
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT

Roll No.

ESSAY

TIME ALLOWED: THREE HOURS

MAXIMUM MARKS: 100

NOTE: (i) Make an outline and write a COMPREHENSIVE ESSAY (2500-3000 words) on any ONE of the given topics. Make sure you use different forms of discourses, e.g. exposition, argumentation, description and narration. Credit will be given for organization, relevance and clarity.
(ii) No Page/Space be left blank between the answer. All the blank pages of Answer Book must be crossed.

1. **Real development should transform people's lives, not just economic statistics.**
2. **Higher Education in Pakistan: Ills and Remedies.**
3. **Too many of us are not living our dreams because we are living our fears.**
4. **China – Pakistan Economic Corridor (CPEC) and its Socio-economic Implications for the Region and the World.**
5. **Beware the barrenness of a busy life!**
6. **The Emerging Power of Social Media: Prospects and Problems.**
7. **In the fight against terrorism and corruption, it is imperative not to compromise human rights and civil liberties.**
8. **The threat of Global Warming and the ways to counter it.**
9. **Will “Rule of law” always remain an impracticable myth in our country?**
10. **Democracy in Pakistan: Hopes and Hurdles.**



**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION – 2018
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT
ENGLISH (PRECIS & COMPOSITION)**

Roll Number

TIME ALLOWED: THREE HOURS
PART-I(MCQS): MAXIMUM 30 MINUTES

PART-I (MCQS)
PART-II

MAXIMUM MARKS = 20
MAXIMUM MARKS = 80

- NOTE: (i) Part-II is to be attempted on the separate Answer Book.**
(ii) Attempt ALL questions from PART-II.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

Q. 2. Write a précis of the following passage in about 120 words and also suggest a suitable title: (20)

It is in the temperate countries of northern Europe that the beneficial effects of cold are most manifest. A cold climate seems to stimulate energy by acting as an obstacle. In the face of an insuperable obstacle our energies are numbed by despair; the total absence of obstacles, on the other hand leaves no room for the exercise and training of energy; but a struggle against difficulties that we have a fair hope of over-coming, calls into active operation all our powers. In like manner, while intense cold numbs human energies, and a hot climate affords little motive for exertion, moderate cold seems to have a bracing effect on the human race. In a moderately cold climate man is engaged in an arduous, but no hopeless struggles and with the inclemency of the weather. He has to build strong houses and procure thick clothes to keep himself warm. To supply fuel for his fires, he must hew down trees and dig coal out of the earth. In the open air, unless he moves quickly, he will suffer pain from the biting wind. Finally, in order to replenish the expenditure of bodily tissue caused by his necessary exertions, he has to procure for himself plenty of nourishing food.

Quite different is the lot of man in the tropics. In the neighbourhood of the equator there is little need of clothes or fire, and it is possible with perfect comfort and no danger to health, to pass the livelong day stretched out on the bare ground beneath the shade of a tree. A very little fruit or vegetable food is required to sustain life under such circumstances, and that little can be obtained without much exertion from the bounteous earth.

We may recognize must the same difference between ourselves at different seasons of the year, as there is between human nature in the tropics and in temperate climes. In hot weather we are generally languid and inclined to take life easily; but when the cold season comes, we find that we are more inclined to vigorous exertion of our minds and bodies.

Q. 3. Read the following passage carefully and answer the questions that follow: (20)

The third great defect of our civilization is that it does not know what to do with its knowledge. Science has given us powers fit for the gods, yet we use them like small children. For example, we do not know how to manage our machines. Machines were made to be man's servants; yet he has grown so dependent on them that they are in a fair way to become his master. Already most men spend most of their lives looking after and waiting upon machines. And the machines are very stern masters. They must be fed with coal, and given petrol to drink, and oil to wash with, and they must be kept at the right temperature. And if they do not get their meals when they expect them, they grow sulky and refuse to work, or burst with rage, and blow up, and spread ruin and destruction all around them. So we have to wait upon them very attentively and do all that we can to keep them in a good temper. Already we find it difficult either to work or play without the machines, and a time may come when they will rule us altogether, just as we rule the animals.

And this brings me to the point at which I asked, "What do we do with all the time which the machines have saved for us, and the new energy they have given us?" On the whole, it must be admitted, we do very little. For the most part we use our time and energy to make more and better machines; but more and better machines will only give us still more time and still more energy, and what are we to do with them? The answer, I think, is that we should try to become mere civilized. For the machines themselves, and the power which the machines have given us, are not civilization but aids to civilization. But you will remember that we agreed at the beginning that being civilized meant making and linking beautiful things. Thinking freely, and living rightly and maintaining justice equally between man and man. Man has a better chance today to do these things than he ever had before; he has more time, more energy, less to fear and less to fight against. If he will give his time and energy which his machines have won for him to making more beautiful things, to finding out more and more about the universe, to removing the causes of quarrels between nations, to discovering how to prevent poverty, then I think our civilization would undoubtedly be the greater, as it would be the most lasting that there has ever been.

- Questions:**
1. Instead of making machines our servants the author says they have become our masters. In what sense has this come about? (4)
 2. The use of machines has brought us more leisure and more energy. But the author says that this has been a curse rather than a blessing. Why? (4)
 3. What exactly is the meaning of 'civilization'? Do you agree with the author's views? (4)
 4. 'Making more beautiful things' – what does this expression mean? Make a list of the beautiful things that you would like to make and how you would make them. (4)
 5. Mention some plans you may have to prevent poverty in the world. Who would receive your most particular attention, and why? (4)

ENGLISH (PRECIS & COMPOSITION)

Q. 4. (a) Correct only FIVE of the following: (5)

- (i) They only work when they have no money.
- (ii) They left the hotel here they had been staying in a motor-car.
- (iii) I cannot by no means allow you to do so.
- (iv) My friend said he never remembered having read a more enjoyable book.
- (v) Going up the hill, an old temple was seen.
- (vi) One day the bird did not perform certain tricks which had thought it to his satisfaction.
- (vii) I was rather impressed by the manner of the orator than by his matter.
- (viii) What an awful weather!

(b) Use punctuation marks where needed in the following sentences: (5)

- (i) There is a slavery that no legislation can abolish the slavery of caste
- (ii) All that I am all that I hope to be I owe to my angel mother.
- (iii) Take away that bauble said Cromwell pointing to the mace which lay upon the table.
- (iv) There is only one cure for the evils which newly acquired freedom produces and that cure is freedom
- (v) History it has been said is the essence of innumerable biographies.

Q. 5. (a) Fill the following blanks (any FIVE) appropriate preposition. (5)

- (i) _____ a Ford he has a Fiat car
(a) in (b) before (c) besides (d) despite
- (ii) I saw him felling a big tree _____ a hatchet.
(a) with (b) through (c) by (d) at
- (iii) I must start _____ dawn to reach the station in time.
(a) on (b) at (c) by (d) after
- (iv) I have known him _____ a long time.
(a) since (b) from (c) for (d) over
- (v) "Will you walk _____ my parlour?"
(a) in (b) to (c) by (d) into
- (vi) The public are cautioned _____ pickpockets.
(a) against (b) about (c) of (d) for

(b) Rewrite the following dialogue, written in direct speech, in a paragraph form. (5)

Jack: Hello, Swarup! Swatting away as usual. Come out, man; shut up your old books, and come and have a game of tennis.

Swarup: I am sorry I cannot do that, Jack. The examination is drawing near, and I want every hour I can get for study.

Jack: Oh! Hang all examinations! I do not worry about mine. What is the use of them, any way?

Swarup: Well, you can't get a degree if you don't pass the examination; and I have set my heart on being a graduate.

Jack: And pray what good will graduation do you? You may get a clerkship in a government office; but that's all, and there are hundreds of fellows who have got their degrees, and are no nearer getting jobs of any sort.

Swarup: That may be so; but I am not studying so much to pass my examination and obtain my degree, as to store my mind with knowledge and develop my intellectual faculties.

Q. 6. (a) Explain the difference between the following word pairs (Any FIVE) by using each word in your own sentences: (5)

- | | | | |
|---------------------|--------------------|--------------------|---------------------------|
| (i) Callous, Callus | (ii) Born, Borne | (iii) Faint, Feint | (iv) Dinghy, Dinky |
| (v) Lose, Loose | (vi) Waiver, Waver | (vii) Shear, Sheer | (viii) Resister, Resistor |

(b) Use ONLY FIVE of the following in sentences which illustrate their meaning: (5)

- | | | | |
|-------------------|----------------------------|-----------------------|------------------------|
| (i) Show and tell | (ii) Helter-skelter | (iii) To the death | (iv) Tilt at windmills |
| (v) Het up | (vi) The whole ball of wax | (vii) It's about time | (viii) Punch-up |

Q. 7. Translate the following Urdu paragraph into English by keeping in view figurative/idiomatic expressions. (10)

لاہور شہر سیاست ہی نہیں ثقافت کا بھی قدیم مرکز ہے۔ مغلوں کی ثقافت نے عروج کا زمانہ اس شہر میں دیکھا۔ سکھ ثقافت کا بھی یہی مرکز تھا۔ علم و ادب کی ثقافت بھی اسی شہر کے حصہ میں آئی۔ اہل تصوف کا بھی یہی مرکز تھا۔ تصوف کی مشہور کتاب کشف المحجوب کے مصنف حضرت علی بجویری المشہور حضرت داتا گنج بخش بھی اسی شہر میں مدفون ہیں۔ انگریزوں کے دور میں بھی لاہور کا فیشن پورے ہندوستان میں رائج ہوتا تھا۔ قیام پاکستان کے بعد بھی اس شہر کی اہمیت کم نہیں ہوئی۔



FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2018
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT
GENERAL KNOWLEDGE-I
(GENERAL SCIENCE & ABILITY)

Roll Number

TIME ALLOWED: THREE HOURS PART-I(MCQS): MAXIMUM 30 MINUTES	PART-I (MCQS) PART-II	MAXIMUM MARKS = 20 MAXIMUM MARKS = 80
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- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt Only **FOUR** questions from **Part II**, by selecting **TWO** questions from **EACH SECTION**. All questions carry Equal marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.
(vii) Use of **Calculator** is **NOT** allowed.

PART-II
SECTION-I

- Q. No. 2.** (A). Describe different methods to estimate the age of the Universe. (5)
(B). Explain the formation of Lunar Eclipse. (5)
(C). Explain the terms Dark Energy and Dark Matter. (5)
(D). Define the term Black Hole. What's expected inside it? (5) (20)
- Q. No. 3.** (A). Describe different causes and preventions of 'Polio' (5)
(B). Define the term 'Bio-Fuel'. How is it helpful to promote clean energy? (5)
(C). Define 'Carbohydrates'. Describe different steps to digest these in the human body. (5)
(D). Describe the 'Cell Structure'. Write down at least three differences between an animal cell and plant cell. (5) (20)
- Q. No. 4.** (A). What is 'Acid Rain'. Describe its causes and how it can be prevented? (5)
(B). What is 'Water Pollution'. Discuss its causes and measurement methods. Name the countries with the highest and lowest percentage of it. (5)
(C). Write a comprehensive note on 'Smog'. (5)
(D). Describe different causes of 'Tsunami'. Is there any difference between a Tsunami and a tidal wave? Name the worst Tsunami ever recorded. (5) (20)
- Q. No. 5.** (A). Write a note, how data is stored on a 'Hard Disk'. (5)
(B). How an 'Optical Fiber' is constructed? How is it helpful in transmitting the electromagnetic radiations? (5)
(C). Write a comprehensive note on 'Balanced Diet'. (5)
(D). What is 'Artificial Intelligence'? How is it helpful for humanity? (5) (20)

SECTION-II

- Q. No. 6.** (A). It takes 3 liters of paint to cover an area of 24 square meters. What percentage increase in the quantity of paint would be required to cover an area of 50.4 square meters? (5)
- (B). An automobile travels 3 km towards south, 4 km towards west, 5 km towards north and 2 km towards south-east. How far is it from its starting position? (5)
- (C). Tahir started a business with a capital of Rs. 15,000. After 5 months Umar also joined him with an investment of Rs. 30,000. At the start of 9th month, Usman joined them by investing Rs. 45,000. At the end of the year they earned a profit of Rs. 406,000. Find the share of each one. (5)
- (D). A man left his property of Rs. 640,000. A debt of Rs. 40,000 was due to him and Rs. 5,000 was spent on his burial. Distribute the amount between his widow, one daughter and two sons according to the Islamic Law. (5) (20)

Q. No. 7. The breakdown of average monthly expenditure for a family is given in the following Figure:

- (A). Calculate from the figure what percentage of the family's expenditure is on 'other'? (5)
- (B). Approximately what fraction of the family's monthly expenditure do 'utilities', 'rent' and 'food' represent? (5)
- (C). If the family spends Rs.11600 on utilities, how much is the family's total expenditure? (5)
- (D). 'Other' expenditure comprises savings, entertainment and luxury items, which are spent in the ratio 3 : 4 : 1. Calculate how much the family saves each month if monthly income is Rs.24,000. (20)



- Q. No. 8.** (A). Police officers are in pursuit of a stolen vehicle. Officer Baker is directly behind the stolen car. Officer Lopez is behind Baker; Officer O'Malley is behind Lopez. Officer Reinhart is ahead of the stolen car and coming from the opposite direction. Officer Reinhart makes a U-turn and joins the pursuit. He pulls in behind Officer Lopez. Officer Baker pulls up on the driver's side of the stolen vehicle and Officer Lopez pulls up on the other side. Which officer is directly behind the vehicle? (5)
- (B). Define a Histogram. How is it constructed? What information may be deduced from it? (5)
- (C). Look at this series: F2, __, D8, C16, B32, What number should fill the blank? (5)
- (D). In a certain code language LANDMINE is written as PYRBQGRC. How will HOME MADE be written in that code language? (5) (20)



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Roll Number

GENERAL KNOWLEDGE-II
(CURRENT AFFAIRS)

TIME ALLOWED: THREE HOURS

PART-I (MCQS)

MAXIMUM MARKS = 20

PART-I(MCQS): MAXIMUM 30 MINUTES

PART-II

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

Q. No. 2. China-Pakistan Economic Corridor (CPEC) is considered as a game-changer. How the CPEC can be helpful to uplift the Pakistan's economy? Discuss. **(20)**

Q. No. 3. Discuss in detail the Iran-Pakistan gas pipeline and challenges to it. **(20)**

Q. No. 4. How the United States is trying to keep its dominant position in the Asia-Pacific and what is the China's response to it? **(20)**

Q. No. 5. Critically analyze the newly established Islamic Military Alliance and its future implications for the Muslim World? **(20)**

Q. No. 6. Describe the 2017 Qatar Diplomatic Crisis and its impact on the Middle East. **(20)**

Q. No. 7. Critically examine the Donald Trump's Policy for South Asia and its implications for Pakistan and the region. **(20)**

Q. No. 8. What are the opportunities and challenges for Pakistan as one of the new members of the Shanghai Cooperation Organization (SCO)? **(20)**



**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2018
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT
GENERAL KNOWLEDGE-III
(PAKISTAN AFFAIRS)**

Roll Number

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

- Q. No. 2.** Critically evaluate the foundations of Allama Iqbal's concept of Muslim separatism in the context of Indo-Pak Subcontinent. (20)
- Q. No. 3.** Discuss the 3rd June Plan or Mountbatten Plan and also describe how it was implemented? (20)
- Q. No. 4.** Describe the political system of Pakistan. Which form of government is suitable to make country politically stable? (20)
- Q. No. 5.** Define non-state actors. 'Non-state actors are posing more threat to Pakistan's national security than threats from external state actors.' Argue in favour or against. (20)
- Q. No. 6.** Discuss the nature of centre-province relations under the 1973 Constitution. (20)
- Q. No. 7.** Discuss the changing trends in Pakistan- US relations since 2001. (20)
- Q. No. 8.** There is crisis of national integration in Pakistan since its creation. What measures do you suggest for the promotion of national integration of Pakistan? (20)



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Roll Number

ISLAMIC STUDIES

TIME ALLOWED: THREE HOURS

PART-I(MCQS): MAXIMUM 30 MINUTES

PART-I (MCQS)

PART-II

MAXIMUM MARKS = 20

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt **FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

Q. No. 2. Define *Ijtihad*, also highlight its contemporary importance in the light of Islamic *Fiqh*. (20)

Q. No. 3. What is Self-purification and *Ehsan*? Explain it in the light of Quran and Sunnah, also describe its individual and collective impacts. (20)

Q. No. 4. Point out the motives of terrorism in Pakistan. How can the society get rid of terrorism? (20)

Q. No. 5. Highlight the responsibilities of civil servants in the light of Islamic teachings. (20)

Q. No. 6. Write a comprehensive note on Zakat system of Islam and its spiritual, moral and social impacts. (20)

Q. No. 7. Describe, in detail, the basic characteristics of Islamic civilization. (20)

Q. No. 8. The Holy Prophet (ﷺ) is the prophet of peace and safety. Explain with arguments. (20)

URDU VERSION

سوال نمبر 2: اجتہاد کی تعریف کرتے ہوئے فقہ اسلامی کی روشنی میں اس کی عصری اہمیت واضح کریں۔ (20)

سوال نمبر 3: تزکیہ و احسان سے کیا مراد ہے؟ قرآن و سنت کی روشنی میں وضاحت کرتے ہوئے اس کے انفرادی و اجتماعی اثرات بیان کریں۔ (20)

سوال نمبر 4: پاکستان میں دہشت گردی کے محرکات کیا ہیں اور معاشرے کو اس سے کیسے نجات دلائی جا سکتی ہے؟ (20)

سوال نمبر 5: اسلامی تعلیمات کی روشنی میں سرکاری ملازمین کی ذمہ داریاں واضح کریں۔ (20)

سوال نمبر 6: اسلام کے نظام زکوٰۃ اور اس کے روحانی، اخلاقی اور معاشرتی اثرات پر ایک تفصیلی سزہ سپرد قلم کریں۔ (20)

سوال نمبر 7: اسلامی تہذیب کی بنیادی خصوصیات تفصیلاً بیان کریں۔ (20)

سوال نمبر 8: نبی کریم ﷺ پیغمبر امن و سلامتی ہیں۔ دلائل سے واضح کریں۔ (20)



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Roll Number

ACCOUNTANCY AND AUDITING, PAPER-I

TIME ALLOWED: THREE HOURS
PART-I(MCQS): MAXIMUM 30 MINUTES

PART-I (MCQS)
PART-II

MAXIMUM MARKS = 20
MAXIMUM MARKS = 80

- NOTE: (i) Part-II is to be attempted on the separate Answer Book.**
(ii) Attempt ONLY FOUR questions from PART-II by selecting TWO questions from EACH SECTION. ALL questions carry EQUAL marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.
(vii) Use of Calculator is allowed.

PART – II
SECTION – A

- Q. No. 2.** Following is the summary of closing balances (unadjusted trial balance) of Muddasar Co. for the year ended on December 31, 2016. **(20)**

<u>Accounts</u>	<u>Amount (Rs.)</u>	<u>Accounts</u>	<u>Amount (Rs.)</u>
Cash	80000	Accounts Receivable	35200
Store Supplies	5000	Prepaid Rent	11240
Furniture	7600	Accumulated Depreciation on Furniture	1520
Insurance	8500	Plant & Machinery	45000
Accumulated Dep. on		Capital	165000
Plant & Machinery	9000	Drawings	31000
Accounts Payable	8500	Salaries Expenses	9500
Sales Revenue	212980	Purchases	95000
Advertising Expenses	7000	Purchase Returns	6500
Wages	10 000	Opening Merchandise Inventory	45000
Sales Returns	3000	Miscellaneous Expenses	5000
Commercial Expenses	5460		

Additional Information (adjustments) needs settlements at the end of period to show the true picture of the financial performance of Co.

- i. Closing Merchandise Inventory valued at Rs. 35 000
- ii. Store supplies on hand at the end of year is Rs. 1500
- iii. It is noticed that Prepaid Rent amounting Rs. 9240 was expired during the period
- iv. Prepaid Insurance is valued Rs. 1500 at the end of the period
- v. Outstanding salaries are Rs. 3000
- vi. Depreciation is charged @ 10 % for Plant & Machinery and @ 7% for Furniture

Required: Based upon above information, prepare Adjusting Entries, Adjusted Trail Balance and Income Statement & Balance Sheet.

- Q. No. 3.** The Income Statement of the Abdul Rehman & Co for the year on December 31 (for each year 2015 & 2016) is given as under: **(20)**

	<u>2016</u>	<u>2015</u>
Sales	Rs. 900,000	Rs. 800,000
Cost of goods sold Beginning inventory	43,000	40,000
Purchases	637,000	483,000
Goods available for sale	680,000	523,000
Ending inventory	70,000	43,000
Cost of goods sold	610,000	480,000
Gross margin	290,000	320,000
Operating expenses	248,000	280,000
Income before taxes	42,000	40,000
Income taxes	17,000	18,000
Net income	25,000	22,000
Plus: Retained earnings, beginning balance	137,000	130,000
Less: Dividends	0	15,000
Retained earnings, ending balance	162,000	137,000

ACCOUNTANCY AND AUDITING, PAPER-I

The Balance sheet of the Company as on December 31 for each year is given as under:

	<u>2015</u>	<u>2016</u>
<u>Assets</u>	<u>Rs.</u>	<u>Rs.</u>
Cash	20,000	17,000
Marketable securities	20,000	22,000
Notes receivable	4,000	3,000
Accounts receivable	50,000	56,000
Merchandise inventory	70,000	43,000
Prepaid expenses	4,000	4,000
Property, plant & equipment (net)	<u>340,000</u>	<u>310,000</u>
Total assets	508,000	455,000
<u>Liabilities and Stockholders' Equity</u>		
Accounts payable	40,000	38,000
Salaries payable	2,000	3,000
Taxes payable	4,000	2,000
Bonds payable, 8%	100,000	100,000
Preferred stock, 6%, Rs100 par, cumulative	50,000	50,000
Common stock, Rs 10 par	150,000	125,000
Retained earnings	<u>162,000</u>	<u>137,000</u>
Total liabilities and stockholders' equity	508,000	455,000

Required: Horizontal Analysis and Vertical Analysis for the above given financial statements (Income Statement & Balance Sheet) of Abdul Rehman & Co. and comment on the results.

- Q. No. 4.** (a) The XYZ Co. purchased a large machine 5 years ago at a total cost of Rs. 400,000. (10)
The accumulated depreciation on this machine is Rs. 290,000. The corporation sold the machine at Rs.10, 000 gain.
Required: Calculate the amount would be reported as cash flow from this sale.
- (b) On April 1, 1993 Ayesha Industries purchased new equipment at a cost of Rs. 325000. (10) (20)
Useful life of this equipment was estimated at 5 years, with a residual value of Rs. 25000. For tax purposes, however, this equipment is classified as "3- year property".
Required: Compute the annual depreciation expense for each year until this equipment becomes fully depreciated under each depreciation methods listed below (Because you will record depreciation for only a fraction of a year in 1993, depreciation will extend through in all methods except MACRS) and show supporting computations.
- Straight –line, with depreciation for fractional years rounded to the nearest whole month.
 - 20%-declining-balance method, with the half-year convention. Limit depreciation in 1998 to an amount which reduces the undepreciated cost to the estimated residual value.
 - Sum-of-the-years'-digits, with the half-year convention
 - MACRS accelerated rates for "3-year property"

SECTION-B

- Q. No. 5.** Proprietor (Owner) of ABC Industries has limited knowledge of Cost & Managerial Accounting who prepared Income Statement for his business for the year ended on December 31, 2016 that is given as under: (20)

	<u>(Rs.)</u>	<u>(Rs.)</u>
Sales		675000
Less: Expenses		
Direct Labour	137500	
Indirect Labour	18000	
Selling & Administrative Salaries	48000	
Raw materials purchased	248500	
Electricity bill	22500	
Insurance expired	6000	
Depreciation of factory equipments	33000	
Depreciation of sales equipments	4500	
Rent of Premises	75000	
Advertising	<u>81500</u>	<u>674500</u>
<u>Net Profit</u>		<u>500</u>

The Owner has some doubts about the accuracy of the above statement and has requested you (as Professional Accountant) to check over the statement and make necessary corrections based upon following additional information.

- (i) 80% of the electricity bill, 75% of insurance expired and 70% of Rent of Premises associated to Factory operations and the remaining amounts are applicable to Selling and Administrative activities.

ACCOUNTANCY AND AUDITING, PAPER-I

- (ii) Beginning Inventory (January 1, 2016) and Ending Inventory (December 31, 2016) in Rs. were:
- | | | |
|------------------|-------|-------|
| Finished Goods | 50000 | 60000 |
| Work in Progress | 42500 | 30000 |
| Raw Material | 7500 | 18000 |
- (iii) Factory overhead is applied @ Rs. 5 per machine hour. The total machine hours are 26400 during the year. Factory overhead variance is charged to cost of goods sold, finished goods and work in process ending inventories.

Required:

- (a) Prepare cost of goods manufactured and cost of goods sold statement indicating cost of goods sold at normal and at actual.
- (b) Prepare revised income statement
- (c) Explain the reason for difference between net profit as per Owner's Income statement and revised statement (prepared by you).

- Q. No. 6.** (a) Delight Food Products produces Squash Cubes by continuous processing in three departments i.e. A, B and C. During November 2017 Department B received 8000 cubes from the Department A (preceding department) and transferred 5500 cubes to Department C (next department). During the month there was a normal loss of 400 cubes at the end of process. Moreover, 600 cubes, 75% completed, were lost due to negligence of a worker in the B department. There was no work in process beginning inventory, the ending inventory was estimated as 60% completed. Following product costs were charged to the department during the month of November: (10)

Cost from preceding department	Rs. 16400
Direct Material	2000
Direct Labour	3625
Factory Overhead	<u>5075</u>
	<u>27100</u>

It is noticed that all materials are added at the start of process in Department B.

Required: Prepare the Cost of Production Report for the month of November, 2017 (for Department B).

- (b) Ahmad Enterprises produces and sells the finest quality golf clubs in all of Clay County. The company expects the following revenues and costs in 2017 for its Elite Quality golf club sets: (10) (20)

Revenues (400 sets sold @ Rs. 600 per set)	Rs. 240,000
Variable costs	Rs. 160,000
Fixed costs	Rs. 50,000

Required: How many sets of clubs (unit) must be sold for Ahmad Enterprises to reach their breakeven point?

- Q. No. 7.** XYZ Enterprises applies factory overhead @ 60% of direct labour cost. During the year 2016 following actual costs were recorded: (20)

	(Rs.)
Direct Labour cost	580000
Factory Overhead cost	428000
At the end of the year following balances appear in the some of the Control Accounts:	
Cost of Goods Sold	1750000
Finished Goods	500000
Work in Progress	250000

Required:

- (i) Based upon above given information, determine under-applied or over-applied factory overhead.
- (ii) Pass general journal entry to close factory overhead applied account at the end of year.
- (iii) Pass general journal entries to dispose off under applied or over applied factory overhead in the following cases:
- (a) The variance is considered as a significant amount
- (b) The variance is considered as an insignificant amount
- (c) The variance is considered as cause by poor scheduling of production and excessive spending

ACCOUNTANCY AND AUDITING, PAPER-I

Q. No. 8. (a) Ayesha & Co. Prepared following estimates for the year 2017: (10)

Fixed factory overhead (in Rs)	450 000
Variable factory overhead (in Rs)	600 000
Direct labour hours	200 000

However, actual results for the cost for the year 2017 were recorded as follows:

Fixed Factory overhead (in Rs)	450 000
Variable Factory overhead (in Rs)	680 000
Direct labour hours	220 000

Required: based upon above given information, Calculate:

- (i) Total Factory overhead variance
- (ii) Capacity variance
- (iii) Budget variance

(b) Calculate the total fixed cost of the shipping department of Areeba & Co. based upon the following information for the year 2016: (10) (20)

Salaries	Rs.800,000 75 percent of employees on guaranteed contracts
Packaging	Rs.400,000 depending on size of item(s) shipped
Postage	Rs.500,000 depending on weight of item(s) shipped
Rent of warehouse space	Rs.250,000 annual lease





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ACCOUNTANCY AND AUDITING, PAPER-II

TIME ALLOWED: THREE HOURS
PART-I(MCQS): MAXIMUM 30 MINUTES

PART-I (MCQS)
PART-II

MAXIMUM MARKS = 20
MAXIMUM MARKS = 80

- NOTE: (i) Part-II is to be attempted on the separate Answer Book.**
(ii) Attempt ONLY FOUR questions from PART-II by selecting AT LEAST ONE question from EACH SECTION. ALL questions carry EQUAL marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.
(vii) Use of Calculator is allowed.

PART – II
SECTION – A (AUDITING)

- Q. No. 2.** How an internal control system helps the management in conduct of their business affairs? Explain the difference among internal check, internal audit and internal control. (20)
- Q. No. 3.** ABC Company is an audit and assurance firm, which has recently accepted the audit of XYZ. Explain the purpose of auditing financial statement of XYZ and the three elements of audit risk faced by the company. (20)
- Q. No. 4.** Due to the inherent limitations of audit, auditors are only able to offer 'reasonable assurance' over the truth and fairness of the financial statements rather than absolute assurance. Keeping in view the above statement, explain the limitation of audit of financial statement. (20)

SECTION – B (BUSINESS TAXATION)

- Q. No. 5.** (A) Explain the law regarding the definition of business and taxability of business income along with the relevant examples under section (18) of Income Tax Ordinance 2001. (10)
(B) Mr. Atif is working as Chief accountant of a multi-national company. He received the following income during the tax year 2017. He is a non-filer. (10) (20)

Basic Salary	Rs. 12,00,000
Bonus	300,000
House Allowance	500,000
Conveyance Allowance	200,000
Utilities Allowance	100,000
Zakat Paid	180,000
Capital gain on sale of securities (holding period more than 12 months but less than 24 months)	70,000
Agricultural Income	400,000

Required: Calculate his tax payable.

- Q. No. 6.** (A) What is the scope of sales tax? What is the procedure for transfer of registration and deregistration under Sales Tax Act, 1990? (10)
(B) Mr Abdul Packages Ltd is a registered manufacturer of candies. Data regarding his business is given below: (10) (20)

Taxable turnover to registered person	Rs. 5,000,000
Taxable turnover to non-registered person	18,000
Sales to retailers	50,000
Exempted sales	60,000
Supplies to DTRE registered person	25,000
Zero rated supply	70,000
Supplies donated	150,000
Taxable purchases from registered person	200,000
Taxable purchases from non-registered person	90,000
Taxable Purchases from wholesaler	60,000
Imported raw material specified in SRO 644(1) 2016	100,000
Sales tax paid on PTCL dues	9,000
Sales tax paid on electricity bill	3,000

Required: Calculate the sales tax liability for July 2016

ACCOUNTANCY AND AUDITING, PAPER-II

SECTION-C (BUSINESS STUDIES AND FINANCE)

- Q. No. 7.** (A) Information technology is perceived as an important source of future economic prosperity and employment growth. Explain the role of information technology in business organisation in Pakistan's scenario. (10)
- (B) You have been hired as a financial advisor to Raheel Abbas. He has received two offers for playing professional basketball and wants to select the best offer, based on considerations of money only. Offer A is a Rs.10m (offer for Rs.2m a year for 5 years). Offer B is a Rs.11m (offer of Rs.1m a year for four years and Rs.7m in year 5). (10) (20)
Required: Calculate the present value of each contract by assuming a range of interest rate (8% - 14%). What is your advice regarding the contracts.
- Q. No. 8.** (A) Define financial markets and explain the features and classification of financial markets. (10)
- (B) ABC Company is considering a new product line to supplement its range line. It is anticipated that the new product line will involve cash investment of Rs.700,000 at time 0 and Rs. 1.0 million in year 1. After tax cash inflows of Rs. 250,000 are expected in year 2, Rs 300,000 in year 3, Rs. 350,000 in year 4, and Rs. 400,000 each year thereafter through year 10. Through the product line might be viable after year 10, Company prefers to be conservative and end all calculations at that time. (10) (20)
Required: (a) if the required rate of return is 15% what is the net present value of the project. Is it acceptable?
(b) What is its internal rate of return?
(c) What would be the case if the required rate of return was 10%?



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AGRICULTURE & FORESTRY

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II by selecting TWO questions from EACH SECTION. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART – II
SECTION – A

- Q. No. 2.** Global warming is one of the major threats to food security. What priority measures, in short and long terms, do you suggest to mitigate the negative impacts and to use the benefits of climate change on different agricultural sectors? Give examples where necessary. (20)
- Q. No. 3.** Pakistan is suffering from serious edible oil deficit. Suggest a strategy integrating agricultural sciences and the Government to improve the present situation. (20)
- Q. No. 4.** Discuss bio-fortification. How is it helpful to provide basic human nutrition needs and to combat with malnutrition? Explain with examples. (20)
- Q. No. 5.** Biotechnology offers several opportunities for crop genetic improvement to meet the present and future challenges. Discuss with suitable examples. (20)

SECTION – B

- Q. No. 6.** Green fodder is an excellent and the cheapest source of nutrition to livestock in Pakistan, but it is not available in enough quantities. Many rangelands are present in Pakistan, how these could be used to improve the availability of the green fodder. (20)
- Q. No. 7.** Forest area in Pakistan is not according to the international standards. What public and government can do to improve forests area in Pakistan? Discuss in detail. (20)
- Q. No. 8.** Discuss the current situation and suggest prioritize strategies to improve forest based wildlife in Pakistan (20)



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Roll Number

ANTHROPOLOGY

TIME ALLOWED: THREE HOURS

PART-I (MCQS)

MAXIMUM MARKS = 20

PART-I(MCQS): MAXIMUM 30 MINUTES

PART-II

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

- Q. No. 2.** Define anthropology. How is it different from other fields of Social Sciences in terms of approach and methodology? **(20)**
- Q. No. 3.** Discuss the issue of objectivity and subjectivity in the field of social research. Explain whether or not objective research is attainable in social anthropology. **(20)**
- Q. No. 4.** Culture develops in response to the basic needs of human beings. Explain. **(20)**
- Q. No. 5.** Economics systems evolved through reciprocity to redistribution and market system. Explain. **(20)**
- Q. No. 6.** Religion is a significant commonality in Pakistani Culture. How sectarianism can be controlled to use religion for national integration? **(20)**
- Q. No. 7.** Elaborate different types of kinship systems. Kinship affect political allegiances in Pakistan. Explain. **(20)**
- Q. No. 8.** Write short notes on any **FOUR** of the following: **(5 each) (20)**
- (a)** Rural-urban migration
 - (b)** Participant observation
 - (c)** Types of family
 - (d)** Main branches of anthropology
 - (e)** Cultural relativism
 - (f)** Applied anthropology and community development



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APPLIED MATHEMATICS

TIME ALLOWED: THREE HOURS

MAXIMUM MARKS = 100

- NOTE:**(i) Attempt **ONLY FIVE** questions. **ALL** questions carry **EQUAL** marks
(ii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iii) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(iv) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(v) Extra attempt of any question or any part of the attempted question will not be considered.
(vi) **Use of Calculator is allowed.**

Q. No. 1. (a) If $\psi = \text{Sin} \frac{(kr)}{r}$, then show that $\nabla^2 \psi + k^2 \psi = 0$. (10)

(b) Calculate the Line Integral $\int_c A dr$, where $A = \frac{-yi + xj}{x^2 + y^2}$, and the curve C is (10)

given by the equations $x^2 + y^2 = a^2$ and $Z = 0$.

Q. No. 2. (a) Forces of magnitude P, 2P, 3P, 4P act respectively along the sides AB, BC, CD, (10)
DA of a square ABCD, of sides a, and forces each of magnitude $(8\sqrt{2}) P$ act
along the diagonals BD, AC. Find the magnitude of the resultant force and
distance of its line of action from A.

(b) A uniform ladder, of length 70 feet, rests against a vertical wall with which it (10)
makes an angle of 45° , the coefficient of friction between the ladder and the wall
and the ground respectively being $\frac{1}{3}$ and $\frac{1}{2}$. If a man, whose weight is one half
that of the ladder, ascends the ladder, where will he be when the ladder slips?

Q. No. 3. (a) A particle moves in a straight line with an acceleration kv^3 . If its initial velocity is (10)
 u , find the velocity and the time spent when the particle has travelled a distance
 x .

(b) Derive the Tangential and Normal components of the velocity and acceleration. (10)

Q. No. 4. (a) Solve the following Cauchy- Euler Equation (10)

$$x^2 \frac{d^2 y}{dx^2} - 2x \frac{dy}{dx} - 4y = 0.$$

(b) Convert the following Bernoulli Differential Equation into standard form and (10)
then solve.

$$\frac{dy}{dx} + \left(\frac{xy}{1 - x^2} \right) = xy^{\frac{1}{2}}.$$

Q. No. 5. (a) Convert the following Ordinary Differential Equation into standard form and then (10)
solve using Method of Variation of Parameters.

$$x^2 y'' - 3xy' + 3y = 2x^4 e^x$$

(b) Check whether the following Ordinary Differential Equation is an Exact Equation (10)
or not. If yes, then solve.

$$(3x^2 y + 2) dx + (x^3 + y) dy = 0$$

APPLIED MATHEMATICS

Q. No. 6. (a) Find the Fourier Series of f on the given interval. (10)

$$f(x) = \begin{cases} -1, & -\pi < x < 0 \\ 1, & 0 \leq x < \pi \end{cases}$$

(b) Solve the following Partial Differential Equation subject to the conditions given. (10)

$$a^2 \frac{\partial^2 u}{\partial x^2} = \frac{\partial^2 u}{\partial t^2}, \quad 0 < x < L, \quad t > 0,$$

$$u(0, t) = 0, \quad u(L, t) = 0, \quad t > 0,$$

$$u(x, 0) = f(x), \quad \frac{\partial u}{\partial t} = g(x) \text{ [at time } t = 0], \quad \text{and } 0 < x < L.$$

Q. No. 7. (a) Use Newton-Raphson method to find solution accurate to within 10^{-4} for the non-linear equation. (10)

$$x^3 - 2x^2 - 5 = 0, \quad I = [1, 4]$$

(b) Use Lagrange Interpolating polynomial of degree two to approximate $f(8.4)$, If (10)

$$f(8.1) = 16.94410, \quad f(8.3) = 17.56492, \quad f(8.6) = 18.50515, \quad f(8.7) = 18.82091.$$

Q. No. 8. (a) Approximate $\int_0^1 \frac{dx}{1+x^2}$ using Trapezoidal rule and Simpson's rule with $n=4$. (10)

Also compare your results with the exact value of the integral.

(b) Use Euler's method to approximate the solution of the following initial value problem. (10)

$$y' = \frac{1+y}{t}, \quad 1 \leq t \leq 2, \quad \text{with } y(1) = 2, \quad h = 0.25$$



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Roll Number

ARABIC

TIME ALLOWED: THREE HOURS

PART-I(MCQS): MAXIMUM 30 MINUTES

PART-I (MCQS)

PART-II

MAXIMUM MARKS = 20

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt ONLY FOUR questions from PART-II. Answer must be written in respective language except where specified in the question paper. ALL questions carry EQUAL marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART – II

سؤال نمبر 2 : اكتب عن شعر النقااض واسباب انتشارها مع ذكر اهم شعراء النقااض مع ذكر عيوب ومحاسن شعر النقااض -
(20)

سؤال نمبر 3 : اكتب عن الحياة الدينية في الجزيرة العربية، في العصر الجاهلي، مع ذكر انواع الشعر الجاهلي، ولماذا لم يصل الينا الشعر الجاهلي كاملا .
(20)

سؤال نمبر 4 : لماذا كان ادباء الاندلس يحرصون على مجازاة ادباء الشرق والتفوق عليهم، وماهي سمات الالفاظ والاساليب في الشعر الاندلسي؟
(20)

سؤال نمبر 5 : ما الفرق بين الرومانسية والكلاسيكية او الواقعية مع ذكر الاسباب التي ادت الى ظهور الرومانسية في الادب العربي الحديث -
(20)

سؤال نمبر 6 : اشرح الابيات مع ذكر قائلها والغرض من القصيدة -
وما تمسك بالوصل الذي زعمت
إلا كما تمسك الماء الغرابيل
كانت مواعيد عرقوب لها مثلا
وما مواعيدها إلا الأباطيل
ارجو وأمل أن يعجلن في أبد
وما لهن طوال الدهر تعجيل
فلا يغرنك ما مننت وما وعدت
إن الأمانى والأحلام تضليل
(20)

سؤال نمبر 7 : عرف الاشتقاق وانواعه في العربية مع ذكر امثلة -
(20)

سؤال نمبر 8 : اكتب بالتفصيل عن حياة واعمال الشاعر الذي لقب بـ"حسان الهند" وما السبب في ذلك؟
(20)

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Roll Number

BALOCHI

TIME ALLOWED: THREE HOURS

PART-I (MCQs)

MAXIMUM MARKS = 20

PART-I(MCQs): MAXIMUM 30 MINUTES

PART-II

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt ONLY FOUR questions from PART-II. Answer must be written in respective language except where specified in the question paper. ALL questions carry EQUAL marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q. Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART- II

سوال نمبر 2: جہل و داغئیں سرلاں شہ کیے سرا سد (100) لہوانی ہشتا کے (مضمون) ہشتہ بکن ات۔

(i) بلوچی ہنرا تک ء جنین آدمائی (زاکٹائیانی) کرد

(ii) چائینہ پاکستان کورڈیور (CPEC) ء گوادر ہسرا اثرات

(iii) بلوچستان ہسرا گو سسٹگیں شیخ سالانی سیاسی جا ورائی (ماتائی) اثرات

(iv) آثار قدیمہ ء "مہر گڑھ ڈھاڈڑ" ہارزشت (اہمیت)

سوال نمبر 3: جہل و داغئیں بلوچی لہوانی شہ کیے شائراں شہ کیے شائری ء اڈم (فن) ہسرا ہشتہ بکن ات۔

(i) گل خان نصیر (ii) بشیر بیدار (iii) اللہ بخش بیدار (iv) سید ظہور شاہ ہاشمی

یا

بلوچی لہوانی شہ کیے شائراں شہ کیے شائری ء اڈم (فن) ہسرا ہشتہ بکن ات۔

سوال نمبر 4: جہل و داغئیں مہرائی (رومانوی) داستان شہ کیے سرا ہشتہ بکن ات۔

(i) شہداد مہناز (ii) شریں دودستین (iii) حمل و ماہر گنج

(iv) عزت دمہرک (v) جیگر و گراناز

یا

جہل و داغئیں جنگلی داستان شہ کیے سرا ہشتہ بکن ات۔

(i) بالاج کورجی (ii) حمل کھنسی (iii) میر چاکر رند (iv) رحمتی مری

سوال نمبر 5: جہل و داغئیں دودوانی (رسم و رواج) ہسرا دو (2) ء ہابت ہشتہ بکن ات۔

(i) ربالو (ii) ساگک (iii) ہنی بند (راستی حنی) (iv) ڈڑکی حنی (v) ہبجاری (vi) خیل بندی (کلمہ)

یا

بلوچی راج (قوم) ء ہپیداک بوگ ء بگرتاں نرک (مرگ) ء ہپے دودور ہیدگ (رسم و رواج) آنت ہشتہ بکن ات۔

سوال نمبر 6: جہل و داغئیں نڈ (مذکر کمنادگ) (مونت) ء مگر و نیت۔

(i) بنگک (ii) ڈال (iii) ہنگک (iv) ہیشار (v) نریان (vi) بانور (vii) ہن

(viii) بار (ix) مات (x) ڈکچ

(ب) جہل و داغئیں یک (واحد) ء ہماز (جمع) ء مگر و نیت۔

(i) کروس (ii) ہس (iii) ہیشی (iv) حم (v) تاک (vi) مود (vii) ہنیک

(viii) چم (ix) ہرنگک (x) چنگک

یا

ہنل چے انت ہنل ء تعریف ء بکن ات۔ دو اتل ہم ہشتہ بکن ات۔



سوال نمبر 7: جہل و آزما تک (افسانہ نگار) کاراں شے کے سراپہ کن ات۔ (20)

(i) گوہر ملک (ii) بائل دستپاری (iii) زاہد ورنسی راجی (iv) صبیحہ کریم

یا

آزما تک (افسانہ) بہ تعریف و تینیک و تہ کن ات۔

سوال نمبر 8: جہل و دانگن بلوچی و ما انگریزی تراک (ترجمہ) کن ات۔ (10)

The Novel tells a story that is the fundamental aspect without which it could not exist that is the highest factor common to all novels. The nature of characters pulls what they do, Pulls what happens to them as a result of their actions, plus why they do what they do equals the theme of a story. (الف)

(10) (ب):

کجام قصہ و سرجمیں بذانت و آئی ہوا ریں تاثر و یک تک و بہرے سرجم نہ کنٹ۔ بلکن و کلیں تک و پہنات و بہر ہوا ریں و قصہ و سرجم کن انت و تاثرے پشت گج انت۔ ناول قصہ و دیروی کرتگیں شکل انت دتی دیروی و اے عمل و ناول و قصہ پشت نہ گیتگ بلکن و تنیک و ناول گوں قصہ و دیروان انت۔



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UNDER THE FEDERAL GOVERNMENT

Roll Number

BOTANY

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

- Q. No. 2.** Discuss biological and economic importance of Fungi. (20)
- Q. No. 3.** Describe main features of Gymnosperms and explain life cycle of Pinus. (20)
- Q. No. 4.** What are main types of Pollution? What may be the measures for its control? (20)
- Q. No. 5.** Explain CAM Photosynthesis contrasting it to C₄ Photosynthesis in terms of partitioning of a pathway. (20)
- Q. No. 6.** What are the evidences in support of Evolution? What contributions modern genetics has made for its support? (20)
- Q. No. 7.** What is the evidence for semiconservative replication of DNA? (20)
- Q. No. 8.** Write short notes on the following: (5 marks each) (20)
- (a) Ultrastructure of cell membrane
 - (b) Speciation
 - (c) Vernalization
 - (d) Classes of Algae



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Roll Number

BRITISH HISTORY

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II by selecting TWO questions from EACH SECTION. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART – II
SECTION – A

- Q. No. 2.** What did lead to the occurrence of Ultra-degree of mega development towards the close of 17th century A.D. in Britain known as “Glorious Revolution”? (20)
- Q. No. 3.** “The 18th century A.D. witnessed the Emergence, Rise and Growth of the two Movements (Agrarian and Industrial) which revolutionised the lives of the English people in particular and later on, of the world in general.” Comment on the statement. (20)
- Q. No. 4.** Shed ample light on the Interior as well as Exterior policy of Sir Robert Peel as British Premier with particular emphasis on Irish issue. (20)
- Q. No. 5.** What measures were taken for the Democratisation of British Parliament round the decades? (20)

SECTION – B

- Q. No. 6.** How Britain put a halt to “The policy of Splendid Isolation”? What were its positive and negative aspects? (20)
- Q. No. 7.** Why it is believed by certain circles that after Decolonisation, Britain has been subservient to US-Line of Action during Cold War and thereafter down to 9/11 and subsequent years? Do you agree or not? Argue. (20)
- Q. No. 8.** Write short Notes on any **TWO** of the following: (10 each) (20)
- (a) Sir Winston Churchill
- (b) Britain’s role in EU
- (c) Lady Diana



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Roll Number

BUSINESS ADMINISTRATION

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.
(vii) **Use of Calculator is allowed.**

PART – II

- Q. No. 2.** Daud Tools, a manufacturer of lathe tools, is currently selling a product for \$10 per unit. Sales (all on credit) for last year were 60,000 units. The variable cost per unit is \$6. The firm's total fixed costs are \$120,000. **(20)**
- The firm is currently contemplating a relaxation of credit standards that is expected to result in the following; a 5% increase in unit sales to 63,000 units; an increase in average collection period from 30 days (the current level) to 45 days; an increase in bad debt expenses from 1% of sales (current level) to 2%. The firm determines that its cost of tying up funds in receivables is 15% before taxes.
- Question:** Determine whether it would be profitable for Daud Tools to relax its credit standards. To arrive at your decision, show the calculation of;
- Additional profit contribution from sales
 - Cost of marginal investment in account receivables
 - Cost of marginal investment in bad debts

- Q. No. 3.** **(20)**
- ABC Industries**
Balance sheet ending December 31, 2016

<u>Assets</u>	<u>\$</u>	<u>Liabilities and stockholder's Equity</u>	<u>\$</u>
Cash	32,720	Accounts Payable	120,000
Marketable securities	25,000	Notes payable	-----
Accounts receivable	-----	Accruals	20,000
Inventories	-----	Total current liabilities	-----
Total current assets	-----	Long-term debt	-----
Net fixed assets	-----	Stockholder's equity	600,000
Total assets	-----	Total liabilities and stockholder's equity	-----

The following financial data for 2016 is also available;

- Sales totalled \$1,800,000.
- The gross profit margin was 25%.
- Inventory turnover was 6.0.
- There are 365 days in the year.
- The average collection period was 40 days.
- The current ratio was 1.60.
- The total asset turnover ratio was 1.20.
- The debt ratio was 60%.

Complete the 2016 balance sheet for ABC Industries using the given information.

BUSINESS ADMINISTRATION

- Q. No. 4.** Identify the major drivers of supply chain performance. Discuss the role each driver plays in creating strategic fit between supply chain strategy and the competitive strategy. Define the key metrics that track the performance of the supply chain in terms of each driver. **(20)**
- Q. No. 5.** Brand positioning is the act of establishing a distinctive image of a product or offering in the minds of customers. How do marketers analyse competition and differentiate their products for successful positioning? **(20)**
- Q. No. 6.** How do consumers process and evaluate prices? What is the 5-step process of setting the initial price for products or services? When and how should a company initiate a price change, i.e. introduce a price cut or price increase? **(20)**
- Q. No. 7.** Organizational structures are designed in two major forms; traditional and boundaryless organizations. Discuss their different types, characteristics as well as their relative advantages and disadvantages, in comparison to each other. **(20)**
- Q. No. 8.** What is Training Needs Analysis (TNA), why is it important to conduct it, and what should it evaluate? What are the types of training methods and which training method should be employed for each type of training needs? **(20)**



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Roll Number

CHEMISTRY, PAPER-I

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.
(vii) **Use of Calculator is allowed.**

PART-II

- Q. No. 2.** (a). Explain de Broglie's hypothesis and derive its equation. How Davisson and Germer proved the dual nature of electron? (10)
- (b). Explain transport number. How it can be determined by Hittorf's method for Ag^+ ions in AgNO_3 solution? (10)
- Q. No. 3.** (a). Explain the working of quinhydrone electrode. (5)
- (b). Calculate the standard heat of formation of propane (C_3H_8) if its heat of combustion is $-2220.2 \text{ kJ mol}^{-1}$. The heats of formation of $\text{CO}_2(\text{g})$ and $\text{H}_2\text{O}(\ell)$ are -393.5 and $-285.8 \text{ kJ mol}^{-1}$ respectively. (5)
- (c). Describe the criteria of spontaneity of a chemical process. Explain in terms of change in entropy, enthalpy and free energy with derivation of necessary equations. (10)
- Q. No. 4.** (a). Discuss the factors which can affect the rate of a chemical reaction. (5)
- (b). Explain Arrhenius equation. Discuss Arrhenius concept of activation energy and explain it by graphical representation. (8)
- (c). Explain enzyme catalysis with examples. Also give some characteristics of this catalysis. (7)
- Q. No. 5.** (a). What are colloids? How are they classified? Describe how colloidal solution of sulphur can be prepared? (8)
- (b). What is meant by confidence limits? Seven replicate analysis for mercury in natural gas condensate gave following results in ng/mL:
21.9 21.5 19.9 21.3 21.7 23.8 24.7
Calculate the 95% and 99% confidence limits for these measurements. (7)
- (c). Explain R_f value. Suppose that components of a mixture are separated by paper chromatography using a non-polar solvent like hexane. Describe and explain how the polarity of a compound in the mixture will affect its R_f value? (5)
- Q. No. 6.** (a). What is electrophoresis? Explain its working principle and describe its different applications as a separation and characterization technique. (7)
- (b). Explain the paramagnetic behavior of O_2 molecule on the basis of molecular orbital theory. Explain why the existence of He_2 molecule is not possible on the basis of MOT? (6)
- (c). Explain the molecular shape of $[\text{Ni}(\text{CN})_4]^{2-}$ with the help of valence bond theory. Also discuss its magnetic behaviour. (7)

CHEMISTRY, PAPER-I

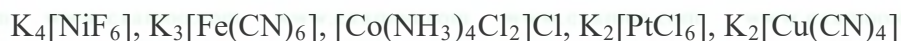
Q. No. 7. (a). Using VSEPR theory, identify the type of hybridization and draw the structure of OF_2 . What are oxidation states of O and F? (5)

(b). A buffer of pH 9.26 is made by dissolving x moles of ammonium sulphate and 0.1 mole of ammonia into 100 mL solution. If pK_b of ammonia is 4.74, calculate the value of x . (5)

(c). Explain soft and hard acids and bases (SHAB) concept with examples. How is it able to explain the stability of complexes and reaction rates? (10)

Q. No. 8. (a). Explain crystal field theory. How it differs from valence bond theory? Also explain crystal field splitting. How crystal field stabilization energy of a complex is calculated? (10)

(b). Write systemic names of following compounds. (5)



(c). Write the coordination number and oxidation state of the metal ion in each of the above stated complexes. (5)



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Roll Number

CHEMISTRY, PAPER-II

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE: (i)** Part-II is to be attempted on the separate Answer Book.
(ii) Attempt **ONLY FOUR** questions from PART-II. ALL questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
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PART-II

- Q.No. 2.** (a) Define Resonance and Resonance effect. (10)
(b) Write Short note on followings. (5+5) (20)
(i) Tautomerism (ii) Hyperconjugation.
- Q.No. 3.** (a) Complete the following reactions. (8×2=16)
(i) $\text{CH}_3\text{-CH=CH}_2 + \text{KMnO}_4 \xrightarrow{\text{H}_2\text{O}} ?$
(ii) $\text{CH}_3\text{-CH=CH}_2 + \xrightarrow[\text{Pressure}]{\text{Ni}\Delta}$
(iii) $\text{CH}_3\text{-CH=CH}_2 + \text{dil. H}_2\text{SO}_4 \longrightarrow$
(iv) $\text{CH}_3\text{-CH=CH}_2 + \text{CH}_3\text{-}\overset{\text{O}}{\parallel}\text{C-H} \longrightarrow$
(v) $\text{CH}_3\text{-CH=CH}_2 + \text{Br}_2 \xrightarrow{\text{CCl}_4}$
(vi) $\text{CH}_3\text{-C}\equiv\text{CH}_3 + \text{Na} / \text{lig NH}_3 \longrightarrow$
(vii) $\text{CH}\equiv\text{CH} + \text{NaNH}_2 \longrightarrow$
(viii) $\text{CH}\equiv\text{CH} + \text{H}_2\text{O} \xrightarrow{\text{H}_2\text{SO}_4 / \text{HgSO}_4}$
(b) 1-Butyne forms a precipitate with an ammonical solution of silver nitrate where 2-Butyne does not. Why? (4) (20)
- Q.No. 4.** Explain electrophilic substitution reaction mechanism with the help of:
(i) Nitration (ii) Sulphonation. (20)
- Q.No. 5.** (a) Distinguish between: (4×3=12)
(i) Configuration and conformation
(ii) Enantiomer and Diastereomers
(iii) R. Convention and S. Convention
(b) Define specific rotation. How do you measure using polarimeter? (8) (20)
- Q.No. 6.** (a) What do you mean by the setting of cement. (10)
(b) Discuss future of cement industry in Pakistan. (10) (20)
- Q.No. 7.** (a) Explain Aldol condensation reaction with examples. (10)
(b) What are proteins? (5)
(c) Explain Bio synthesis of cholesterol. (5)
- Q.No. 8.** Explain the following: (4 marks each) (20)
(a) Beers Lambert's Law. (b) Wood Wards Fieser Rule
(c) Hooks Law (d) Basic principle of NMR?
(e) Chemical Shift.



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UNDER THE FEDERAL GOVERNMENT
COMPUTER SCIENCE, PAPER-I**

Roll Number

TIME ALLOWED: THREE HOURS
PART-I(MCQS): MAXIMUM 30 MINUTES

PART-I (MCQS)
PART-II

MAXIMUM MARKS = 20
MAXIMUM MARKS = 80

- NOTE: (i) Part-II is to be attempted on the separate Answer Book.**
(ii) Attempt ONLY FOUR questions from PART-II by selecting TWO questions from EACH SECTION.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
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PART-II
SECTION-I

- Q. 2. (a) How many layers are in the TCP/IP stack? What are the names? (4)**
(b) How digital evidences can be preserved from a crime scene. Write in details by taking examples of digital devices commonly used these days. (4)
(c) What are the responsibilities of Operating system kernel? (3)
(d) List down any four best practices for coding standards. (3)
(e) Why do modern processors use more power when their clock frequency is increased? (2)
(f) Ali is telling Ahmad that he is representing a -ve number and its most significant bit is 1, Ahmad immediately shouted you are representing numbers using 2's compliment. True or False. And why? (2)
(g) If time slice is of 50 milliseconds and context switch requires a microsecond, how many processes can the machine service in a second? (2)
- Q. 3. (a) Write a program grade average calculator, User will input marks for five subjects and program will output the average of its marks. Print appropriate message on the base of its mark's average e.g.; Well done, Keep it up, Better luck next time etc. (5)**
(b) Given that i,j,k,n & m are integer variables. Write a condition such that: (2)
 i- hello is only printed when, any of the following conditions are met: i is twice the value of j, j is smaller than k and less than n, or m is negative.

```

inti, j, k, n, m; cin>>i>>j>>k>>n>>m;
if( )
cout<<"hello";

```

 ii. hello is only printed when i does not lies in the interval 6-9

```

inti; cin>>i;
if( )
cout<<"hello";

```

(c) Write equivalent instruction to following instruction without the use of += operator: (1)
 where w,z are integers.

```

w+=2*z+4;

```

(d) Predict the values of variables a & b after every instruction (2)

```

integer a=5 b=6
a=(b++) + 3;
b=--a;

```

(e) Complete the code such that it prompts the user for +ve number n. Then displays the output.(whatever the value of n is)(HINT: instead of triangles of stars its triangles of increasing numbers)[marks (5)

```

1 2 3 4 . . . n
1 2 3 4 ..n-1
. . .
. . .
1 2
1

```

COMPUTER SCIENCE, PAPER-I

```

for n=4 it will print
1 2 3 4
1 2 3
1 2
1
void main()
{
int n; cin>>n;
// your loops will go here
}

```

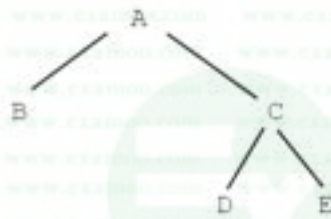
(f) In following code replace the character at posth location in the string st with the ,character ch. For example in string helloworld replacing 2nd character with i would result in hilloworld (5)

```

void main( )
{char st[15]; int pos; char ch;
int size=0;
cin>>st;
cin>>pos>>ch;
while(st[size]!='\0')
{
size++; // calculating length of current string
}
// write your code here
}

```

Q. 4. Consider the inheritance hierarchy shown below. Each part of this question is independent.

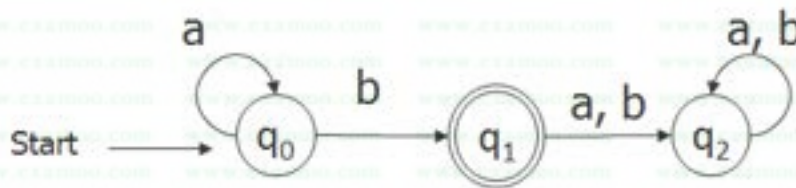


- (a) In which class(es) would it make most sense to have protected members? Which class(es) would be able to access those protected members directly? (5)
- (b) Which class(es) can access private members of class C directly? (5)
- (c) Suppose class C contains a pure virtual function. Suppose we wish to instantiate objects of this hierarchy. Which class(es) are or could be abstract and which are concrete? (5)
- (d) Consider the following list of classes: Car, SteeringWheel, Vehicle, Van, Minivan, AudioSystem, ParkingLot. Your task is to describe all of the *is-a* and *has-a* relationships between these classes. Include an inheritance hierarchy for all classes that fit. Fill in the table with *is-a* or *has-a* relationship while leaving the cells empty where no relation is applicable. (5)

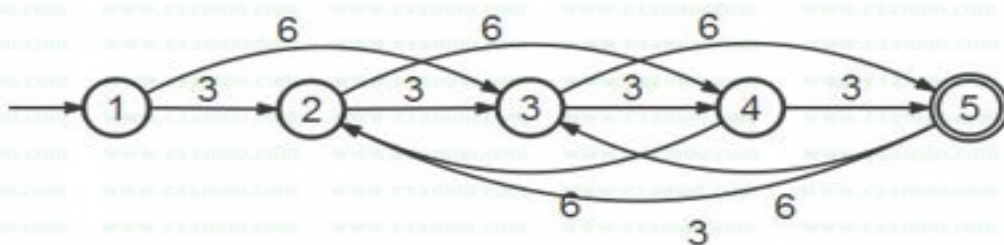
	Vehicle	Car	Van	Mini Van	Steering Wheel	Audio System	Parking Lot
Vehicle							
Car	<i>is-a</i>						
Van							
Mini Van							
Steering Wheel							
Audio System							
Parking Lot							

SECTION-II

- Q. 5.** (a) What is dangling pointer? (3)
(b) What data structure would employ to build a text editor and why? (5)
(c) Random insertion of nodes into a binary search tree would result in what types of tree shape. Elaborate. (7)
(d) How would you modify a link list based queue so that first and last node can be accessed in a constant time regardless of data nodes in the queue? (5)
- Q. 6.** (a) Define balanced tree both for AVL and Binary search tree. (4)
(b) What is informed or heuristic search what type of algorithm is used to do such a search? (6)
(c) Differentiate between graph and trees. Which is special case of the other? (5)
(d) Explain what type of problems can be solved by genetic algorithm. (5)
- Q. 7.** (a) Outline the difference between software verification and software validation. (4)
(b) Give an outline of the unit testing process for verification. (4)
(c) Agile Development is a process that values responding to change over following a plan. Discuss three issues a Software Engineer should be mindful of when adopting this approach during software development. (4)
(d) What type of project is not suited to incremental methods? (4)
(e) Outline the difference between Black box and White box testing. (4)
- Q. 8.** (a) What is the difference between lexers and parsers? (5)
(b) Write a grammar (BNF) for the language of palindromes. (5)
(c) Here DFA is given for the language L find the DFA for L^2 (5)



- (d) Convert the following DFA to a RE: (5)





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Roll Number

COMPUTER SCIENCE, PAPER-II

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II by selecting TWO questions from EACH SECTION. ALL questions carry EQUAL marks.		
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(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
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PART – II
SECTION – A

- Q. No.2.** (A) Briefly describe the functionality of the following CPU special-purpose registers: Instruction Register (IR), Memory Data Register (MDR) and Program Counter (PC). (8)
- (B) Differentiate between Address, Data and Control bus. (6)
- (C) Discuss instruction pipelining in the context of fetch-decode-execute cycle. (6)
- Q. No.3.** (A) Differentiate between hub, bridge, switch and router. (8)
- (B) Discuss how Network Address Translation (NAT) works and why is it useful? (6)
- (C) Elaborate the working of multiplexing/de-multiplexing at the transport layer. (6)
- Q. No.4.** (A) There are three processes P_A , P_B and P_C and three resources R_A , R_B and R_C . Resources R_A and R_B have one instance each while resource R_C has two instances. P_A is holding one instance of R_C and has requested for R_A . Process P_B is holding R_A and has requested for R_B . R_B is allocated to P_C which has also requested an instance of R_C . Represent the scenario with a resource allocation graph. Discuss whether there is a deadlock or not? If yes, which processes are blocked? (8)
- (B) In the context of Paging, consider the case where memory addresses are 32 bits i.e. 20 bits Virtual Page Numbers and 12 bits of offset. How many virtual pages are there and what is the size of each page? Given the virtual address 0x7589, find the virtual page number and offset. If the respective page table entry contains 0x900DF, find the physical address. (6)
- (C) In the context of I/O management, differentiate between Pooling and Interrupts. (6)

Section – B

- Q. No.5.** (A) Given two relations R and S , where R contains M tuples, S contains N tuples, and $M > N > 0$, give the minimum and maximum possible sizes (in tuples) for the resulting relation produced by each of the following relational algebra expressions. (8)
- i. $R - S$
- ii. $R \cup S$
- iii. $R \cap S$
- iv. $R \bowtie S$
- (B) Elaborate the concepts of super key, candidate key and foreign key with examples. (6)
- (C) Discuss the difference between physical data independence and logical data independence. (6)

COMPUTER SCIENCE, PAPER-II

- Q. No.6. (A) Differentiate between image sampling and quantization. Discuss how these concepts relate to spatial and intensity resolutions. (8)
- (B) In the context of image smoothing, discuss the differences between mean and median filters. (6)
- (C) For the image 'X' shown in Figure 1, show the result of applying the given morphological operators. Assume zero padding for border pixels. (6)
 - i. Dilation of X by structuring element [1 1 1].
 - ii. Erosion of X by structuring element [1 1 1]^T
 - iii. Dilation of X by a 3x3 structuring element containing all ones.

0	0	0	0	0	0	0	0
0	1	1	0	0	1	1	0
0	1	1	1	1	1	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	1	1	1	1	0	0
0	0	0	0	0	0	0	0

- Q. No.7. (A) Perform histogram equalization on the 8-bit image shown in Figure 2. (8)

5	5	5	5	5
10	10	10	10	10
30	30	30	30	30
100	100	100	100	100
100	100	100	100	100

- (B) For the 3x3 image shown in the following, apply the horizontal and vertical Sobel operators and compute the magnitude of gradient at the central pixel with intensity value 50. (6)

5	5	5
5	50	5
5	5	5

- (C) In the context of compression, differentiate between coding, spatial and temporal redundancies. (6)

- Q. No.8. (A) Elaborate the concept of three tier architecture with reference to presentation, business logic and data access layers. (8)
- (B) Differentiate between XHTML and XML. (6)
- (C) Discuss Agile and Water Fall methodologies in the context of web application development. (6)



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Roll Number

COMPARATIVE STUDY OF MAJOR RELIGIONS
(FOR NON MUSLIMS)

TIME ALLOWED: THREE HOURS PART-I(MCQS): MAXIMUM 30 MINUTES	PART-I (MCQS) PART-II	MAXIMUM MARKS = 20 MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book. (ii) Attempt FOUR questions from PART-II . ALL questions carry EQUAL marks. (iii) All the parts (if any) of each Question must be attempted at one place instead of at different places. (iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper. (v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed. (vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART-II

- Q. No. 2. Person of Jesus Christ is central in Christian faith. Elaborate its significance with brief early development and highlight the modern debate of the 'historical quest of Jesus' in this regard. (20)
- Q. No. 3. There are several methodologies for the study of religions in the west. Which inspires you the most and why? Write about this methodology, its important figures and important works on it. (20)
- Q. No. 4. How Atman is the basis of Morality in Hinduism. Explain it in the light of Vedas and Bhagavad Gita, and what kind of moral values it does generate. (20)
- Q. No. 5. Discuss the challenges faced by Jews in the middle ages and critically evaluate reinterpretation of Jewish religious thought by Saadia Gaon and Moses Maimonides as a response to that. (20)
- Q. No. 6. One of the sources of Christian theology is reason. Discuss and evaluate the role of reason and its relationship with revelation which it had in various historical phases of Christian thought. (20)
- Q. No. 7. How does Buddha look on permanent Self, *Atman*, or idea of "I"? How does *dukkha* arise and how can it be eliminated? (20)
- Q. No. 8. There are exemplary and significant teachings of the Prophet Muhammad (Peace be upon him) for the underprivileged segments, socially or economically, of the society which can help in bringing harmony in the society. Write a comprehensive note on it and how is it applicable in today's modern world in your opinion. (20)

URDU VERSION

- (20) عیسیٰ علیہ السلام کو عیسائی عقیدے میں مرکزی اہمیت حاصل ہے۔ اس کی اہمیت اور ابتدائی ارتقا مختصراً بیان کریں اور اس ضمن میں عصر حاضر میں عیسیٰ علیہ السلام کی تاریخی حیثیت پر بحث کریں۔ سوال نمبر 2:
- (20) مغرب میں دین کو پڑھنے سمجھنے کے لئے مختلف اسالیب یا مناہج متعارف ہوئے ہیں۔ آپ کو کس منہج نے سب سے زیادہ متاثر کیا، اس کی وجہ بیان کرتے ہوئے اس منہج پر تفصیلی نوٹ، مع اس کی اہم شخصیات اور ان کے کام، پر تحریر کریں۔ سوال نمبر 3:
- (20) ہندو مت میں کس طرح آتمان اخلاقیات کی بنیاد ہے، ویدک ادب اور بھگوت گیتا کی روشنی میں بیان کریں اور یہ کس طرح کی اخلاقی اقدار کو جنم دیتے ہیں۔ سوال نمبر 4:
- (20) عصر وسط میں یہودیوں کو درپیش مسائل بیان کریں اور اس ضمن میں سعدیہ گیون اور موسیٰ ابن میمون کی دینی تعبیروں کی کاوشوں کا جائزہ لیں۔ سوال نمبر 5:
- (20) نصرانیت میں علم دین یا الہیات کے مآخذ میں عقل یا منطق کو خاص مقام حاصل ہے، اس پر تفصیلی گفتگو کریں اور اس کے ساتھ عقل اور نقل یا وحی کے تعلق کو، جو نصرانیت کے مختلف ادوار میں رہا ہے، بیان کریں۔ سوال نمبر 6:
- (20) گوتم بدھ کا نظریہ آتمان یا مستقل نفس یا خود۔ کے بارے میں کیا ہے؟ دکھ کے وجود کا سبب کیا ہے اور اس کو کس طرح ختم کیا جا سکتا ہے؟ سوال نمبر 7:
- (20) محمد ﷺ کی تعلیمات میں معاشرے کے کم مستفیض یا غیر مراعات یافتہ افراد، سماجی یا اقتصادی طور پر، کے بارے میں نہایت ہی اہم اور مثالی تعلیمات ملتی ہیں جو معاشرے میں ہم آہنگی قائم کرنے میں بہت مددگار ثابت ہو سکتی ہیں۔ اس پر جامع نوٹ تحریر کریں اور آپ کے خیال میں یہ تعلیمات آج کے جدید دور میں کس حد تک معاون ثابت ہو سکتی ہیں۔ سوال نمبر 8:



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Roll Number

CONSTITUTIONAL LAW

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART – II

- Q. No. 2.** “The power and jurisdiction of parliament, says, Sir Edward Coke, is so transcendent and absolute, that it cannot be confined, either for causes or persons, within any bounds.” Discuss with reference to British Parliament. **(20)**
- Q. No. 3.** Article 62 and 63 of the Constitution of Islamic Republic of Pakistan, in their present form, merely create a Constitutional uncertainty and obscurity. Do you agree? Discuss in the light of the application of these provisions by the superior judiciary in contemporary era. Is there a need of amendment to Article 62 and 63? **(20)**
- Q. No. 4.** Discuss in detail the system of checks and balances in the Constitution and in the political structure of United States of America. **(20)**
- Q. No. 5.** “President in the Fifth Republic of France is the symbol of Bonapartism.” Comment. **(20)**
- Q. No. 6.** The Indian Constitution has set up “a quasi-federal government” in India. Explain and comment. **(20)**
- Q. No. 7.** How Grand National Assembly of Turkey is elected? Discuss its powers and functions. **(20)**
- Q. No. 8.** Make a comparative analysis of the salient features of the Constitution of the former Soviet Union and present day Russian Federation. **(20)**



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Roll Number

CRIMINOLOGY

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II by selecting ONE question from EACH SECTION. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART-II
SECTION-I

- Q. No. 2.** Define Criminology. Discuss the scope of criminology in Pakistan. **(20)**
- Q. No. 3.** What is the Islamic perspective on crime and punishment? Explain your answer with the help of proper examples. **(20)**

SECTION-II

- Q. No. 4.** What is juvenile delinquency? Explain the nature, extent and causes of juvenile delinquency in Pakistan. Suggest remedial measures for reducing juvenile delinquency in Pakistan. **(20)**
- Q. No. 5.** Trace back the history and development of police organization in Pakistan. **(20)**

SECTION-III

- Q. No. 6.** What is Criminal investigation? Explain the key principles of criminal investigation. **(20)**
- Q. No. 7.** To what extent Interpol has been successful in reducing organized crime at international level. Discuss **(20)**

SECTION-IV

- Q. No. 8.** Intelligence-led policing has become an effective model of policing in tackling organized crime. Discuss the background and key principles of intelligence-led policing. **(20)**
- Q. No. 9.** Discuss the laws and institutional arrangements for controlling money laundering in Pakistan. **(20)**



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Roll Number

ECONOMICS, PAPER-I

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE: (i) Part-II is to be attempted on the separate Answer Book.**
- (ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.**
- (iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.**
- (iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.**
- (v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.**
- (vi) Extra attempt of any question or any part of the attempted question will not be considered.**

PART-II

- Q. No. 2. (a) State the bases of IS-LM framework (equations & establish equilibrium) and comment whether it is a short run or long run analysis. State bases for your answer. (15)**
- (b) Do you think this approach (a) above, is still applicable for policy formulation. (5) (20)**
- Q. No. 3. (a) How the concepts of notional aggregate demand (Keynesian) and real aggregate demand (neo-classical), leads to economic fluctuations in the economy. (10)**
- (b) How equilibrium is established in the market under the above (a) approaches. (10) (20)**
- Q. No. 4. (a) Analyze three different shapes of Aggregate Supply Curve (Constant, positively sloped and vertical). (10)**
- (b) Explain the role of shifts in Aggregate Demand and their impacts on economy in all three types of Aggregate Supply Curves. Relate such impacts in response to Fiscal policy. (10) (20)**
- Q. No. 5. (a) Explain Arc and Cross elasticities and analyze their role in decision making by the consumers. (10)**
- (b) Point out application of these theories; quote such examples and explain. (10) (20)**
- Q. No. 6. (a) Discuss major cannons of taxation and their relevance to tax system in Pakistan. (10)**
- (b) Do you think that the tax system in Pakistan is based upon cannons of taxation (restrict your discussion to the application of cannons of taxation). (10) (20)**
- Q. No. 7. (a) What is Balance of Payment? Point out its major components. (10)**
- (b) Analyze any one years' BOP of Pakistan. (10) (20)**
- Q. No. 8. Write short note on any TWO of the followings. (10 each) (20)**
- (i) Perfect and Pure competition**
- (ii) Monetary policy and its tools to control of money supply**
- (iii) Balanced and Un-balanced growth theory**



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Roll Number

ECONOMICS, PAPER-II

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART-II

- Q. No. 2.** What are the causes of over time worsened income distribution in Pakistan? Give some practicable options to overcome poverty and income inequalities in the country. **(20)**
- Q. No. 3.** Express your views about trends in the balance of trade in Pakistan and factors affecting them. How the situation can be made favourable for Pakistan? **(20)**
- Q. No. 4.** Agriculture's share in GDP and employment in Pakistan has reduced over time. Express your views about this decline in the light of the experience of some developed countries in the world. **(20)**
- Q. No. 5.** Critically examine the performance of fiscal policy adopted in Pakistan overtime. Express your views about the appropriateness of fiscal policy tools applied for the chosen fiscal policy. **(20)**
- Q. No. 6.** Specifically describe the history of nationalization, denationalization and privatization in Pakistan. Why denationalization of the nationalized organizations became inevitable in Pakistan? **(20)**
- Q. No. 7.** Identify and prioritize three factors hindering the economic progress in Pakistan. What measures would you propose for the sustainable growth of the economy? **(20)**
- Q. No. 8.** Briefly explain any **TWO** of the followings: **(10 each) (20)**
- (a)** Government Efforts to address Energy Crisis in Pakistan
 - (b)** Scope of Import Substitution Strategy in Pakistan
 - (c)** Climate Change Challenges for the economy of Pakistan



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Roll Number

ENGLISH LITERATURE

TIME ALLOWED: THREE HOURS

PART-I(MCQS): MAXIMUM 30 MINUTES

PART-I (MCQS)

PART-II

MAXIMUM MARKS = 20

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

- Q. No. 2. Bertrand Russell bridges the esoteric philosophical concerns and the issue of mundane endeavour for contentment in his *The Conquest of Happiness*. Discuss. (20)
- Q. No. 3. William Wordsworth's 'Lines Composed Few Miles above Tintern Abbey' is an attempt, in vein, to retrieve the irretrievable luscious experience that has foundered into the realm of the past. Explain (20)
- Q. No. 4. How does T.S Eliot envision the chaotic collapse of ever-cherished convictions of system and sublimity in the modern context in *The Wasteland*? (20)
- Q. No. 5. Theatre of Absurd marks the break from obsession with heroic adventure and focuses the insignificance of the human accomplishments. Substantiate the statement with reference to Samuel Beckett's *Waiting for Godot*. (20)
- Q. No. 6. Amidst the swarming stories of deception and betrayal, O' Henry's *The Gift of the Magi* appears as a soothing assurance for lovers. Elaborate. (20)
- Q. No. 7. How does Lawrence fictionalize the libidinal psychic patterns in his *Sons and Lovers*? What is your opinion about its critical reception in various social settings? (20)
- Q. No. 8. The modernist aspiration for scientification of academic discourses resulted in development of the structuralist attitude in the literary studies. Explain. (20)



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Roll Number

ENVIRONMENTAL SCIENCE

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART – II

- Q. No. 2 (a) Write a detail note on Alternative Energy Resources. (10)
(b) What are the Environmental Impacts on food production? (10) **(20)**
- Q. No. 3 (a) What are the events that triggered the interest in bioremediation? (07)
(b) What are different steps in anaerobic treatment for biogas generation? (07)
(c) Write a note on Environmental Geology. (06) **(20)**
- Q. No. 4 What is meant by smog? Explain the main causes of smog in Punjab. Summarise the effect of key meteorological factors on dispersion of pollutants in the atmosphere. (20) **(20)**
- Q. No. 5 (a) Elaborate the concept of greenhouse effect and its importance to global climate. (08)
(b) What are drivers and indicators of Climate Change and how they effects the natural and societal system. (12) **(20)**
- Q. No. 6 (a) What are the key factors of National Climate Change Policy 2012? (10)
(b) Write a brief note on National Drinking Water Policy 2009. (10) **(20)**
- Q. No. 7 (a) Discuss Briefly some Common Types Occupational Health & Safety Hazards. (05)
(b) Give a brief about Environmental Impact Assessment (EIA) procedural stages? In the context of EIA, what type of information is gathered when establishing a baseline? (15) **(20)**
- Q. No. 8 Write short notes on any **FOUR** of the Following: (05 each) **(20)**
(a) Wetlands (b) Carbon Footprints
(c) Ozone Depletion (d) REDD+
(e) Desertification (f) GIS & Remote Sensing



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Roll Number

EUROPEAN HISTORY

TIME ALLOWED: THREE HOURS PART-I(MCQS): MAXIMUM 30 MINUTES	PART-I (MCQS) PART-II	MAXIMUM MARKS = 20 MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book. (ii) Attempt ONLY FOUR questions from PART-II by selecting TWO questions from EACH SECTION. Answer must be written in respective language except where specified in the question paper. ALL questions carry EQUAL marks. (iii) All the parts (if any) of each Question must be attempted at one place instead of at different places. (iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper. (v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed. (vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART – II
SECTION-A

- Q. No. 2.** Rational ideas and ‘fear’ determined the course of French Revolution in the eighteenth century. Discuss. (20)
- Q. No. 3.** What were the effects of Napoleon Bonaparte-I’s home policy on French society? (20)
- Q. No. 4.** How would you argue that lessons cannot be drawn from the European Revolutions in 1830s and 40s as historical process is specific to a particular context? (20)
- Q. No. 5.** What kinds of symbols were used by the movements for uniting Germany and Italy in the nineteenth century? (20)

SECTION – B

- Q. No. 6.** How did the Great Depression in the 1930s effect societies and cultures in Europe? (20)
- Q. No. 7.** Capitalistic trends promoted the ideologies of secularism and liberalism in twentieth-century Western Europe. Discuss. (20)
- Q. No. 8.** How did violence and Communist ideas shape the events culminating in the outbreak of the Russian Revolution of 1917? (20)



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Roll Number

GENDER STUDIES

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART – II

- Q. No. 2.** What are the fundamental differences between Gender Studies and Women's Studies? (20)
Substantiate your argument(s) with examples. Highlight the current status of women studies in Pakistan
- Q. No. 3.** Write a comprehensive essay on the 'sex versus gender debate' in feminist philosophy and social sciences, reflecting nature versus nurture argument. (20)
- Q. No. 4.** What type(s) of feminism can elevate the social-cultural, economic and political status of women in Pakistan? (20)
- Q. No. 5.** What are the reasons responsible for ranking Pakistan as the second-worst country in the world for gender inequality despite Pakistan commitment to many international conventions and strong commitment to gender equality in 1973 constitution? (20)
- Q. No. 6.** In the last two decades, *globalization* has had a huge impact on the lives of women in developing nations, including Pakistan. What are the impacts of global political economy on Pakistani women? (20)
- Q. No. 7.** Believing in the statement that "women cover half the sky", do you think we need equal number of women in all spheres of public domain, especially in politics? (20)
- Q. No. 8.** Write short notes on any **TWO** of the followings: (10 each) (20)
- (a) 'Gender Strategic Needs' and 'Gender Practical Needs'
- (b) APWA and WAF
- (c) Government Initiative for combating the menace of violence against women



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Roll Number

GEOGRAPHY

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II by selecting TWO questions from EACH SECTION. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		
(vii) Maps and Diagrams to be drawn wherever needed.		

PART-II
SECTION-I

- Q. No. 2.** Discuss Plate Geography in the light of Plate Tectonics theory and discuss with examples impact of plate movements on development of land forms. **(20)**
- Q. No. 3.** What is Isostasy? Discuss differences between Airy's and Pratt's concepts with a critical discussion on Global Isostatic Adjustment. **(20)**
- Q. No. 4.** What are air masses and fronts? How are they classified? Discuss their impact on world weather. **(20)**
- Q. No. 5.** Give classification of hazards and discuss steps taken in Pakistan to monitor, mitigate and manage natural disasters. **(20)**

SECTION-II

- Q. No. 6.** What is the difference between traditional and modern approaches to planning for Tourism as per opinion of Geographers? Discuss with reference to the industry in Pakistan. **(20)**
- Q. No. 7.** What are Development Indicators? How are they related to Social and Economic Indicators? Discuss with reference to welfare approach in Human Geography. **(20)**
- Q. No. 8.** Write short notes on any **TWO** of the following: **(10 each) (20)**
- (a)** Malthusian theory of Population Growth
 - (b)** Weber's theory of Industrial Location
 - (c)** Karst topography



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GEOLOGY

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II by selecting TWO questions from EACH SECTION. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART-II
SECTION-I

- Q. No. 2.** (a) Briefly describe internal structure and composition of the earth. (10)
(b) What do you know about Isostasy and Isostatic Adjustment? Explain. (10)
- Q. No. 3.** (a) Describe various modes of fossilization. (15)
(b) Briefly describe various lithostratigraphic units. (5)
- Q. No. 4.** (a) Describe various sedimentary structures of the clastic rocks. Also write (10)
down their importance in the field.
(b) Describe various types of volcanic material and their characteristic features. (10)
- Q. No. 5.** (a) Write down the genetic classification of faults. Also relate principal stresses with (10)
all those faults.
(b) Briefly describe the various types of plate boundaries and the associated earth (10)
features along them.

SECTION-II

- Q. No. 6.** Briefly describe various types of gravity anomalies and their corrections. (20)
- Q. No. 7.** (a) What do you know about the trapping mechanism of hydrocarbons? Explain. (15)
Also describe various types of traps.
(b) What do you know about bright spot technique? Explain. (5)
- Q. No. 8.** Write short notes on any TWO of the followings:- (10 each) (20)
(a) Stratigraphic Sequence.
(b) Copper deposits of Pakistan.
(c) Earthquakes (Elastic Rebound theory and Locating Epicenter)



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FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT
GOVERNANCE AND PUBLIC POLICIES**

Roll Number

**TIME ALLOWED: THREE HOURS
PART-I(MCQS): MAXIMUM 30 MINUTES**

**PART-I (MCQS)
PART-II**

**MAXIMUM MARKS = 20
MAXIMUM MARKS = 80**

- NOTE: (i) Part-II is to be attempted on the separate Answer Book.**
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

- Q. No. 2. (a)** Define and describe Governance as formation and management of the formal and informal mechanisms that regulate the public realms. **(8)**
- (b)** Describe various indicators of good governance such as Participation, Rule of Law, Transparency, Accountability, Responsiveness and Efficiency. **(12)**
- Q. No. 3. (a)** Rational Choice Theory proposes that a rational person is guided by the incentive system within which he/she operates. Explain the implication of this theory in relation to transforming systems and models of public sector governance. **(10)**
- (b)** In response to the rational choice theorists, new institutionalism theory prescribes a more comprehensive understanding of social behaviour. Explain how the new institutionalism theorists see self-interest, social values, and power structures as determinants of social behaviour. **(10)**
- Q. No. 4.** The planning Commission (PC) is an apex financial and public policy making institution of the Government of Pakistan. Elaborate the role of PC in terms of policy development for national economic growth and development of social infrastructure through the Public Sector Development Programs (PSDP). **(20)**
- Q. No. 5. (a)** A multitude of models are proposed for public policy making process. Describe and explain the six step model proposed by Patton and Swacki (1986) that begins with defining and diagnosing the problem. **(10)**
- (b)** Pakistan has a mixed-economy with a considerably large public sector. It is believed that size and scope of government needs substantial reduction in order to reduce fiscal deficit and achieve economic efficiency. Suggest strategies for gradual process of right-sizing in public sector of Pakistan. **(10)**
- Q. No. 6. (a)** Local government reforms have been designed and implemented across Pakistan during three military regimes in 1959, 1979 and 2001. Present an overview of causes of failure and success (if any) of the aforementioned reforms. **(10)**
- (b)** The case of decentralization reforms in the Indian state of Kerala has attracted a world-wide attention. Highlight key features of Kerala's decentralization model that was initiated in 1996 by the LDF (Leftist Democratic Front). **(10)**
- Q. No. 7.** Federal character of Pakistan's government is enshrined in its 1973 constitution. 18th constitutional amendment enhanced political and fiscal space for Pakistan's constituent units. Highlight key features of 18th constitutional amendment and explain its significance for the smaller provinces of Pakistan. **(20)**
- Q. No. 8.** According to the new public management model, the role of citizens in enhancing governance of public sector is critically important. Explain how civil society – an instrumental pillar of the state – can potentially transform the outcomes of governance for the benefit of citizenry. **(20)**

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COMPETITIVE EXAMINATION-2018
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT**

Roll Number

HISTORY OF PAKISTAN AND INDIA

TIME ALLOWED: THREE HOURS

PART-I (MCQS)

MAXIMUM MARKS = 20

PART-I(MCQS): MAXIMUM 30 MINUTES

PART-II

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

Q. No. 2. Analyze and elucidate the institutional structure of the Sultanate of Delhi. **(20)**

Q. No. 3. “Akbar and not Babur was the real founder of the Mughal empire”. Comment. **(20)**

Q. No. 4. Are You agree with the statement that “The Third Battle of Panipat was paved the way for the Colonial Rule in India”. **(20)**

Q. No. 5. How reconciliation developed between the Indian National Congress and All India Muslim League during 1913-1916? **(20)**

Q. No. 6. The Congress Rule in the provinces (1937-39) paved the way for the Pakistan Movement. Comment. **(20)**

Q. No. 7. In what sense the Elections of 1970 are unique in nature and important in the electoral history of Pakistan. **(20)**

Q. No. 8. Highlight the factors that create obstacles in the smooth functioning of the Parliament in contemporary history of the country. **(20)**



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Roll Number

HISTORY OF USA

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE: (i) Part-II is to be attempted on the separate Answer Book.**
- (ii) Attempt ONLY FOUR questions from PART-II n paper. ALL questions carry EQUAL marks.**
 - (iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.**
 - (iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.**
 - (v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.**
 - (vi) Extra attempt of any question or any part of the attempted question will not be considered.**

PART – II

- Q. No. 2.** What is the variance between the Treaties of Paris in 1763 and 1783? Elaborate their significant effect on the US. **(20)**
- Q. No. 3.** Why did American colonists criticized the Stamp Act of 1765? What was the Stamp Act Crisis and its repercussions on US society? **(20)**
- Q. No. 4.** Discuss the factors that have contributed to the amended status of American women with a special allusion to the Modern Feminism. **(20)**
- Q. No. 5.** Critically trace the African American Struggle for Equality and how many of them rose to the highest office. **(20)**
- Q. No. 6.** Trace out the reasons of US economy augmentation in the post WW II era. **(20)**
- Q. No. 7.** “New US Afghan policy may push Pakistan towards China.” Assess the observation in perception of the current deteriorating US-Pakistan relations. **(20)**
- Q. No. 8.** Write an all-inclusive note on the beginning and end of the Cold War. **(20)**



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FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT**

Roll Number

INTERNATIONAL RELATIONS, PAPER-I

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

- Q. No. 2.** Describe the evolutionary process through which International Relations acquired the status of an academic discipline. (20)
- Q. No. 3.** What are the points of convergence and divergence in Neo-Realist and Constructivist approaches to the study of state behaviour in contemporary international politics? (20)
- Q. No. 4.** What are the changing dimensions of security and how they vary from the classical concept of international security? (20)
- Q. No. 5.** Define the concept of Strategic Culture and highlight the major determinants of Pakistan's Strategic Culture. (20)
- Q. No. 6.** Explain the concept of Economics Liberalism and relate its core interests with the concept of Neo-imperialism or creating Economic Dependency. (20)
- Q. No. 7.** Globalisation is a buzz word of present day International Economic and Social Order; do you agree that it is transforming quickly the national cultures and politics? (20)
- Q. No. 8.** Describe the concept of Pre-Emptive Self-Defence in the context of International Law and critically evaluate the legitimacy of US use of force against Iraq. (20)



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Roll Number

INTERNATIONAL RELATIONS, PAPER-II

TIME ALLOWED: THREE HOURS PART-I(MCQS): MAXIMUM 30 MINUTES	PART-I (MCQS) PART-II	MAXIMUM MARKS = 20 MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book . (ii) Attempt ONLY FOUR questions from PART-II . ALL questions carry EQUAL marks. (iii) All the parts (if any) of each Question must be attempted at one place instead of at different places. (iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper. (v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed. (vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART – II

- Q. No. 2.** To what extent did the regime established in Russia by the Bolsheviks represent its revolutionary ideology for consumerism, political stability, law and order and social progress? (20)
- Q. No. 3.** Evaluate the strength and liabilities of “containment of world revolution policy” during the cold war. (20)
- Q. No. 4.** The manner in which a nation’s ideology dominates its foreign policy is constantly in confusion. Explore the relationship between capitalist democracy and foreign policy of United States of America. (20)
- Q. No. 5.** An analysis of the anatomy of foreign policy is an essential pre-requisite to an understanding of the dynamics of International Relations. Analyse the central theme of Pakistan’s foreign policy in the war against terrorism? (20)
- Q. No. 6.** One of the most serious dilemmas of the South-Asian politics is the contentious relations between Pakistan and India. What measures would you consider for normalization between the two neighbours? (20)
- Q. No. 7.** Prepare a study in which you assess the possibility of settlement of the Kashmir conflict such as in the case of East Timor or Bosnian crisis? (20)
- Q. No. 8.** The most compelling challenge facing Afghanistan today is, dealing with Afghan Taliban. What do you think of a political engagement and accommodation between Afghan government and Taliban giving way to stability in the region? (20)



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Roll Number

INTERNATIONAL LAW

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

- Q. No. 2.** “From the theoretical stand point, the provision for applying the ‘general principles’ sounding the death — knell of positivism”. Discuss. (20)
- Q. No. 3.** What do you mean by subject of law? Discuss individuals as subjects of International law with special reference to Reparation for injuries suffered in the service of United Nations Organization case 1949. (20)
- Q. No. 4.** According to Starke, the subject of recognition can be presented, “Less as a body of clearly defined rules or principles than as a body of fluid, inconsistent and unsystematic state practice”. Discuss. (20)
- Q. No. 5.** To what extent, if at all, are the powers of the Security Council confined to the contents of Chapters VI and VII of the United Nations Charter? (20)
- Q. No. 6.** Critically analyze the powers of the General Assembly and Security Council in the settlement of International Disputes. (20)
- Q. No. 7.** “Although Security Council has resolved most of the issues relating to threat to international peace and security but the real problem today is about its composition”. Discuss. (20)
- Q. No. 8.** Elucidate and Justify: “The United Nations, in spite of its imperfections, is the only organization that can save humanity from disaster and complete annihilation”. (20)



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Roll Number

ISLAMIC HISTORY AND CULTURE

TIME ALLOWED: THREE HOURS

PART-I(MCQS): MAXIMUM 30 MINUTES

PART-I (MCQS)

PART-II

MAXIMUM MARKS = 20

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt ONLY FOUR questions from PART-II by selecting TWO Question from EACH SECTION. ALL questions carry EQUAL marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II
SECTION-I

Q. No. 2. Describe the Socio-Political conditions of Arabia before the dawn of Islam. (20)

Q. No. 3. Holy Prophet's Hijrat from Makkah to Madina was the turning point in the history of Islam. Explain. (20)

Q. No. 4. Analyse the Fiscal Policy adopted by Umar bin Abdul Aziz during his reign. (20)

SECTION-II (20)

Q. No. 5. Give an analytical study of the Muslim Architecture in Spain with special reference to Cordova Mosque and Al-Hamra of Granada. (20)

Q. No. 6. Describe the Philosophical, scientific and literary progress under the Abbasids. (20)

Q. No. 7. Critically evaluate the Ottoman's administrative reforms with special reference to Tanzimat. (20)

Q. No. 8. Write a comprehensive essay on "Islam and the Challenges of Modernity"; in your opinion what should be an agenda for the 21st century? (20)



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UNDER THE FEDERAL GOVERNMENT**

Roll Number

JOURNALISM & MASS COMMUNICATION

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE:** (i) Part-II is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

- Q. No. 2.** Traditionally, communication theory as a distinct area of media studies has transited through minimum four eras of its development. Explain these eras and their specific characteristics by categorizing the communication theories associated with them. **(20)**
- Q. No. 3.** Elizabeth Noelle-Neumann propounded the spiral of Silence Theory in 1974 while examining public opinion as a form of social control, which later emerged as a milestone in public opinion formation research. Discuss it in detail by drawing model of the theory. **(20)**
- Q. No. 4.** In international and global communication context, communication and culture are strongly associated with each other. Discuss the nexus in the light of Marxist and Gramsci approaches. **(20)**
- Q. No. 5.** Relations between governments and mass media have more often been adversarial in Pakistan. Discuss it in historical perspective as why they have been the way have been. Be precise and critical in your attempt. **(20)**
- Q. No. 6.** How would you differentiate between Development Communication and Development Support Communication? Would you support the use of DSC tools and techniques in an increasingly cosmopolitan society? In either case, provide cogent justifications to support your opinion. **(20)**
- Q. No. 7.** In developing nations, this impression is gaining momentum that mass media and journalists more often look after their limited objectives with complete disregard to national security when reporting complex social and political issues. This calls for an effective governance of media and their affairs with essential regulations. Don't you think such impression plagues the right of freedom of expression and media? Discuss this in the perspective of contemporary media laws of Pakistan. **(20)**
- Q. No. 8.** Briefly explain the following: (5 each) **(20)**
- a. Media determinism by Marshall McLuhan
 - b. Cultural industries
 - c. PEMRA Code of Ethics
 - d. Press Information Department



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Roll Number

LAW

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART – II

- Q. No. 2.** Explain the several ingredients of the offence of rioting, when two opposite factions commit a riot, can they be said to form unlawful assembly, if so, can they be tried jointly? **(20)**
- Q. No. 3.** Under what circumstances expert evidence is admissible, discuss with reference to the opinion of a medical practitioner in a criminal case? **(20)**
- Q. No. 4.** What is legal significance of a charge in criminal case, for every charge there has to be a separate trial? Explain and illustrate the exceptions to this rule? **(20)**
- Q. No. 5.** Critically elaborate the inherent powers of civil courts. Discuss with reference to the powers to amend judgments, decrees and orders? **(20)**
- Q. No. 6.** What are the duties and powers of a court in ordering attachment before judgment? **(20)**
- Q. No. 7.** What is Estoppel? On what principle of law it is based and what are its essentials? **(20)**
- Q. No. 8.** Discuss the legal significance of Arbitration as an Alternative Dispute Resolution Mechanism. What is enforcement procedure of an Arbitral Award? **(20)**



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UNDER THE FEDERAL GOVERNMENT**

Roll Number

MERCANTILE LAW

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

- Q. No. 2.** What do you know about the issuance of prospectus of a company? What matters are to be stated in it and what is the civil and criminal liability for mis-statement in prospectus? **(20)**
- Q. No. 3.** Elaborate the conditions and procedures for the registration of mortgages and charges under company law. **(20)**
- Q. No. 4.** What do you know about the meetings and proceedings of company? Explain in detail. **(20)**
- Q. No. 5.** What is the difference between contract and agreement? Explain in detail the performance of reciprocal promises. **(20)**
- Q. No. 6.** Define arbitration agreement and elaborate what are the powers of court in appointing and removing arbitrator(s) as well as to modify and remit the award? **(20)**
- Q. No. 7.** Define negotiable instrument and also explain the special rules of evidence under the Negotiable Instrument Act, 1881. **(20)**
- Q. No. 8.** What do you know about the composition and functions of Competition Commission of Pakistan under the Competition Commission Act, 2010? **(20)**



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Roll Number

PERSIAN

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.
(ii) Attempt ONLY FOUR questions from PART-II by selecting TWO questions from EACH SECTION. Answer must be written in respective language except where specified in the question paper. ALL questions carry EQUAL marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART – II
SECTION – I

سوال نمبر 2 : احوال و آثار یکی از شاعران و نویسندگان زیر را بزبان فارسی بحث و بررسی نمایید۔
ا۔ اقبال لاهوری ب۔ امیر خسرو دهلوی
ج۔ امام محمد غزالی د۔ نظام الملک طوسی

سوال نمبر 3 : از عناوین زیر دو تا چیده روی آن مقالات مختصری را بزبان فارسی بنویسید۔ 10 ، 10
ا۔ غزل فارسی در پرتوی تاریخ و لغت ب۔ جهد و تکاپو در شعر اقبال
ج۔ تأثیرات فارسی بر زبان اردو د۔ سعدی معلم اخلاق

سوال نمبر 4 : ا۔ افعال لازم و متعدی را تعریف نموده با آوردن مثال توضیحات لازم را ارائه دهید۔ 10
ب۔ در مصاد مرکب زیر از پنج تا جمله بسازید۔ 10
آباد کردن ، اذیت کردن ، به هدف رسیدن ، بیرون رفتن ، تاکید کردن ،
تشریف آوردن ، خراب کردن ، دعوت کردن ، راه رفتن ، کمک کردن ،

سوال نمبر 5 : متن زیر را بزبان فارسی ترجمه کنید۔ (20)

After the emergence of Islam Iranian artists started to adorn the Quran. They adorned the preface and the margins of this sacred book skilfully and patiently, so it led to the appearance of a new art called “illumination”.

When “Mangols” attacked Iran they destroyed most of the cultural works. After that they gathered together many artists and supported arts. At this time the Chinese style of painting became prevalent in Iran. The study of the paintings in some books as “Kelile and Demneh” and “Shahnameh” show that the paintings of this period from the point of view of accuracy in designing, variety of colours and details are more powerful than of previous periods.

SECTION – II

سوال نمبر 6 : از اجزای زیر دو تا بزبان انگلیسی شرح نمایید۔ (20) : 10 ، 10

ا۔ دلم زو شب حدیث ناز می گفت همی گفت آن حدیث و باز می گفت
نمی آمد مرا خواب از غم دوست ز هجران سرگذشتی باز می گفت
خیال غمزه از پیکان دلدوز پیام ترک تیرانداز می گفت
نهان می مردم و می زیستم باز که جان با من سخن زان ناز می گفت

بیار باده که بنیاد عمر بر بادست
ز هر چه رنگ تعلق پذیرد آزادست
سروش عالم غییم چه مژده‌ها دادست
نشیم تو نه این کنج محنت آبادست
کز دیو و دد ملولم و انسانم آرزوست
گفت آنک یافت می‌نشود آنم آرزوست
کآن عقیق نادر ارزانم آرزوست
آن آشکار صنعت پنهانم آرزوست

ب - بیا که قصر امل سخت سست بنیادست
غلام همت آنم که زیر چرخ کبود
چه گویمت که به میخانه دوش مست و خراب
که ای بلندنظر شاهباز سدره نشین
ج - دی شیخ با چراغ همی‌گشت گرد شهر
گفتند یافت می‌نشود جسته‌ایم ما
هر چند مفلسم نپذیرم عقیق خرد
پنهان ز دیده‌ها و همه دیده‌ها از اوست

(20)

حکایت زیر را بزبان انگلیسی ترجمه کنید -

سوال نمبر 7 :

پادشاهی با غلامی عجمی در کشتی نشست و غلام دیگر دریا را ندیده بود و محنت کشتی نیازموده گریه و زاری آغاز نهاد و لرزه بر اندامش نهاد. ملک را عیش ازو منغص بود. که طبع نازک تحمل امثال این صورت نه بندد چاره ندانستند. حکیمی در آن کشتی بود ملک را گفت اگر فرمان دهی او را به طریقی خاموش گردانم گفت غایت لطف و کرم باشد بفرمود تا غلام را به دریا انداختند چند نوبت غوطه خورد از آن پس مویش گرفتند و پیش کشتی آوردند و به دو دست در سکان کشتی آویخت چون برآمد بگوشه بنشست و قرار یافت ملک را عجیب آمد پرسید که حکمت چه بود گفت از اول محنت غرق شدن نه دیده بود و قدر سلامت کشتی ندانسته.

10 ، 10 : (20)

فکرواندیشه دو تا از شاعران زیر بحث و بررسی نمایید -

سوال نمبر 8 :

- ا - مولانا روم
ب - امیر خسرو
ج - احمد شاملو
د - فروغ فرخ زاد





**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2018
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT**

Roll Number

PHILOSOPHY

TIME ALLOWED: THREE HOURS

PART-I (MCQS)

MAXIMUM MARKS = 20

PART-I(MCQS): MAXIMUM 30 MINUTES

PART-II

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

Q. No. 2. Define Philosophy and explain its main branches. (20)

Q. No. 3. Discuss key points of Popper's Fallibilism. (20)

Q. No. 4. Work out the weaknesses and strengths of Deductive method. (20)

Q. No. 5. Discuss Berkeley's critique of Locke's representative realism. (20)

Q. No. 6. Critically evaluate Rawls' notion of Original Position. (20)

Q. No. 7. In what sense Foucault may be treated as a post-modernist thinker. (20)

Q. No. 8. Write short notes on any TWO of the following: (10 each) (20)

(a) Al-Farabi

(b) Al-Ghazali

(c) Ibn Rushid



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Roll Number

PHYSICS, PAPER-I

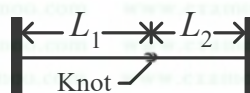
TIME ALLOWED: THREE HOURS PART-I(MCQS): MAXIMUM 30 MINUTES	PART-I (MCQS) PART-II	MAXIMUM MARKS = 20 MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book. (ii) Attempt ONLY FOUR questions from PART-II . ALL questions carry EQUAL marks. (iii) All the parts (if any) of each Question must be attempted at one place instead of at different places. (iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper. (v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed. (vi) Extra attempt of any question or any part of the attempted question will not be considered. (vii) Use of Calculator is allowed.		

PART-II

- Q. No. 2. (a) Show that the work done by a constant force is equal to the difference of initial and final kinetic energies of the body. (8)
- (b) A 25 kg bear slides, from rest, 12 m down a pine tree, moving with a speed of 5.6 m/s just before hitting the ground. (8)
- (i) What change occurs in the gravitational potential energy of the bear-Earth system during the slide?
- (ii) What is the kinetic energy of the bear just before hitting the ground?
- (c) Object *A* is launched as projectile with initial speed v at an angle θ above the horizontal. Object *B* has exactly the same initial speed at exactly the same angle as object *A* but object *B* is sliding up a frictionless incline as shown in the figure. Object *A* has mass M and object *B* has mass $2M$. During the subsequent motion, each object will reach a maximum height above the starting location. (4)

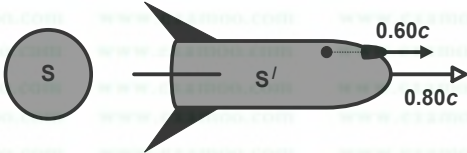


- (i) At its maximum height, which object has the larger kinetic energy? Explain.
- (ii) Which object has the larger maximum height? Explain.
- Q. No. 3. (a) Derive the expression for the total mechanical energy in simple harmonic motion. Draw and discuss the graphs of Energy versus Time and Energy versus Position. (8)
- (b) In the figure shown below, two strings have been tied together with a knot and then stretched between two rigid supports. The strings have linear densities $\mu_1 = 1.4 \times 10^{-4}$ kg/m and $\mu_2 = 2.8 \times 10^{-4}$ kg/m. Their lengths are $L_1 = 3$ m and $L_2 = 2$ m, and string 1 is under a tension of 400 N. Simultaneously, on each string a pulse is sent from the rigid support end, toward the knot. Which pulse reaches the knot first? (8)



- (c) A mass-spring system is oscillating with amplitude A . What will be the displacement at which kinetic energy is equal to the potential energy? (4)

PHYSICS, PAPER-I

- Q. No. 4.** (a) What is polarization? Discuss polarization by reflection. (8)
- (b) Light of wavelength 624 nm is incident perpendicularly on a soap film ($n = 1.33$) suspended in air. What are the (8)
- (i) least and
(ii) second least thicknesses of the film for which the reflections from the film undergo fully constructive interference?
- (c) A maintenance crew is working on a section of a three lane highway, leaving only one lane open to traffic. The result is much slower traffic flow (a traffic jam). Do cars on a highway behave like (4)
- (i) the molecules of an incompressible fluid or
(ii) the molecules of a compressible fluid? Explain.
- Q. No. 5.** (a) Show that mass and energy are interconvertible. (8)
- (b) A spaceship is moving away from the earth at a speed of $0.80c$ when it fires a missile parallel to the direction of motion of ship. The missile moves at a speed of $0.60c$ relative to the ship (see figure). What would be the speed of the missile as measured by an observer on the earth? Compare with the prediction of Galilean kinematics. (8)
- 
- (c) If \vec{A} and \vec{B} are nonzero vectors, is it possible for $\vec{A} \cdot \vec{B}$ and $\vec{A} \times \vec{B}$ to be zero? Explain. (4)
- Q. No. 6.** (a) Distinguish between Linear and Angular momentum. Derive expression for the angular momentum of a rigid body rotating about a fixed axis. Explain the Law of Conservation of Angular Momentum. (8)
- (b) A girl of mass M stands on the rim of a frictionless merry-go-round of radius R and rotational inertia I that is not moving. She throws a rock of mass m horizontally in a direction that is tangent to the outer edge of the merry-go-round. The speed of the rock, relative to the ground, is v . Afterward, what are (8)
- (i) the angular speed of the merry-go-round and
(ii) the linear speed of the girl?
- (c) A planet is moving at constant speed in a circular orbit around a star. In one complete orbit, what is the net amount of work done on the planet by the star's gravitational force? What if the planet's orbit is an ellipse, so that the speed is not constant? Explain. (4)
- Q. No. 7.** (a) Differentiate between Fermi-Dirac, Bose-Einstein and Maxwell-Boltzman statistics. (6)
- (b) Show that the entropy remains constant in a reversible process but increases in an irreversible one. (6)
- (c) When 20.9 J was added as heat to a particular ideal gas, the volume of the gas changed from 50 cm^3 to 100 cm^3 while the pressure remained at 1 atm. (8)
- (i) By how much did the internal energy of the gas change?
(ii) If the quantity of gas present was $2 \times 10^{-3} \text{ mol}$, find C_p .
- Q. No. 8.** Explain the following: (05 each) (20)
- (a) Scalar triple product (b) Surface tension
(c) He-Ne Gas LASER (d) Gravitational potential energy



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Roll Number

Roll Number

PHYSICS, PAPER-II

TIME ALLOWED: THREE HOURS

PART-I(MCQS): MAXIMUM 30 MINUTES

PART-I (MCQS)

PART-II

MAXIMUM MARKS = 20

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

(vii) Use of Calculator is allowed.

PART-II

- Q. No. 2.** (a) Define and explain Gauss' Law. Deduce Coulomb's Law from Gauss' Law. (8)
(b) Find the Electric Field Intensity due to an infinite sheet of charge. (8)
(c) The electric field near an infinite sheet of charge is 3.84×10^5 N/C. What is the surface charge density on the sheet? ($\epsilon_0 = 8.85 \times 10^{-12}$ C²/N. m²) (4)
- Q. No. 3.** (a) Derive an expression for capacitance of cylindrical and spherical capacitor. (8)
(b) Show that the energy consumed in charging a capacitor to charge Q and voltage V can be considered as potential energy stored in the field between the plates. Find expression for energy stored in the field. (8)
(c) An isolated conducting sphere whose radius R is 6.85 cm has a charge $q = 1.25$ nC. How much potential energy is stored in the electric field of this charged conductor? ($\epsilon_0 = 8.85 \times 10^{-12}$ C²/N. m²) (4)
- Q. No. 4.** (a) Derive an expression for time dependent Schrodinger's wave equation. (8)
(b) Explain de Broglie's hypothesis of matter wave. (8)
(c) Determine the de Broglie's wavelength of an electron that has been accelerated through a potential difference of 100V. ($h = 6.63 \times 10^{-34}$ J.s) (4)
- Q. No. 5.** (a) What is Transistor? Briefly explain three types of Transistor Circuit Configurations. (8)
(b) Draw a neat diagram of Transistor Characteristics in Common Emitter Configuration for P-N-P and N-P-N transistor. Also discuss types of characteristic curves for a transistor in Common Emitter Configuration. (8)
(c) Write a short note on Load line. (4)
- Q. No. 6.** (a) What do you understand by nuclear fission? How was it explained theoretically on the basis of liquid drop model? (8)
(b) Briefly describe important uses of radioisotopes. (8)
(c) A 5.30 MeV alpha particle happens, by chance, to be headed directly towards the nucleus of an atom of gold, which contains 79 protons. How close does the alpha particle get to the centre of the nucleus before coming momentarily to rest and reversing the relatively massive nucleus? (4)
- Q. No. 7.** (a) Explain construction and working of a Geiger Muller Counter. (8)
(b) Draw the characteristic of Geiger Muller Counter and also explain it. (8)
(c) What are the properties of Gamma Rays? (4)
- Q. No. 8.** Write short notes on any TWO of the following: (10 each) (20)
(a) Poynting Vector
(b) Heisenberg's Uncertainty Principle
(c) Mass Defect and Binding Energy



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Roll Number

POLITICAL SCIENCE, PAPER-I

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II** by selecting **TWO** questions from **EACH SECTION**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II
SECTION-I

- Q. No. 2.** Critically analyze the salient features of Plato's Republic. Do you think that some of its features are valid, even today? (20)
- Q. No. 3.** What is the concept of State of Nature as given by Thomas Hobbes? Make its comparison with the Social Contract as presented by John Locke and Rousseau. (20)
- Q. No. 4.** Write a detailed note on the concept of *asbiah* as given by Ibn-e-Khaldun. What is its significance in the progress and decline of nations? (20)
- Q. No. 5.** Write a detailed essay on the principle of *Ijtihad* in Islam as given by Allama Iqbal. How it can be made possible in the modern age? (20)

SECTION-II

- Q. No. 6.** What is significance of Local Government System in a country? Discuss the reasons of repeated failures of the efforts in Pakistan to establish a stable local government. (20)
- Q. No. 7.** What is the significance of independent judiciary in a democratic republic? Do you think that without an independent judiciary a system of checks and balances can be established in the government? Explain with appropriate examples. (20)
- Q. No. 8.** Write short notes on any **TWO** of the following: (10 each) (20)
- (a) Role of middle class in strengthening the democracy.
 - (b) Violation of parliamentary values and traditions in Pakistan
 - (c) Significance of religious harmony in a state.



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POLITICAL SCIENCE, PAPER-II**

Roll Number

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II** by selecting **ONE** Question from **SECTION-I** and **THREE** Questions from **SECTION-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II
SECTION-I

- Q. No. 2.** Write the Composition, Powers and Position of the French National Assembly. **(20)**
- Q. No. 3.** Compare and Contest the powers of Indian President with the American president. **(20)**

SECTION-II

- Q. No. 4.** Do you agree that Pakistan was achieved by “Jinnah” through the “constitutional democratic process for the sake of constitutional democracy”? **(20)**
- Q. No. 5.** Logically prove that 18th amendment of 1973 Constitution is considered to be the new social contract for provincial autonomy among the Pakistani political parties. **(20)**
- Q. No. 6.** To what extent global economic institutions are indispensable pieces of global governance? **(20)**
- Q. No. 7.** Examine the importance of national interest for “peace and security” with special reference to geostrategic position for economic opportunities of Pakistan in the 21st century. **(20)**
- Q. No. 8.** Write comprehensive note on the following: **(10 each) (20)**
- (a) Guardian Council of Iran.
- (b) ECO



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Roll Number

PSYCHOLOGY

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II . ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART-II

- Q. No. 2.** To what extent in the twenty-first century you justify the role of ‘the mind’ in psychology? (20)
- Q. No. 3.** Why is associative learning important? Discuss with respect to the behavioural repertoire provided by instrumental versus associative forms of learning. (20)
- Q. No. 4.** What are the major developmental changes that occur during the school years? (20)
- Q. No. 5.** How do social and cognitive processes affect behaviour? (20)
- Q. No. 6.** What are the defining characteristics of humanistic therapy? Discuss how one might assess different psychotherapies. Which of the psychotherapies appear to be the most effective? (20)
- Q. No. 7.** Is there any harm in national stereotypes? Discuss the relevant factors which we need to take into consideration when we wish to build social harmony in society. (20)
- Q. No. 8.** Write comprehensive notes on any **TWO** of the following: (10 each) (20)
- (i) Stress is linked to illness, with examples
 - (ii) Consequences of redundancy and unemployment.
 - (iii) Role of the reinforcer in classical and instrumental conditioning.



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Roll Number

PUBLIC ADMINISTRATION

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART – II

- Q. No. 2.** Traditional managerial approach to public administration stresses the need for rationality in decision making. List and discuss the necessary steps to be taken to develop a rational comprehensive model in decision making. Also give a specific, comprehensive and logical critique of the same model. **(20)**
- Q. No. 3.** There is a point of view given by some scholars that traditional bureaucratically organized public administration is broke, broken and inefficient and consequently the public has lost faith in government institutions. The image of both the federal and provincial governments is feared badly. Give your suggestions how to improve the systems, procedures, processes of government institutions in Pakistan. **(20)**
- Q. No. 4.** Leadership is a process and not a position. It is the ability to influence a group towards the achievements of legitimate goals. Identify the three phases of the development of leadership theories. Also mention some of the common traits, qualities and skills of effective and exceptional public administrators. **(20)**
- Q. No. 5.** Public administration is an activist part of government. Systematic policy formulation and implementation becomes a standard public administration function. Discuss some of the common conditions/factors which are fatal to effective implementation of public policy in a country like Pakistan. **(20)**
- Q. No. 6.** Corruption is an evil which has played havoc in the socio economic development of societies. Also sources of corruptions are similar in all public administrative settings. Having this in mind what are various types, causes and how to control corruption in public sectors organizations. **(20)**
- Q. No. 7.** Discuss why it may be in the best interest of both the public and government for administrators to have public administration background rather than having degree in the area of economics, political science or business studies? **(20)**
- Q. No. 8.** Write a comprehensive note on any **TWO** of the following: **(10 each) (20)**
- (a) Scientific Management
 - (b) Human Relation Approach
 - (c) Theory X and Y of Motivation

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Roll Number

PUNJABI

TIME ALLOWED: THREE HOURS

PART-I(MCQs): MAXIMUM 30 MINUTES

PART-I (MCQs)

PART-II

MAXIMUM MARKS = 20

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

- (ii) Attempt FIVE questions from PART-II, Answer must be written in respective language except where specified in the question paper. ALL questions carry EQUAL marks.
- (iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
- (iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q. Paper.
- (v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
- (vi) Extra attempt of any question or any part of the attempted question will not be considered.

نوٹ: ایس حصے وچوں پنج (5) سوالاں دے جواب دیو۔

(16)

سوال نمبر 2: شاہ حسین دیاں علامتاں وچ حضیاں دیاں کئی سٹھاں نیں۔ ویرو اکرو۔

(16)

سوال نمبر 3: سلطان باہو دے نظریہ عشق بارے اپنے وچا رسو۔

(16)

سوال نمبر 4: ”ترنجن“ دیاں نظماں کس ایسے دا بیان نیں؟ بھرویں گل کرو۔

(16)

سوال نمبر 5: ”پورنے“ وچ پنجابی ادیب دیاں کئی ذمہ داریاں دسیاں گئیاں نیں؟

(16)

سوال نمبر 6: ”بول ٹھی دیا باویا“ دے ڈرامیاں وچوں کئی سبق ملدے؟ بتاویں گل کرو۔

(16)

سوال نمبر 7: ”دیواتے دریا“ دے کرداراں بارے کھلارویں گل کرو۔

(16)

سوال نمبر 8: لوک گیتاں وچ پنجاب دی تاریخ دے جھلکارے ملدے نیں۔ مثالاں راہیں گل کرو۔

(16)

(8+8)

سوال نمبر 9: تھیلے سرناویاں وچوں کسے دو اتے نوٹ لکھو۔

(الف) ”گئی سرکار“ دی سیرتی ادب وچ تھاں

(ب) ”پنجابی بولی دا پچھو کر“

(ج) ڈھولا



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PURE MATHEMATICS

Roll Number

TIME ALLOWED: THREE HOURS

MAXIMUM MARKS = 100

- NOTE: (i)** Attempt **FIVE** questions in all by selecting **TWO** Questions each from **SECTION-A&B** and **ONE** Question from **SECTION-C**. **ALL** questions carry **EQUAL** marks.
- (ii)** All the parts (if any) of each Question must be attempted at one place instead of at different places.
- (iii)** Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
- (iv)** No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
- (v)** Extra attempt of any question or any part of the attempted question will not be considered.
- (vi)** **Use of Calculator is allowed.**

SECTION-A

- Q. 1. (a)** Let H and K be normal subgroups of a group G . Show that HK is a normal subgroup of G . (10)
- (b)** Let H and K be normal subgroups of a group G such that $H \subseteq K$. Then show that (10) (20)
- $$(G/H)/(K/H) \cong G/K$$
- Q. 2. (a)** Show that every finite integral domain is a field. (10)
- (b)** Consider the following linear system, (10) (20)
- $$\begin{aligned} x + 2y + z &= 3 \\ ay + 5z &= 10 \\ 2x + 7y + az &= b \end{aligned}$$
- (i)** Find the values of a for which the system has unique solution.
- (ii)** Find the values of the pair (a, b) for which the system has more than one solution.
- Q. 3. (a)** Find condition on a, b, c so that vector (a, b, c) in \mathbb{R}^3 belongs to (10)
- $$W = \text{span} \{u_1, u_2, u_3\}$$
- where $u_1 = (1, 2, 0)$, $u_2 = (-1, 1, 2)$, $u_3 = (3, 0, -4)$. (10) (20)
- (b)** Let W_1 and W_2 be finite dimensional subspaces of a vector space V . Show that
- $$\dim W_1 + \dim W_2 = \dim (W_1 \cap W_2) + \dim (W_1 + W_2)$$

SECTION-B

- Q. 4. (a)** Let $f(x) = \begin{cases} x^2 & \text{if } x \leq 1 \\ x & \text{if } x > 1 \end{cases}$ (10)
- Does the Mean Value Theorem hold for f on $\left[\frac{1}{2}, 2\right]$.
- (b)** Calculate the. $\lim_{x \rightarrow 0} \frac{\ln \sin 3x}{\ln \sin x}$ (10) (20)
- Q. 5. (a)** Evaluate $\int_{-1}^5 |x - 2| dx$. (10)
- (b)** Prove that $f_{xy}(0,0) \neq f_{yx}(0,0)$ if (10) (20)
- $$f(x, y) = \begin{cases} x^2 y \sin \frac{1}{x} & \text{when } x, y \text{ are not both } 0 \\ 0 & \text{when } x, y \text{ are both } 0 \end{cases}$$

PURE MATHEMATICS

Q. 6. (a) Find the area of the region bounded by the cycloid $x = a(\theta - \sin \theta)$, $y = a(1 - \cos \theta)$ and its base. (10)

(b) Find the equation of a plane through (5,-1,4) and perpendicular to each of the planes (10) (20)

$$x + y - 2z - 3 = 0 \text{ and } 2x - 3y + z = 0$$

SECTION-C

Q. 7. (a) Express $\cos^5 \theta \sin^3 \theta$ in a series of sines of multiples of θ . (10)

(b) Use Cauchy's Residue Theorem to evaluate the integral $\int_C \frac{5z-2}{Z(Z-1)} dz$ where C (10) (20)
is the circle $|z| = 2$, described counter clock wise.

Q. 8. (a) Find the Laurent series that represent the function $f(z) = \frac{z+1}{z-1}$ in the domain (10)

$$1 < |z| < \infty.$$

(b) Expand $f(x) = \sin x$ in a Fourier cosine series in the interval $0 \leq x \leq \pi$. (10) (20)





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PUSHTO

Roll Number

TIME ALLOWED: THREE HOURS PART-I(MCQS): MAXIMUM 30 MINUTES	MAXIMUM MARKS = 20 MAXIMUM MARKS = 80	PART-I (MCQS) PART-II
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- NOTE: (i) Part-II is to be attempted on the separate Answer Book.
(ii) Attempt ONLY FOUR questions from PART-II. Answer must be written in respective language except where specified in the Question paper. ALL questions carry EQUAL marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

(14) سوال نمبر 2: (a) د لاندیني ورکړي شوي انگرېزي عبارت په معیاري پښتو کښي ترجمه اوکړئ -

These observations aside, *RuhiMataloona* is still the most complete, the most accessible, and the most well-known of all collections of Pashto proverbs. The collection is complete in the sense that it has incorporated most of the previous smaller collections produced by foreign and local researchers. The author acknowledges at least nine such earlier collections from which he has benefited because of these multiple qualities, this compilation is one of the most recommended one for those interested in the study of Pashto proverbs.

(06) (2 each) د لاندینو نه صرف د درېو په پښتو کښي ترجمه اوکړئ - (b)

- (i) Who was doing to do this except me?
(ii) They asked the cat to watch the meat.
(iii) Oh partridge, you are the victim of your own tongue.
(iv) Do not examine the teeth of the animal that has grown up in your manger.
(v) Community is not created by force.

(14) سوال نمبر 3: (a) د لاندیني پښتو عبارت په معیاري انگرېزي کښي ترجمه اوکړئ -

د پښتون قوم بالخصوص د اعلیٰ تعلیم یافته خلقو د خپلي ژبي سره د همدردی او محبت فقدان دے - که چرې تعلیم یافته طبقه د خپلي ژبي شعر او ادب ته د عزت او همدردی په نظر اوگوري او خپلو وسانلو او ذرائعو په بنیاد د پښتنو ادیبانو، محققینو او لیکونکو حوصله افزائي اوکړي نو پښتو ژبه به علمي مقام ته اورسي - محض سیاست، تجارت او نورو ډېرو خپرو دپاره جدوجهد کول او خپلي ژبي ته توجه نه ورکول د بي خونده او بي کاره قومونو کار وي - په کار ده چې حکومت د دې ژبي سرپرستي اوکړي -

(06) (2 each) د پښتو د لاندینو متلونو نه د درېو متلونو په انگرېزي کښي ترجمه اوکړئ - (b)

- (i) تقدیر په تدبیر پوري خاندی -
(ii) تر خورل نی لا امی د بنه دے -
(iii) چرته چې ډب وي هلته ادب وي -
(iv) چې په خپله ورشي بیا څه له مرور شي -
(v) چې اوښان ساتي نو دروازي دنګي ساته -

سوال نمبر 4: پښتانه ارین دي که بني اسرائيل؟ په دلیل سره پرې بحث اوکړئ -

سوال نمبر 5: د خوشحال خان خټک په رزمیه شاعری مدلل لیک اوکړئ -

سوال نمبر 6: د حمید بابا په شاعری کښي د سوز او گداز خصوصیات د هغه د نازک خیالی په ژبه څرگند کړئ -

سوال نمبر 7: د پښتو په جدید شاعرانو کښي د غني خان په ژوند او شاعری کوتلے لیک اوکړئ -

سوال نمبر 8: فولکلور څه ته وائي؟ پښتو فولکلور کښي تپه د پښتنو د ژوند ائینه ده - تاسو دي سره څومره متفق یی، مثالونو سره نی واضح کړئ -



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SINDHI

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II . ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART-II

- (20) سوال نمبر 2: سنڌي زبان جي قدامت متعلق پيش ڪيل نظرين مان اوهان جنهن به نظريي جا طرفدار آهيو، ان کي دليلن سان واضح ڪريو؟
- (20) سوال نمبر 3: سنڌي لکاوٽ جي تاريخ تي نئين صدي ۾ جيڪا تحقيق ٿي آهي، ان جي نتيجن کي اوهين سٺي اسلوب سان نروار ڪريو؟
- (20) سوال نمبر 4: شيخ اياز جي شاعري پنهنجي زبان ۽ بي ساخته اسلوب سبب عام جي ته آهي، پر فهم جي لحاظ کان مٿاڇري مت کان به مٿي آهي، ان راءِ کي کولي پرپور ادبي بحث سان نتيجا ظاهر ڪريو.
- (20) سوال نمبر 5: انگريزن جي دور ۾ سنڌي ٻولي ۽ ادب جي ترقي ۽ اشاعت لاءِ حڪومت ڪهڙا اپاءَ اختيار ڪيا؟
- (20) سوال نمبر 6: آغا سليم کي افسانوي اديب جي حيثيت سان ته ناماچار حاصل هو، پر لطيف شناسي لاءِ سندس ڪيل ڪوششون ڪيتري قدر قابل تعريف چئي سگهجن ٿيون، مثال ڏيئي سمجهايو.
- (20) سوال نمبر 7: ڪن به ٻن عالمن جي ادبي خدمتن تي تفصيلي روشني وجهو.
1. ڊاڪٽر عمر بن محمد دائودپوٽو 2. عثمان علي انصاري 3. ڊاڪٽر الهداد پوهيو 4. ڊاڪٽر عبدالجبار جوڻيجو
- (20) سوال نمبر 8: هيٺ ڏنل سنڌي فقري جو انگريزي ۾ ترجمو ڪريو؟
- ٻولي ڪنهن به قوم کي سمجهڻ جي ڪنجي آهي. سنڌي ٻولي خصوصي انداز ۾ سنڌ جي تهذيب ۽ تمدن جي خوبصورت انداز ۾ ترجماني ڪري ٿي. هڪ صلح پسند، محنتي، زراعتي پيشي سان وابسته ثقافت کي ظاهر ڪري ٿي. سنڌ جي زرعي زمين تي حڪمرانن جي نظر هئي. زمين حاصل ڪرڻ لاءِ هر قسم جا حربا ۽ جواز پيش ڪري انهن تي قابض ٿيا.
- (20) سوال نمبر 9: هيٺ ڏنل انگريزي پيراگراف جو سنڌي ۾ ترجمو ڪريو؟
- Sindhi has absorbed a considerable amount of Arabic and Persian words which have either been Sindhized in form or they have become an integral part of the Usage in their original Form. Beside this kind of vocabulary, a very large number of Arabic and Persian words have been borrowed and used particularly by men of letters and poets during the last 150 years. Since these words and idioms have become a part of the published literature and are being increasingly used now under the influence of Urdu, they have been included in this lexicon to make it serviceable to all.



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Roll Number

SOCIOLOGY

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

- Q. No. 2.** Differentiate between Ethnocentrism and Xenocentrism with examples. Which one and how is important in damaging the peace and development situation in Karachi? Discuss with logic and evidence on the Issue. **(20)**
- Q. No. 3.** Make a comparative and analytical discussion on the Social Contract Theory and the Organismic Theory while developing your thesis with a logical conclusion. **(20)**
- Q. No. 4.** How do you see the future of Pakistani society resulting from the effect of Industrialization, Modernization, Urbanization and Modern means of communication upon social change processes? Discuss with examples. **(20)**
- Q. No. 5.** How do you see the future of major cities in Pakistan? Discussing by focusing on the issues of water and foods security and the situation of terrorism and extremism with examples and data. **(20)**
- Q. No. 6.** Discuss the structure and functions of Pakistani family with examples, keeping in view the changes occurring. How do you see the future of Pakistani Family System? Make a research based argument. **(20)**
- Q. No. 7.** Ibn-e-Khaldun but not August Comte is the founder of Sociology? Make your argument in favour or against this thought with logic and examples from the historical development of sociology. **(20)**
- Q. No. 8.** Write short notes on the following: **(10 each) (20)**
- (i) Research process in sociology
 - (ii) Deviance and street crime in Pakistan



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Roll Number

STATISTICS

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

NOTE: (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II** by selecting **TWO** questions from **EACH SECTION**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.
(vii) **Use of Calculator is allowed.**
(viii) **Use of statistical table is allowed.**

PART-II
SECTION – A

- Q. 2. (a)** The mean and standard deviation of a sample of 20 observations were found to be 75 and 2.5 respectively. On checking the original figures, it was discovered that one observation which was actually 68, was copied down as 86. Find the correct mean and standard deviation. (5)
- (b)** Given below is the distribution of monthly income (to the nearest rupee) of 100 employees working in each of two banks A and B. Compare the variations in salaries of employees by calculating coefficient of variation in each case? (9)
- | | | | | | | |
|----------------|---------|---------|---------|---------|----------|-----------|
| Income Rs. 000 | 35 – 49 | 50 – 64 | 65 – 79 | 80 – 94 | 95 – 109 | 110 – 124 |
| f_A | 10 | 15 | 35 | 20 | 10 | 10 |
| f_B | 15 | 20 | 40 | 15 | 7 | 3 |
- (c)** What can you say of the skewness in each of the following cases? (6) (20)
- (i) Mean = Rs. 39000 and Mode = Rs. 45000
(ii) The median is 79.39, which the two quartiles are 50.25 and 95.00.
(iii) Mean = Rs. 39000 and Median = Rs. 38500
- Q. 3. (a)** A box contains 12 red and 20 white rose flowers. Flowers are picked up at random one by one without replacement. What is the probability that: (6)
- (i) The third one is red given that the first 2 are white?
(ii) There are 3 red and 2 white flowers in the first five picked up?
- (b)** Two hundred and fifty passengers have made reservations for an airplane flight. If the probability that a passenger who has a reservation will not show up is 0.005, what is the probability that exactly five will not show up? (8)
- (c)** A soft drink machine is regulated so that it discharges an average of 250 milliliters per glass. If the amount of drink is normally distributed with a standard deviation equal to 15 millimeters, then: (6) (20)
- (i) What fraction of the glasses will contain more than 280 milliliters?
(ii) What is the probability that a glass contains between 240 milliliters to 260 milliliters.
- Q. 4. (a)** What is a multiple regression? Explain the basic differences between simple regression and multiple regression. (5)
- (b)** Differentiate between multiple correlation and partial correlation. (5)
- (c)** Find the coefficient of correlation between persons employed and cloth manufactured in a textile mill. Interpret the result (10) (20)

Persons employed	139	219	140	213	180	215	249	280
Cloth Manufactured (000 meters)	28	55	26	49	42	54	51	60

- Q. 5. (a)** What is meant by an experimental design? Describe in brief the basic principles of experimental designs. (8)
- (b)** A consumer agency wanted to find out if the mean time it takes for each of three brands of medicines to provide relief from a headache is the same. The 1st drug was administered to six randomly selected patients, the 2nd to four randomly selected patients and the 3rd to five randomly selected patients. The following table gives the time (in minutes) taken by each patient to get relief from a headache after taking the medicine. (12) (20)

Drug 1	Drug 2	Drug 3
25	15	44
38	21	39
42	19	54
65	25	58
47		73
52		

At 5% significance level, will you conclude that mean time taken to provide relief from a headache is the same for each of the three drugs?

- Q. 6. (a)** The management of a super market wanted to investigate if the percentages of men and women who prefer to buy local brand products over the imported products are different. A sample of 900 men shoppers at the company’s super markets showed 400 of them prefer to buy local brand products over imported brand. Another sample of 1200 women shoppers showed that 420 of them prefer to buy local brand products over the imported brand. (6)
- (i) Construct a 99% confidence interval for the difference between the two proportions.
- (ii) At 5% significance level, can you conclude that the difference between all male customers at this market is less than that by all female customers?
- (b)** An auto manufacturing company wants to estimate the variance of kilometers per litre for its one of the auto model. A random sample of 25 cars of this model showed that the variance of kilometres per litre for all such cars are approximately normal. Test at the 5% significance level whether the sample result indicates that the population variance is different from 1.05. (7)
- (c)** A researcher wanted to study the relationship between gender and owning expensive cell phones. A sample of 1000 young people were taken and information given are in the following table. (7) (20)

Status cell phones	Male	Female	Total
Own	300	400	700
Do not own	200	100	300
Total	500	500	1000

At the 5% level of significance, can we conclude that gender and owning an expensive cell phone are related for all young people?

- Q. 7. (a)** Define and distinguish between: (6)
- (i) Target and Sampled Populations
- (ii) Simple Random Sampling and Stratified Random Sampling
- (iii) Sample Distribution and Sampling Distribution
- (b)** Explain with examples the properties of a good point estimator. (6)
- (c)** The heights of a large number of shrubs of the same kind produced for sale by a horticultural nursery are normally distributed with mean 1.14 m and standard deviation 0.25 m. Fifty samples, each consisting of 100 shrubs are selected. In how many of these samples would you expect to have the mean sample being to be (i) greater than 1.16 m; (ii) between 1.13 m and 1.18 m? (8) (20)
- Q. 8. (a)** What are the various statistical organizations in Pakistan? Discuss the main functions of Statistics Division and NADRA. (10)
- (b)** Calculate age-specific fertility rates, total fertility rate, gross-reproduction rate and net reproduction rate from the following data, assuming sex-ratio at birth to be 106.18 per cent (10) (20)

Age-group (years)	Female Population (000)	Registered Births	Probability of Survival
15 – 19	1,424	27,639	0.9645
20 – 24	1,531	226,817	0.9607
25 – 29	1,653	280,506	0.9554
30 – 34	1,658	194,526	0.9489
35 – 39	1,741	113,966	0.9416
40 – 44	1,669	32,363	0.9324
45 – 49	1,561	2,215	0.9201



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Roll Number

TOWN PLANNING & URBAN MANAGEMENT

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

- NOTE:** (i) **Part-II** is to be attempted on the separate **Answer Book**.
(ii) Attempt **ONLY FOUR** questions from **PART-II**. **ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART-II

- Q. No. 2.** As a town planner, suppose you have been assigned a project lead position to prepare a master plan of a metropolitan city. Develop your project team by explaining which other professionals will be engaged by you. Also discuss, which services will be provided by them for the successful completion of the assignment? **(20)**
- Q. No. 3.** Explain the general urban form characteristics of historical European cities. Also, discuss whether these characteristics offer any advantage in pursuing the goals of sustainable development? **(20)**
- Q. No. 4.** Differentiate 'urbanization' from 'urban sprawl'. Are large Pakistani cities facing both of these processes simultaneously? Discuss. Support your viewpoint with examples. **(20)**
- Q. No. 5.** Discuss different ways and approaches to reduce the housing cost for the low income people in order to promote equitable development. **(20)**
- Q. No. 6.** Can socio-environmental problems of urban areas be addressed through urban design guidelines? While discussing, provide relevant examples and illustrations, where possible. **(20)**
- Q. No. 7.** Which various factors are responsible for growing intense competition among different stakeholders over the use of natural resources? Also, suggest different measures to resolve the conflicts arising from such intense competition. **(20)**
- Q. No. 8.** Write short note on any **TWO** of the following: **(10 each) (20)**
- (a) Significance of GIS application in urban planning
 - (b) Role of building and development control in managing urbanization
 - (c) Planning features of Indus Valley Civilization

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Roll Number

URDU LITERATURE

TIME ALLOWED: THREE HOURS

PART-I (MCQs)

MAXIMUM MARKS = 20

PART-I(MCQs): MAXIMUM 30 MINUTES

PART-II

MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate Answer Book.

(ii) Attempt ALL questions.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q. Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

PART- II

(15) سوال نمبر 2 (الف) درج ذیل میں سے کسی ایک جزو کی تشریح کیجیے اور شاعر کا نام بھی لکھیے۔

جزو اول (۱) آگہی دام شنیدن جس قدر چاہے بچھائے
عشرت قطرہ ہے دریا میں فنا ہو جانا
مدعا عتقا ہے اپنے عالم تقریر کا
درد کا حد سے گزرتا ہے دوا ہو جانا
(۲)
(۳) عاشقی صبر طلب اور تمنا ہے تاب
ایمان مجھے روکے ہے، جو کھینچے ہے مجھے کفر!
دل کا کیا رنگ کروں خون جگر ہونے تک
کعب مرے پیچھے ہے، کلیہ سامرے آگے
(۴)
(۵) مل ہی جائے گا رفتگاں کا سراغ
اور کچھ دن پھر واداس اُداس

جزو دوم
خودی میں ڈوب جانا نخل! یہ سز زندگی ہے
نکل کر حلقہ شام و سحر سے جاوداں ہو جا
مصاف زندگی میں سیرت فولاد پیدا کر
شبستان محبت میں حریر و پرنیاں ہو جا
گزر جا بن کے سیل بند زکوہ و بیاباں سے
گلستان راہ میں آئے تو جوئے نغمہ خواں ہو جا
ترے علم و محبت کی نہیں ہے انتہا کوئی
نہیں ہے تجھ سے بڑھ کر ساز فطرت میں نوا کوئی

(10) (ب) مندرجہ ذیل میں سے کوئی ایک سوال کا جواب دیجیے۔

”شب رفتہ“ کے حوالے سے مجید امجد کی نظم نگاری کی فکری اور محسوساتی جہتوں کا احاطہ کیجیے۔

یا
فیض نے اردو کی کلاسیکی شاعری کی اعلیٰ روایات اور اظہار کے سانچوں میں جدید موضوعات اور نئی حسیات کو داخل کیا۔ تفصیلی بحث کیجیے۔

(15) سوال نمبر 3 (الف): سیرت النبی ایک ادبی شاہکار ہے۔ اس کا مقدمہ میں علامہ شبلی نے سیرت کے لیے جن اصولوں کا ذکر کیا ہے، وہ کیا ہیں اور ان پر شبلی کی یہ کتاب کہاں تک پورا اترتی ہے؟

یا
مشتاق احمد یوسفی نے کن کن وسیلوں سے مزاح پیدا کیا ہے؟ ”آب گم“ کی روشنی میں تفصیل سے بیان کیجیے۔

(10) (ب) مندرجہ ذیل اقتباسات میں سے کسی ایک کی تشریح کیجیے نیز مضمون کا عنوان اور مصنف کا نام بھی لکھیے۔

”تہا آدمی کی سوچ اُس کی انگلی پکڑ کے کشاں کشاں ہر چھوڑی ہوئی شاہراہ، ایک ایک پگڈنڈی، گلی کو پے اور چوراہے پر لے جاتی ہے۔ جہاں جہاں راستے بدلے تھے، اب وہاں کھڑے ہو کر انسان پر منکشف ہوتا ہے کہ درحقیقت راستے نہیں بدلتے، انسان خود بدل جاتا ہے۔ سڑک کہیں نہیں جاتی۔ وہ تو وہیں کی وہیں رہتی ہیں۔ مسافر کہاں سے کہاں پہنچ جاتا ہے۔ راہ کبھی گم نہیں ہوتی۔ راہ والے گم ہو جاتے ہیں۔“

یا
”اسے پہلی بار یاد آیا کہ وہ تو خانی ہاتھ لاہور جا رہی تھی۔ وہ تو اپنی کمائی گھر ہی میں بھول آئی تھی۔ اُس کا کفن تو وہیں بکے میں رکھا رہ گیا تھا۔ زندگی سے اتنی محبت بھی کیا کہ انسان اسے بچانے کے لیے بھاگے تو اپنا کفن ہی بھول جائے۔ اور یہ کفن اُس نے کتنی مشقت سے تیار کیا تھا۔ اور اس پر کتنے چاؤ سے کلمہ شہادت لکھوایا تھا خاک پاک سے۔ اچھے کفن اور اچھے جنازے ہی کے لیے تو وہ اب تک زندہ تھی۔“

کسی ایک نثر پارے کی تلخیص کیجیے۔

(10)

(۱) ”شاعری کیا ہے؟ قریب قریب ایک ویسای سوال ہے جیسا کہ یہ سوال کہ شاعر کیا ہے؟ ایک کا جواب دوسرے کا جواب ہے۔ کیوں کہ یہ ایک ایسا فرق ہے جو خود شاعرانہ فطرت کا نتیجہ ہے۔ شاعرانہ فطرت خود شاعر کے ذہن کے خیالات، جذبات اور تشالوں کو سہارا دیتی ہے اور انہیں تبدیل کرتی رہتی ہے۔ شاعر، اپنے عالم کمال میں، انسان کی ساری روح کو حرکت میں لے آتا ہے۔ انسان کی ساری صلاحیتوں کو، ان کی اضافی قدر و قیمت اور منصب ورتہ کے مطابق ایک دوسرے کے ماتحت لے آتا ہے۔ وہ ہم آہنگی اور اتحاد کی روح پیدا کرتا ہے جو ایک دوسرے سے پیوستہ اور ایک جان کر دیتی ہے۔ یہ عمل وہ اس امتزاجی اور جادو بھری قوت کے ذریعے کرتا ہے جس کو تخیل کا نام دیا جاتا ہے۔ یہ قوت پہلے ارادہ اور تقنیم کے ذریعے عمل میں آتی ہے اور پھر ان کے ناگزیر اور اہل کنٹرول — حالانکہ یہ کنٹرول بہت دھیمہ اور چھپا ہوا ہوتا ہے — کے ذریعے متنقذ یا بے ربط صفات کے درمیان توازن اور مفاہمت پیدا کر کے خود کو ظاہر کرتی ہے۔“

یا

(۲) ” آدمی کسی نہ کسی معاشرے میں زندگی بسر کرتا ہے اور کوئی بھی معاشرہ ایسا نہیں ہے جس پر ایک خول روایات کہن کا چڑھا ہوا نہ ہو۔ جس میں زندگی بسر کرنے، ایشیا بنانے، پیدا کرنے اور ذہنی تخلیقات کو وجود میں لانے کی کوئی روایت، کمزور یا مضبوط نہ ہو، اس کا کوئی تاریخی چلن نہ ہو۔ چنانچہ اس روایت یا تاریخی چلن کو گزرنے والی نسل، نئی نسل اور آنے والی نسل کو منتقل کرتی رہتی ہے خواہ اس منتقلی کا طریق کار زبانی ہو یا عملی مظاہرے کا ہو، یہ بات بہت سانسے کی ہے کہ ہر فن یا ہنر کی ایک روایت ہوتی ہے اور جب کسی معاشرے میں کسی فن یا ہنر کی روایت نہیں ہوتی ہے اور وہ فن یا ہنر بقائے حیات اور تکمیل حیات کے لیے ضروری ہوتا ہے تو اسے دوسرے معاشروں سے قرض لیتے ہیں اور اپنے معاشرے کی نفسی کیفیت کے مطابق اس کو پروان چڑھانے کی کوشش کرتے ہیں۔ اس کی متعدد مثالیں دی جاسکتی ہیں۔ اس کے یہ معنی ہوئے کہ لین دین کا عمل، مختلف تہذیبوں اور معاشروں کے درمیان، روایات اور رسم و رواج کی دنیا میں بھی ہوتا ہے۔ چنانچہ کسی بھی روایت کے بارے میں یہ کہنا کہ اس کی نظیر کسی دوسرے معاشرے میں نہیں ملتی ہے، بہت مشکل ہے۔“

(20)

سوال نمبر 5: کسی ایک موضوع پر مضمون تحریر کیجیے۔

- (۱) وجودیت کے فلسفیانہ نظریات اور ادب پر اس کے اثرات کا جائزہ لیجیے۔
- (۲) پاکستانی ادب کیا ہے؟ اس کی تشکیل و روایت اور ارتقائی سفر پر تفصیل سے روشنی ڈالیے۔
- (۳) اردو نظم کے جدید رجحانات نے ہمیں کس تجربے سے اور فکر کی کن صورتوں سے آشنا کیا ہے؟ وضاحت کریں۔



**FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION-2018
FOR RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT**

Roll Number

ZOOLOGY

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80
NOTE: (i) Part-II is to be attempted on the separate Answer Book.		
(ii) Attempt ONLY FOUR questions from PART-II. ALL questions carry EQUAL marks.		
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.		
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.		
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.		
(vi) Extra attempt of any question or any part of the attempted question will not be considered.		

PART – II

- Q. No. 2.** Discuss in detail how do the marine and terrestrial animals meet the problems of salt and water balance? (20)
- Q. No. 3.** Differentiate between endocrine and exocrine glands. Through how many kinds of receptors do the hormones act and how is the secretion rate controlled? (20)
- Q. No. 4.** Arthropod exoskeleton is the most complex of invertebrate integuments. Describe its structure and explain the difference in the way the cuticle is hardened in Crustaceans and in insects. (20)
- Q. No. 5.** Members of such a large and diverse phylum as mollusca impact humans in many ways. Discuss. Also name classes of the phylum with two differential characters for each. (20)
- Q. No. 6.** (a) Discuss parasitic adaptation and medical importance with respect to nematodes. (20)
(b) Write note on structural and functional adaptation in mammals.
- Q. No. 7.** Metamerism profoundly influences virtually every aspect of annelid structure and function, such as the anatomical arrangement of organs that are coincidentally with Metamerism. Discuss through logical reasoning. (20)
- Q. No. 8.** Write short notes on any **FOUR** of the following: (05 each) (20)
- (a) Gas exchange in reptiles
 - (b) Carbohydrates: Nature's Most Abundant Organic Substance
 - (c) Mendel's Law of inheritance
 - (d) Food chain
 - (e) Social Behaviour and its impact on individuals
 - (f) Composition of blood
