UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – spring 2025

Roll No. ....

Paper: Introduction to Psychology (Revised)
Course Code: APSY-111-A

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(6x5=30)**

i. Draw and label a Neuron.

ii. Explain the processes of Memory.

iii. Briefly describe Spearman's Two Factor theory of intelligence.

iv. What is the difference between S- factor and G- factor of intelligence?

v. Explain the binocular cues used in Depth perception.

vi. Write a note on Structuralism.

Q.2.   Answer the following questions: **(3x10=30)**

i. Define Learning and explain the principles of Classical Conditioning.

ii. Define Memory. Discuss in detail the different types of memory.

iii. Explain Thurston's seven factor theory of Intelligence.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions: (6x5=30)

1. Discuss any two types of counseling

2. Differentiate manifest and latent content in dream analysis.

3. Define consciousness and sub consciousness.

4. What is eye witness testimony in forensic psychology?

5. What is the difference between internal and external locus of control?

6. Discuss the role of developmental psychologist

Q.2. Answer the following questions.   (3x10=30)

1. Explain any two models of mental health.

2. What is the aim and scope of school psychology in Pakistan?

3. Discuss Erik Erickson theory in detail.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

سوال نمبرا: مندرجہ ذیل سوالات کے مختصر جوابات دیجیے۔ (6x5=30)

۱۔ اسم اشارہ کی تعریف کریں نیز اسم اشارہ قریب اور بعید میں فرق مثالوں سے واضح کریں۔

۲۔ اسمائے موصولہ سے کیا مراد ہے، مثالوں کے ساتھ وضاحت کریں۔

۳۔ اسم معرفہ کی تعریف کریں نیز اس کی اقسام کی تحریر کریں۔

۴۔ اسماء اور علاماتِ تانیث کون سی ہیں؟ مثالوں کے ساتھ واضح کریں۔

۵۔ ضمیر متصل اور ضمیر منفصل سے کیا مراد ہے؟

۶۔ مشار اور مشار الیہ سے کیا مراد ہے؟ نیز مثالوں کے ساتھ وضاحت کریں۔

سوال نمبر۲: مندرجہ ذیل سوالات کے تفصیلی جوابات تحریر کریں۔ (3x10=30)

(1) درج ذیل عبارت کا اردو ترجمہ کریں۔ (۱۰)

وكانُوا يعرفُون أن هذه تماثيلُ للصّالحين وأن هذه حجارةٌ لا تنفعهُم ولا تَضُرّهم ولا تَرزُقُهم ولكنّهم كانوا يتركون بها ويعظّموُنها، لأنّها تماثيل للصّالحين وكثرت هذه التماثيل فيهم" وكثر تعظيمها. وإذا مات فيهم رجلٌ صالحٌ عملوا له تمثالاً وسمّوه باسمه.

(2) درج ذیل جملوں کا عربی میں ترجمہ کریں (۱۰)

۱۔ یہ پھول زرد ہے۔

۲۔ کیا تمہارے پاس آری ہے۔

۳۔ وہ لوگ بہرے گونگے اندھے ہیں۔

۴۔ بہترین کتاب قرآن مجید ہے۔

۵۔ انہوں نے اپنے مہمان کی عزت کی۔

(۳) درج ذیل جملوں پر اعراب لگائیں۔ 5x2=10

1- ماذا تفعل هناك؟

2- الطفل شرب لبنا.

3- قتل داؤد جالوت.

4- المعلمات في المدرسة.

5- من كان الضيف.

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – spring 2025

Roll No. ....

Paper: Introduction to Business Administration
Course Code: BADMIN-111

Time: 3 Hrs. Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.No.1.   Answer the following short questions.   (6x5=30)

I.   What is the impact of business on the economy of a country. How can businesses contribute to economic growth?

II. Compare proprietorship and partnership as forms of business organization with advantages and disadvantages.

III. Explain the concept of finance? Write down the different sources of financing.

IV. Briefly explain the documents required for registration of a company.

V.   How can businesses protect themselves from financial risks?

VI. Explain the components of Marketing Mix.

Answer the following questions.   (3x10=30)

Q.No.2: Discuss the channels of distribution for consumer goods and organizational goods. Explain the importance of marketing communication and promotion.

Q.No.3: Explain the importance of personnel management in business. Describe the functions of an employment division and the importance of training programs.

Q.No.4: Explain the concept of international business and its importance. Discuss the role of foreign trade in economic development.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.No.1:   Answer the following short questions: **(6x5=30)**

I.   List the four functions of management.

II.   Performance appraisal critical in the staffing process.

III. Enlist the types of Strategies

IV.   Name two contributions of the classical approach to management.

V.   "Delegation of authority"

VI.   Performance standards" in the context of controlling.

Answer the following questions: **(3x10=30)**

Q.No.2: Discuss the importance of managerial decision-making and the challenges faced in effective decision-making.

Q.No.3: Compare and contrast different leadership styles (autocratic, democratic, laissez-faire).

Q.No.4: Discuss the challenges in staffing for modern organizations, such as globalization and technological advancements.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Qusetin.No.01.   Answer the following short questions: (10x3=30)

i. Enlist the name key activities shown in a cash flow statement?
ii. How does an increase in liabilities affect the accounting equation?
iii. What is the rule of debit and credit for assets?
iv. How does an adjusting entry for accrued revenue differ from deferred revenue?
v. If the current ratio is less than 1, what does it indicate?
vi. Explain the "Statement of Financial Position".
vii. What is the significance of the asset turnover ratio?
viii. Differentiate between accrual and cash basis of accounting.
ix. What is a matching principle?
x. Enlist the financial statements?

Answer the following questions: (3x10=30)

Question No. 02

Mr. Pasha started his business on May 1, 2024. He completed the following transactions during his first month of operations:

May 01	Started business with Rs. 200,000 cash.
May 01	Deposited Rs. 100,000 into bank account.
May 02	Purchased goods of Rs. 17,500 on credit from BILAL.
May 03	Bought fixtures and fittings Rs. 15,000 paying by cheque.
May 05	Sold goods for cash Rs. 27,500.
May 06	Bought goods of Rs. 11,400 on credit from HUSSAIN.
May 10	Paid rent in cash Rs. 15,000.
May 18	Goods returned to BILAL Rs. 2,200.
May 21	Let off part of the premises receiving rent by cheque Rs. 5,000.
May 31	The proprietor took cash for himself Rs. 4,400.

Required: Record the above transactions in General Journal, post them into ledger and prepare trial Balance.

Question No. 03

The trial balance of Sajid Associate at October 31, 2024, is as follows.

Account Title	Debit (Rs.)	Credit (Rs.)
Cash	46,400	
Accounts Receivable	48,800	
Supplies	37,600	
Accounts Payable		22,400
Unearned Revenue		4,700
Aslam's Capital		72,000
Service Revenue		47,100
Salaries Expense	11,200	
Miscellaneous Expense	2,200	
Total	**146,200**	**146,200**

Adjustment data:

1. Supplies on hand, Rs. 18,000.
2. Unearned revenue at month-end is Rs. 2,200.
3. Accrued salaries are Rs. 5,700.

Required:

Prepare an Income Statement, Statement of Owner's equity and Balance sheet at October 31, 2024.

Question No. 04

The financial data for two companies, A Ltd. and B Ltd., for 2023 is as follows:

A Ltd.		B Ltd.	
Current Assets	Rs. 450,000	Current Assets	Rs. 550,000
Current Liabilities	Rs. 300,000	Current Liabilities	Rs. 400,000
Net Sales	Rs. 900,000	Net Sales	Rs. 1,000,000
Total Assets	Rs. 1,200,000	Total Assets	Rs. 1,400,000
Equity	Rs. 700,000	Equity	Rs. 800,000
Net Income	Rs. 180,000	Net Income	Rs. 150,000

Required: You are required to calculate and compare below mentioned ratios for both companies and provide a brief analysis of their liquidity, profitability, and efficiency.

1. Current Ratio
2. Debt-to-Equity Ratio
3. Net Profit Margin
4. Return on Equity (ROE)
5. Asset Turnover Ratio

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions   (6x5=30)

i   Describe knowing the world in the field of psychology.
ii Define Cognitive Learning.
iii Describe behavior therapy.
iv Define primary Motive.
v   Explain communication and persuasion.
vi Define observation with Example.

Q.2.   Answer the following questions   (3x10=30)

i.   Define Emotion, Explain its theories in detail.

ii. Define Frustration, Explain in detail Reaction to Frustration.

iii. Explain in detail Freud's theory of psychoanalysis.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (6x5=30)

I. What are genes? How do they differ from alleles?
II. Briefly describe about algal diversity.
III. Describe chemical basis of animal life.
IV. How do viruses reproduce?
V. Enlist and describe the latest trends in genetic engineering.
VI. Briefly describe principles of inheritance.

Q.2.   Answer the following questions: (3x10=30)

I. Describe in detail the observable inheritance patters.
II. How do animals acquire energy? Describe in detail.
III. Give structure and functions of DNA.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (6x5=30)

I.   Differentiate between mitosis and meiosis?

II.   How does thymine differ from thymidine? Explain with the help of chemical structure.

III.   What are restriction endonucleases? Describe their role in genetic engineering?

IV.   What are vertebrates? How do vertebrates differ from invertebrates?

V.   What is energy metabolism? Briefly describe Net ATP production from complete oxidation of one molecule of glucose?

VI.   Differentiate between prokaryotic and eukaryotic cells?

Q.2.   Answer the following questions.   (3x10=30)

i.   Describe prophase-1 of meiosis with the help of label diagram?

ii.   What is RNA? Describe structure and functions of various types of RNAs?

iii.   Write a note on the following

A: Chromosomes   B: Bacteria

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – Spring 2025

Roll No. ....

Paper: Plant Taxonomy, Anatomy and Development
Course Code: BOT-103A

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(15x2=30)**

1. Define Plant systematics. Give the aims and objectives of plant classification?
2. Why scientific names are more useful than common names?
3. Define simple tissue? Which type of simple tissue is called as dead tissue?
4. Write importance of phylogenetic analysis.
5. What do you mean by endosperm formation?
6. Define inflorescence? Give examples of its different types
7. Write the botanical names of five members of family Rosaceae?
8. Differentiate between epidermal appendages and stomata?
9. How does Brassicaceae family contribute to agriculture?
10. What is the importance of etymology in nomenclature?
11. What are the function of vascular cambium in plant growth and development?
12. Mention the main characteristics of monocot plants?
13. Discuss the uses of *Capsella bursa-pastoris* L.?
14. What are the similarities between periderm and epidermis?
15. Draw neat and clean labelled diagram of internal structure of Dicot root?

Q.2.   Answer the following questions: **(3x10=30)**

1. Write down detail note on structure of ovule of *Capsella bursa-pastoris*? Draw neat and clean labelled diagram of it?
2. Define typification? Write down different forms of nomenclatural types.
3. What are simple tissues? Discuss their types in detail with the help of diagrams.

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – Spring 2025

Paper: Botany-II (Plant Systematic Anatomy & Development Theory)
Course Code: BOT-103

Roll No. ....

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (15x2=30)

1. Define Plant taxonomy. Write its significance.
2. Why scientific names are more useful than common names?
3. Briefly describe endosperm formation in *Capsella bursa-pastoris* L.?
4. Define meristematic tissue. Differentiate intercalary and apical meristem.
5. What is megasporogenesis?
6. How secondary growth takes place in plants?
7. Draw neat and clean labelled diagram of internal structure of stem
8. What is the difference between parenchyma and collenchyma?
9. What type of simple tissues are found in plants?
10. What is the economic importance of family Liliaceae?
11. Differentiate between apocarpous and syncarpous condition?
12. Write the characteristic features of Night shade family?
13. What are the epidermal appendages in cell wall of plants?
14. Differentiate between monocot and dicot leaf?
15. From which group of plants *Capsella bursa-pastoris* L. belongs to?

Q.2.   Answer the following questions: (3x10=30)

1. Discuss in detail about artificial or sexual system of classification?
2. Write salient features of family Solanaceae along with floral formula and floral diagram? Also give its economic importance
3. Discuss development of microgametophyte and megagametophyte in *Capsella bursa-pastoris* L.?

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – Spring 2025

Paper: Plant Taxonomy, Anatomy and Development
Course Code: BOT-109

Roll No. ....

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (15x2=30)

1. Define taxonomy? what are the main taxonomic ranks used in hierarchial classification?
2. What type of sexual reproduction exhibit in *Capsella bursa-pastoris* L.?
3. Differentiate between microsporogenesis and megasporogenesis.
4. What is the role of pericarp in protecting the seed?
5. What are the characteristics of parenchyma tissue?
6. Compare phloem of gymnosperms and angiosperms?
7. How Fabaceae differs from Brassicaceae?
8. Differentiate between Habit and Habitat?
9. What are the components of plant cell wall?
10. What is the role of Latin in scientific nomenclature?
11. What is the vascular cambium? Where is it located in plants and also write its function?
12. What are the main characteristics of dicot plants?
13. What is the common name of *Capsella bursa-pastoris* L.?
14. What is the difference between periderm and epidermis in plants?
15. Draw neat and clean labelled diagram of internal structure of monocot leaf?

Q.2.   Answer the following questions: (3x10=30)

1. Define placentation? Discuss different types of placentation in plants with diagrams.
2. Define inflorescence? Explain the different types of infloresences with diagrams.
3. Discuss the development of mega-gametophyte in *Capsella bursa-pastoris* L. with the help of suitable diagrams.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions: (15x2=30)

1. Define plant systematics? Why plant sytematics is important to study biodiversity?
2. How does solanaceae family contribute to agriculture?
3. Why Latin is important in scientific nomenclature?
4. How does *Capsella bursa-pastoris* L. reproduce?
5. What are the characteristics of parenchyma tissue?
6. Compare phloem of gymnosperms and angiosperms?
7. What is microsporogenesis? How it plays role in plant reproduction?
8. What are the characteristics of collenchyma tissue?
9. Compare xylem of gymnosperms with angiosperms?
10. Write the names of 10 families of dicot.
11. What are stomata? How stomata of monocot are different from Dicot?
12. Why only dicot stems grow in diameter while monocots do not?
13. What is the common name of *Capsella bursa-pastoris* L.?
14. What is the difference between periderm and epidermis in plants?
15. Draw neat and clean labelled diagram of internal structure of monocot root?

Q.2. Answer the following questions: (3x10=30)

1. Define classification? What is the role of Bentham and Hooker in plant classification?
2. Write salient features of family Rosaceae along with floral formula and floral diagram? Also give its economic importance. Discuss one member of this family along with floral formula and floral diagram?
3. Discuss development in *Capsella bursa-pastoris* alongwith Micro-megasporogenesis, and Micro-megagametophyte?

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – Spring 2025

Paper: Arts & Humanities - II Study of Arabic Language
Course Code: BSAR-102

Roll No. ....

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

سوال نمبر1   نیچے دیے گئے اجزاء کے مختصر جوابات لکھیے۔   (6x5=30)

(1) اذكر/اذكري حروف العلّة، وحروف المدّة في اللغة العربية . (عربی زبان کے حروف علت اور حروف مدہ لکھیں)۔

(2) ما هي علامة التنكير، وحرف التعريف، هات مثالًا (نکرہ کی علامت اور حرف تعریف ذکر کریں اور مثال دیں)۔

(3) اكتب/اكتبي عن المركب الإشاري مع ذكر إشارة القريب. (مرکب اشاری کی تعریف کریں اور اسماء اشارہ قریب لکھیں)

(4) عرفوا الفعل مع التوضيح بذكر المثال.   (فعل کی تعریف کریں اور مثال سے اس کی وضاحت کریں)

(5) اكتبوا أسماء خمس دول عربية من قارّة أفريقيا مع ذكر العواصم. (براعظم افریقہ کے پانچ عرب ممالک اور ان کے دار الخلافہ کے لکھیں)

(6) اكتب/ اكتبي حروف الاستفهام مع الأمثلة في الجملة المفيدة (حروف استفہام لکھیں اور مفید جملوں میں استعمال کریں)

ذیل کے سوالات کے مطلوبہ جوابات لکھیے۔   (3x10=30)

سوال نمبر2   ترجم/ ترجمي العبارة الآتية إلى اللغة الأردية أو الإنجليزية. واستخرج من العبارة الأمور التالية: 1: فعلًا ماضيًا ،2: مركّبا توصيفيًا 3: حرف جرّ. 4. ضميرا مجرورًا ،5: مركّبا إضافيًا (درج ذیل عبارت کا اردو یا انگلش میں ترجمہ کریں، اور عبارت سے درج ذیل اشیاء نکالیں 1: فعل ماضی،2: حرف جر،3: مرکب توصیفی،4. ضمیر مجرور،5: مرکب اضافی)۔

" وفي اليوم الثالثِ جاءَ الشيطانُ بالمئة الثانيةِ، فاشترى الشابُّ ثيابًا لنفسِه وأبّه، ومرّت الأيّامُ وكثرت الروبياتُ، ونسِي الشيطانُ الشجرةَ، وانشغل باللذاتِ".

سوال نمبر3   ترجم/ترجمي الحديث الشريف إلى اللغة الأردية أو الإنجليزية. (درج ذیل حدیث شریف کا اردو یا انگلش میں ترجمہ کریں)۔

قال رسول الله ﷺ:لا يدخلُ الجنّةَ من كان في قلبه مثقالُ حبّةٍ من كبرٍ، فقال رجلٌ: إن الرجل يحبّ أن يكون ثوبُه حسنًا، ونعله حسنًا، قال: إن الله جميل،يحبُّ الجمالَ. الكبرُ بطرُ الحقِّ وغمطُ الناسِ.

سوال نمبر4   اكتب/اكتبي صياغة فعل النهي مع تصريفه من مادة "درَس". (فعل نہی بنانے کا قاعدہ ذکر کریں اور "درَس" کے مادہ سے اس کی گردان لکھیں)۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q 1.   Answer the following short questions.   (6x5=30)

سوال نمبر 1:   درج ذیل سوالوں کے مختصر جواب دیں۔

i.   Draw a comparison between the policies of Pakistani and International news agencies.

i.   پاکستانی اور بین الاقوامی نیوز اجنسیوں کی پالیسی کے مابین موازنہ کریں۔

ii. Discuss the organizational structure of Reuters.

ii. Reuters کا تنظیمی ڈھانچہ بیان کریں۔

iii. Critically evaluate the role of Al-Jazeera.

iii. الجزیرہ کے کردار کا تنقیدی جائزہ لیں۔

iv. Name any four news agencies of Pakistan along with their establishment dates.

iv. کوئی سی چار پاکستانی خبر رساں ایجنسیوں کے نام مع تاریخ لکھیں۔

v.   Draw a comparison between the policies of BBC and CNN.

v.   بی بی سی اور سی این این کی پالیسی کا موازنہ کریں۔

vi. Critically evaluate the role of DPA (Deutsche Presse-Agentur) as a source of news.

vi. DPA کی خبر رسانی کے کردار کا تنقیدی جائزہ لیں۔

Q 2.   Answer the following Questions.

سوال نمبر 2:   مندرجہ ذیل سوالوں کے جواب دیں۔

i.   Explain the profile and organizational structure of newsroom of Star News in details.   **(15)**

i.   Star News کے خبر رسانی کی profile اور تنظیمی ڈھانچہ کو تفصیلاً بیان کریں۔

ii. Write short notes on any THREE of the following: **(3x5=15)**

ii. مندرجہ ذیل میں سے کسی تین پر مختصر نوٹ لکھیں۔

   a)   General Electric
   b)   Washington Post
   c)   CNN
   d)   The Guardian

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q 1.   Answer the following short questions.   (6x5=30)

i.   Define 'encoding' and 'decoding' in the communication process.
ii. What is the significance of communication in society?
iii. Elaborate functions of mass communication.
iv. What is semantic barrier in communication process?
v.   How does noise affect the effectiveness of communication?
vi. Define communication and explain its significance.

Q 2.   Answer the following questions.   (3x10=30)

i.   Explain in detail the Shannon and Weaver model of communication.
ii. Draw a comparison between print and electronic media. Elaborate which one is more effective.
iii. Write a detailed note on barriers of communication.

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – Spring 2025

Paper: Cross Cultural Communication and Translation Skill
Course Code: BSU-106

Roll No. ....

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(6x5=30)**

a) How effective communication helps in life; professionally and personally?
b) What is the difference between culture and folklore?
c) Define translation. How it helps in better communication across cultures?
d) What are the major characteristics of culture?
e) What problems affect intercultural communication?
f) What are the types of translation. Explain any two in detail.

Q.2.   Answer the following questions: **(3x10=30)**

a) How do you believe your culture has prepared you to engage in better communication?

b) Why cross-cultural studies are important? Do you think it helps improving relationship between culture and communication?

c) How can cross-cultural communication assist in resolving social conflicts?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (15x2=30)

1. What is Carbon Sink?

2. Define a Species.

3. What is Greenhouse Effect?

4. What is Geologic History?

5. Differentiate between Climate and Weather.

6. Differentiate between Renewable and Non-renewable Energy?

7. What is Artificial Selection?

8. What is Vaccine? Give example

9. Is there any Ethical issue about Technologic progress?

10. What is Exobiology?

11. What is Turbine?

12. What is Photoelectric Effect?

13. What is Genetic Engineering?

14. What is Electric Generator?

15. What is Covid-19?

Q.2.   Answer the following questions: (3x10=30)

1. What is Nanotechnology? What are its Future Applications in Medicine and Food?

2. How do large scale wind patterns affect Global Climate

3. What is a Solar Cell? How do solar cells operate?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (6x5=30)

1. What is COLONIALISM? Briefly explain causes of Colonialism.

   استعمار کیا ہے؟ استعمار کے اسباب کو مختصراً بیان کریں۔

2. What is GULF MIGRATION? Explain any Four causes of Gulf Migration.

   خلیجی ہجرت کیا ہے؟ خلیجی ہجرت کی کوئی چار وجوہات بیان کریں

3. What are main causes of URBANIZATION?

   اربنائزیشن کی بنیادی وجوہات کیا ہیں؟

4. Briefly explain Eco System of Pakistan.

   پاکستان کے ایکو سسٹم کی مختصر وضاحت کریں۔

5. Briefly explain impacts of Colonialism.

   استعمار کے اثرات کو مختصراً بیان کری

6. What do you mean by the term SUSTAINABLE DEVELOPMENT?

   پائیدار ترقی کی اصطلاح سے آپ کی کیا مراد ہے

Q.2.   Answer the following questions: (3x10=30)

1. What is GREEN REVOLUTION? Explain characteristics of Green Revolution.

   سبز انقلاب کیا ہے ؟ سبز انقلاب کی خصوصیات بیان کریں۔؟

2. What is DEMOCRCAY? Explain characteristics of Democracy.

   جمہوریت کیا ہے ؟ جمہوریت کی خصوصیات

3. Explain the following terms.

   Landed power

   لینڈڈ پاور

   Coutryside

   دیہی علاقے

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Solve the following: **(15x2=30)**

i.   Find the x-intercept of $y = x + 5$.

ii. Express interval $[-1,1]$ in Set Builder Notation.

iii. Solve $|5x - 3| < 12$ *show the solution on Number line.*

iv. *24 is a positive integer or $\sqrt{2}$ is irrational number. Find the truth values of this disjunction.*

v.   *Write the Inverse of the the given conditional if $\sim q \rightarrow \sim p$.*

vi. *Find the Value of t if $\frac{3.5}{4.8} = \frac{t}{16}$.*

vii. What is difference between constant and variable.

viii. In Ali's class there are 15 Boys and 30 Girls. Write the Ratio of Girls to Boys in its Simple form.

ix. Find the value of $f(x) = -2x + 5$ when x=3.

x.   Determine whether the given point (4,1) is solution of $\begin{cases} x + 2y = 2 \\ x - 2y = 6 \end{cases}$ or Not.

xi. Jameel bought 6 Apples for 48 rupees. How much would 2 Apples cost.

xii. Fahad ran 10 miles in 80 minutes. At that rate how far would he run in 2.5 hours.

xiii. In 2006 Subhan was 146 cm tall. He grew to be 176 cm by the year 2022. What was Subhan's rate of Growth over this period in his life?

xiv. Define Dependent Variable and Independent Variable.

xv. Solve $-3x + 5 \geq 2x-6$.

Answer the following questions: **(3x10=30)**

Q#2) (a)   The 2017 census found a Pakistan population of about 283 million, with an estimated Decline rate of 0.7% per year. Write an equation for the Pakistan population that assumes exponential growth at this rate. Use the equation to predict the Pakistan population in 2100.   **(5)**

(b) Solve the System of linear Equations $\begin{cases} 2x + y = 10 \\ x - 2y = 15 \end{cases}$ **(5)**

Q#3) (a) Discuss the shift in the function whos graph is given.

(5)

$f(x) + 4 = x^2 + 4$

$f(x + 1) = (x + 1)^2$

$f(x) = x^2$
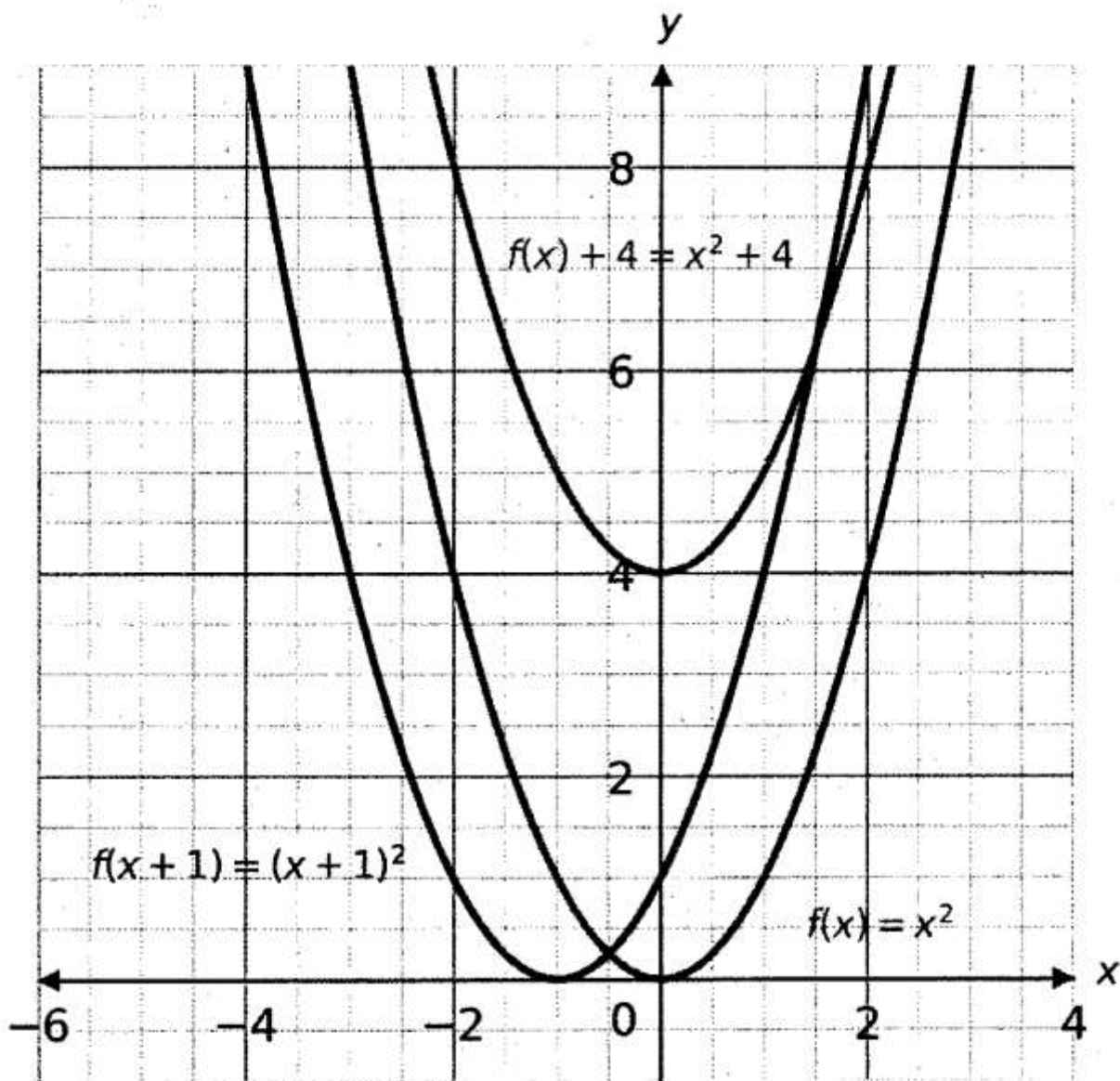
Find slope, x and y intercept of linear function $y = 4 - 3x$. (5)

Q#4(a) Draw the Graph of $y = 2x$ for the value of x from -5 to 5.

(5)

(b) Write the truth table $(p \wedge q) \vee \sim q$. (5)

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کا پی پر حل کریں۔

سوال نمبر1۔ درج ذیل سوالات کے مختصر جوابات لکھیے۔ (6x5=30)

1۔ "مومی گیند "کا خلاصہ لکھیے۔

2۔ کار فکا کے افسانے "فن کار "کا مرکزی خیال تحریر کریں۔

3۔ "چاند کی دوری "کے کسی ایک کردار پر روشنی ڈالیے۔

4۔ "قیدی کی وردی "کا مرکزی خیال فوجی وردی کیسے حاصل کرتا ہے؟ اپنے الفاظ میں بیان کریں۔

5۔ وجے دان دیتھا کے افسانے "ربڑھا "کے عنوان کی وضاحت کریں۔

6۔ شامل نصاب کوئی سے پانچ افسانہ نگاروں کے نام لکھیے۔

سوال نمبر2۔ درج ذیل سوالات کے تفصیل سے جوابات لکھیے۔ (3x10=30)

1۔ "بابل کی قرعہ اندازی "کا فکری و فنی جائزہ لیجئے۔

2۔ "وقت کا باغ "کا موضوعاتی جائزہ لیجئے۔

3۔ "اوور کوٹ "نچلے طبقے کے استحصال کا استعارہ ہے۔ تفصیل سے وضاحت کریں۔

Q.1.   Define the following: **(6x5=30)**

 I. Problems of Business

 II. Joint Stock Company

 III. Enterpreneminal Qualities of Businessman

 IV. Winding up features

 V. Prospectus

 VI. Classification of Business

Q.2.   Answer the following questions.   **(3x10=30)**

 1. Discuss in Detail the Finance its importance and Kinds of sources of finance?

 2. What is the concept of employment division? Discuss its recovery and placement of promotion?

 3. What is the concept of Marketing? Discuss its functions, scope and approaches to study the Marketing?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   **Solve the following**   **(6x5=30)**

1. Evaluate $\lim\limits_{x \to 0} \frac{a^x - 1}{x}$, where $a > 0$, $a \neq 1$.

2. Differentiate $\arctan\left(\frac{2x}{1-x^2}\right)$ with respect to $\arcsin\left(\frac{2x}{1+x^2}\right)$.

3. Verify that $\begin{vmatrix} 1 & a & a^2 \\ 1 & b & b^2 \\ 1 & c & c^2 \end{vmatrix} = (a-b)(b-c)(c-a)$.

4. If the 7th and 10th terms of an harmonic progression are $\frac{1}{3}$ and $\frac{5}{21}$ respectively, find its 14th term.

5. Find the first order partial derivatives of $f(x,y) = e^{x^2 + y^2}$.

6. How many terms are there in the arithmetic progression in which $a_1 = 11$, $a_n = 68$, $d = 3$?

Q.2.   **Solve the following**   **(3x10=30)**

1. Let $f(x) = \begin{cases} x\cos\left(\frac{1}{x}\right) & \text{if } x \neq 0 \\ 0 & \text{if } x = 0 \end{cases}$. Show that f is continuous at $x = 0$.

2. Prove that the product of matrices $\begin{bmatrix} \cos^2\theta & \cos\theta\sin\theta \\ \cos\theta\sin\theta & \sin^2\theta \end{bmatrix}$ and $\begin{bmatrix} \cos^2\phi & \cos\phi\sin\phi \\ \cos\phi\sin\phi & \sin^2\phi \end{bmatrix}$ is the zero matrix when θ and ϕ differ by an odd multiple of $\frac{\pi}{2}$.

3. The revenue $R(x)$ (in rupees) from selling x units of desks is given by $R(x) = 2000\left(1 - \frac{1}{x+2}\right)$. Find the marginal revenue when x number of desks are sold.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. **Solve the following**   **(15x2=30)**

i. Solve the linear equation $3x - 2 = 7x - 10$.

ii. If $A = \begin{bmatrix} 2 & 3 \\ 2 & 1 \end{bmatrix}$, then compute AA^t.

iii. What is the domain of $f(x) = \frac{1}{x} - 1$ and $g(x) = \sqrt{x}$.

iv. If $Q(P) = 3P^2 - 6P + 1$, find the values of $Q(0), Q(-1)$ and $Q(2)$.

v. Find the limit for the function $\lim\limits_{x \to \infty} \frac{3x^2 - 7x}{4x^2 - 21}$.

vi. Find the marginal function MC for the given total function $TC = 3Q^2 + 7Q + 12$.

vii. Find A^2 if $A = \begin{bmatrix} 2 & -1 \\ 3 & 5 \end{bmatrix}$.

viii. Write the quadratic formula.

ix. What is the derivative of $(t^2 - 6t + 7)^3$ with respect to t.

x. Find the roots of the equation $y^2 + 5y + 4 = 0$.

xi. If $A = \begin{bmatrix} -6 & -1/2 \\ 4 & 8 \end{bmatrix}$, find $-4A$.

xii. Given $S = \begin{bmatrix} 7 & -1 \\ 6 & 9 \end{bmatrix}$ and $T = \begin{bmatrix} 0 & 4 \\ 3 & -2 \end{bmatrix}$, find $4S - 2T$.

xiii. If $A = \begin{bmatrix} 2 & 3 \\ 1 & -2 \end{bmatrix}$ then find A^{-1}.

xiv. Factories: $12x^2 - 7x + 1$.

xv. If $f(x) = 3x^4(2x - 5)$ then find $f'(x)$ using product rule.

Solve the following   **(5x6=30)**

Q2. If $f(x) = (x^4 - 3)(x^3 - 3)$, then find $f'(x)$ and $f''(x)$.

Q3. Solve the following system of linear equations by Cramer's rule
$$0Q_1 + Q_2 - 10Q_3 = 0$$
$$Q_1 + 0Q_2 - 2Q_3 = 0$$
$$10Q_1 + 2Q_2 + 0Q_3 = 240$$

Q4. Find the inverse of $A = \begin{bmatrix} 4 & 1 & -5 \\ -2 & 3 & 1 \\ 3 & -1 & 4 \end{bmatrix}$.

Q5. If $A = \begin{bmatrix} 4 & 11 \\ 17 & 6 \end{bmatrix}$, $B = \begin{bmatrix} 3 & 7 \\ 6 & 2 \end{bmatrix}$, then show that matrix addition and subtraction are commutative.

Q6. Find the marginal revenue MR function for each of the following demand functions:

i. $Q = 36 - 2P$,

ii. $Q = 4P - 44$.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions: **(6x5=30)**

1. A survey of 200 people found that 120 like to watch TV, 90 like to read books, and 60 like to do both. How many people like to do neither?

2. What is a bipartite graph?

3. The bit strings for the sets {1, 2, 3, 4, 5} and {1, 3, 5, 7, 9} are 11 1110 0000 and 10 1010 1010, respectively. Use bit strings to find the union and intersection of these sets.

4. Ealuate the summation $\sum_{i=1}^{3}\sum_{j=0}^{1}(i \cdot j + 1)$.

5. How many relations are there on a set with n elements?

6. How many bit strings of length 10 either begin with three 0s or end with two 0s?

Answer the following questions: **(3x10=30)**

Question 2.   Let $P(x)$, $Q(x)$, $R(x)$, and $S(x)$ be the statements "x is a baby," "x is logical," "x is able to manage a crocodile," and "x is despised," respectively. Suppose that the domain consists of all people. Express each of these statements using quantifiers; logical connectives; and $P(x)$, $Q(x)$, $R(x)$, and $S(x)$.

   a) Babies are illogical.

   b) Nobody is despised who can manage a crocodile.

   c) Illogical persons are despised.

   d) Babies cannot manage crocodiles.

Question 3.

   a) Prove that if x is irrational, then $1/x$ is irrational.

   b) Use set builder notation and logical equivalences to establish the first De Morgan law $\overline{A \cap B} = \overline{A} \cup \overline{B}$.

Question 4.   Determine whether the directed graph shown below has an Euler circuit. Construct an Euler circuit if one exists. If no Euler circuit exists, determine whether the directed graph has an Euler path. Construct an Euler path if one exists.
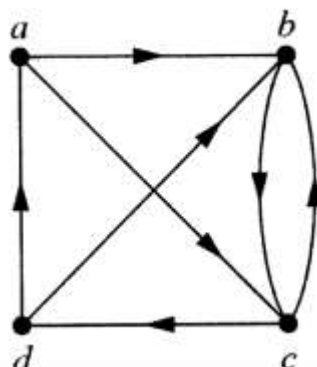
THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions: **(5x6=30)**

Program 1

```cpp
int main()
{
    int x = 20;
    cout << --x * 2 << ", ";
    cout << x++;

    return EXIT_SUCCESS;
}
```

Program 2

```cpp
int main()
{
    int status = 60;
    if (status > 60 && status < 100)
            cout << "Pass";
    else
            cout << "Fail";

    return EXIT_SUCCESS;
}
```

Program 3

```cpp
int main()
{
    int y = 2;
    switch (y)
    {
            case 1:
                cout << "one" << endl;
                break;
            case 2:
                cout << "two" << endl;
            case 3:
                cout << "three" << endl;
                break;
            default:
                cout << "four";
    }

    return EXIT_SUCCESS;
}
```

Program 4

```cpp
void foo(int* x, int y)
{
    (*x) = (*x) + (*x);
    y = y - y;
}

int main()
{
    int a = 3, b = 2;
    foo(&a, b);
    cout << a << " " << b << endl;

    return EXIT_SUCCESS;
}
```

Program 5

```
int main()
{
    int X[] = { 5, 20, 25, 50, 100 };
    int* p = X;

    while (*p < 100)
    {
        if (*p % 4 != 0)
            *p = *p + 2;
        else
            *p = *p + 1;

        p++;
    }

    for (int I = 4; I >= 1; I--)
    {
        cout << X[I] << "*";

        if (I % 4 == 0)
            cout << endl;
    }

    cout << X[0] * 4 << endl;

    return EXIT_SUCCESS;
}
```

Q.2.   Answer the following questions: (3x10=30)

1) Write a program that calculates the **area of a sector of a circle**. The program should take the **radius of the circle (r)** and the **central angle (θ) in degrees** as input from the user and display the calculated area.

The formula for the **area of a sector** is:

$$Area = \frac{\theta}{360} \pi r^2$$

where r is the **radius** of the circle, θ is the central angle in degrees, and π **(pi)** is approximately **3.14159**.

2) Write a function named **numberToTemperatureRange** that takes an integer representing a **temperature** in Celsius and returns the corresponding **temperature range**: "Cold" (below 0°C), "Cool" (0-15°C), "Warm" (16-25°C), or "Hot" (above 25°C). If the input is below -100°C or above 100°C, the function should return "Invalid temperature".

For example:

- For input **-5**, the function should return **"Cold"**.
- For input **40**, the function should return **"Hot"**.
- For input **120**, the function should return **"Invalid temperature"**.

3) Write a function named **mirrorOperators** that takes the following arguments:

1. An **array of characters** (representing mathematical operators).
2. An **integer** representing the number of characters in the array.

The function must **reverse the order** of the values in the array (without creating a new array).

For example, if the array passed to the function contains the following values:

Index:	0	1	2	3	4
Values:	+	–	/	*	%

After the function executes, the array should be modified to look like this:

Index:	0	1	2	3	4
Values:	%	*	/	–	+

The function **should not return any value.**

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(15x2=30)**

(i)   How CFT is superior to VBT?

(ii)   How electronegativity can be measured?

(iii)   Explain the metullargical reactions steps in copper extraction from its ores?

(iv)   What are the raw materials for producing Glass?

(v)   Give an example of Lewis acid and base?

(vi)   How age of dead bodies or rocks can be determined?

(vii)   What are the ores of chromium from which it is extracted?

(viii) What is the shape of ClF_4^- according to VBT?

(ix)   What is the structure of $Fe(CO)_5$?

(x)   What are the types of hybridization in AB_4 molecules?

(xi)   What are the hazardous effects of nuclear radiations?

(xii)   What is mass defect and binding energy in nuclear chemistry?

(xiii) How SHAB concept explains nature of acid?

(xiv)   Explain the paramagnetic or diamagnetic nature of any metal complex with MOT.

(xv)   What are the main drawbacks of VESPR theory?

Q.2.   Answer the following questions: **(3x10=30)**

(a)   What are the types of isomerism? Explain with suitable examples.

(b)   Explain diagonal relationship of elements with examples. How it alters the general periodic trend in periodic table

(c)   What are the applications of coordination compounds in industry and environment?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(15x2=30)**

Part-1

1. Write condensed and bond-line formulas for the five isomeric C_6H_{14} alkanes.

2. cyclo-octatetraene is not planar, where as its dianion is a planar molecule. Why?

3. Direct esterification is restricted to reactions of carboxylic acids and primary alcohols. Why?

4. Chloral reacts rapidly with methanol to form the hemiacetal, but only slowly to give the corresponding acetal. Why?

5. Explain with mechanism the synthesis of p-nitobenzaldehyde from tolune.

6. Explain with mechanism the synthesis of Butanenitrile from n-propyl alcohol

7. Explain with mechanism the synthesis of n-butyl bromide from n-butyl alcohol

8. Explain with mechanism the synthesis of Benzoic Acid from Acetophenone.

9. Describe a simple chemical test to distinguish between the Benzioc acid and Cinnamic acid.

10. From Ethanol, 1-Phenylethanol, and 2-Phenylethanol which of the substance would give a positive iodoform test?

11. Define Inductive effect, Resonance effect, Tautomerism and Hydrogen Bonding.

12. Why Corey-House Method is more suitable as compared to Wurtz reaction for the synthesis of alkane.

13. Draw the structures of the following compounds and labeled them with IUPAC systematic rules.

    i.   Phenylnitromethane,   ii.   Butyric anhydride,   iii.   Carbolic acid,   iv.   Formamide

14. Draw the structures of following compounds and labeled them with IUPAC systematic rules.
    i. 3-cyclopentylhexane   ii. 2-cyclobutyl-3-methylpentane,   iii. Isopropylcyclodecane,
    iv. 8-methylbicyclo [3.2.1] octane

15. How would you compare the boiling points of the following compounds?
    i.   n-Butane, Acetone and Propionaldehyde.   ii.   n-Hexane, Pentanal and 1- Pentanal.

Part-2

Q. No. 2.   Write down the reagents, conditions and mechanisms of the following reactions.   **4x2.5=10**

i). Kolbe reaction.   ii). Williamson synthesis   iii). Dow Process   iv). Reimer-Tiemann reaction

Q. No. 3.   Explain the following terms with examples.   **4x2.5=10**

i).   Ozonolysis   ii).   Hofmann Rule iii).   Polymerization   iv).   Epoxidation

Q. No. 4.   Predict the principal product in each of the following reactions and explain it. **3 + 3 +4 = (10)**

i). $CH_3CHO + (CH_3)_2CO \xrightarrow{NaOH}$?

iii). $CH_2O + (CH_3)_3CCHO \xrightarrow{NaOH}$?

ii). $(CH_3)_2C(OH)CH_2COCH_3 \xrightarrow{NaOH}$?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

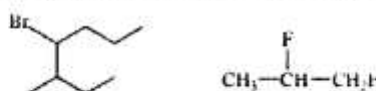**Q.1. Answer the following short questions:**   **(15x2=30)**

  i. Predict the compound in each pair that will undergo the SN_2 reaction faster.
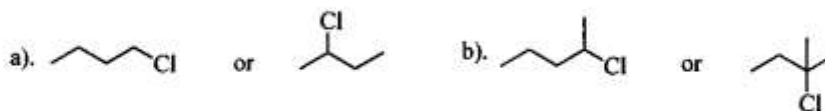
  ii. How will you prepare cyclopropane using simmon smith reaction?
  iii. Give two main limitations of Friedel craft alkylation reaction of benzene.
 iv. Give systematic (IUPAC) names for the following compounds.

  v. Neopentyl bromide is resistant towards SN_2 reaction.
  vi. Ethanol has higher boiling point than diethyl ether. Why?
  vii. Why tertiary carbocations are more stable as compared to secondary carbocation?
  viii. How will you synthesize propylene from propyl alcohol?
  ix. Define tautomerism with example?
  x. How will you differentiate between aldehyde and ketone?
  xi. Nitration of phenol is 10^3 times faster than benzene. Explain.
  xii. N, N-dimethylaniline is less basic then 2,6,N,N-tetramethylaniline. Justify.
  xiii. Why carboxylate ion is more stable than alkoxide ion?
  xiv. What is Williamson ether synthesis?
  xv. Why pyrrole is a weaker base than pyridine?

Answer the following questions:

Q.2 (a) Write down the synthesis of phenol with mechanism.   (5)
    (b) What is Birch reduction? Discuss its regioselectivity in detail.   (5)

Q.3 Complete the following reaction with mechanism.   **(4X2.5=10)**
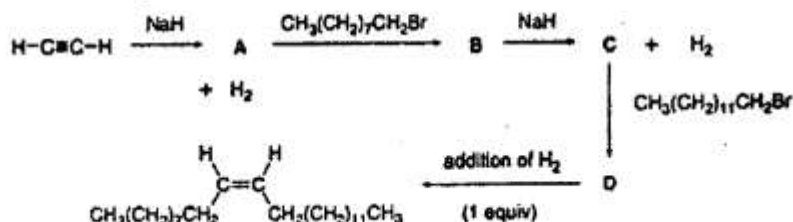
Q.4 (a) Differentiate between hyper conjugation and inductive effect? Draw all the hyper conjugating structures of tertiary carbocation.   (5)
    (b) What is nucleophilic substitution reaction? Discuss unimolecular substitution reaction in detail.   (5)

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (6x5=30)

Part-1

I.   How does hyperconjugation affect the stability of alkenes and carbocations?

II.   Give IUPAC names of the following compounds.
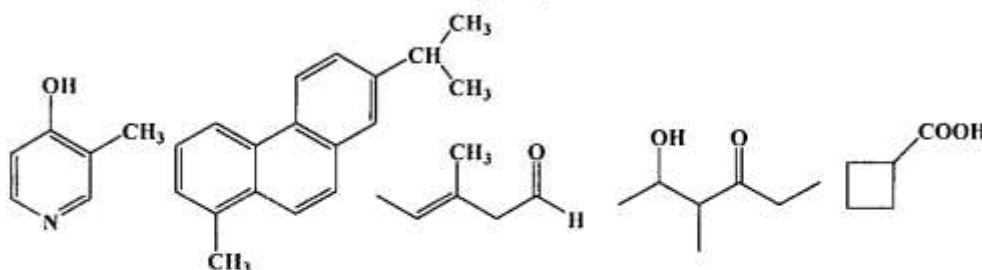
III.   How are cycloalkanes prepared by Freund reaction?

IV.   Convert benzene into *m*-chloronitrobenzene and benzaldehyde.

V.   Why 1-propyne shows acidic behavior? How is it converted into 2-butyne?

VI.   Write down the mechanism of the addition of HBr to 2-pentene.

Part-2

Q. NO. 2: Write down the mechanism for the following reactions.   [2 X 5=10]

I.   Kolbe's electrolysis for the preparation of alkanes

II.   Diels-Alder reaction

Q. NO. 3:

(a) Convert acetylene into;   (5)

I.   Ethanal

II.   Oxalic acid

III.   Ethane

IV.   Benzene

V.   Methyl cyanide

(b) What is Friedel-Crafts alkylation? Discuss the mechanism and limitations of the reaction.   (5)

Q. NO. 4:

(a) Define resonance and discuss the rules of resonance.   (4)

(b) Bring about the following conversions;   (6)

I.   Ethyl chloride into *n*-butane

II.   Phenol into benzene

III.   Acetone into propane

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (6x5=30)

a) Explain the function of buses in a computer system.

b) Differentiate between hardware and software with suitable examples.

c) What is the role of an operating system in a computer?

d) Discuss the various page layout options available in MS Word. How can they enhance document presentation?

e) Explain the concept of Relationships in MS Access. How do they contribute to database integrity?

f) Explain the importance of Animation tools in MS PowerPoint. Provide examples of their effective use.

Q.2.   Answer the following questions: (3x10=30)

a) What is the difference between a LAN, WAN, and MAN?

b) Explain the concept of Data Validation in MS Excel. How can it be used to improve data accuracy?

c) What are the five generations of computers, and what are their distinguishing features?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (10X3=30)

    i.   Define current assets and current liabilities.
   ii.   Elaborate realization principle in accounting.
  iii.   What is meant by errors of omission and errors of commission?
  iv.   Define financial accounting.
    v.   Illustrate three examples of capital and revenue expenses each.
  vi.   Define and differentiate between periodic and perpetual inventory system.
 vii. What is meant by going concern assumption in accounting?
viii. What is meant by owner's equity?
  ix.   Define journal. Why is it called primary book of entry?
   x.   Define balance sheet. State its contents.

Answer the following questions: (3X10=30)

Q. 2 Moon advertising was established on December 1 of the current year and had the following account balances on December 31, listed in tabular form:

Assets				=	Liabilities		+ Owner's Equity
Cash	+ Land	+ Building	+ Office Equipment	=	Notes Payable	+ Accounts Payable	+ Capital
Balance $111,000	$285,000	$375,000	$53,750		$240,000	$84,750	$500,000

The following transactions occurred during January by Sunshine advertising:
    i.   The owner invested additional cash of $105,000 in business.
   ii.   Purchased land and a small office building for $270,000, of which $105,000 was the value of the land and $165,000 was the value of the building. Paid $ 67,500 in cash and signed a note payable for the remaining $202,500.
  iii. Purchase computers on account for $28,500.
  iv. Paid the $84,750 account payable due on January 15.

Required: Record the effects of the above transactions on assets liabilities and owner's equity and show the balance for all columns after each transaction.

Q. 3 In taking out a trial balance the accountant finds that the total of the credit side exceeds that of debit side by $2,410. He places the difference to a suspense account and subsequently detects the following mistakes:

a) Stationery purchased for $890 but debited to stationery account as $980.
b) A sum of $650 received from Aslam was credited twice in his account.
c) Wages $250 paid for installing a machine were debited to wages account as $520.
d) A sale of $350 was entered in the purchase book as $530 but customer's account was correctly debited with $350.
e) A sale of $1,000 to Farid was credited to his account twice.
f) Old furniture sold for $6,000 was passed through sales book.

Required: Pass rectifying entries and close the suspense account.

Q. 4 The following are the account balances of Zaeem Tax Consultancy on December 31, 2024:

Account Title	Balance ($)
Cash	4,500
Accounts Receivable	3,000
Supplies	1,700
Prepaid Insurance	1,850
Equipment	38,000
Accumulated Depreciation—Equipment	12,000
Accounts Payable	10,600
Saleh Zaeem, Capital	35,885
Saleh Zaeem, Drawing	1,5000
Fees Earned	91,000
Rent Expense	7,200
Salaries Expense	75,400
Utilities Expense	2,170
Maintenance Expense	550

Adjustment data:
a) A physical count reveals $900 of supplies on hand.
b) Insurance expired, $1,200.
c) Depreciation of equipment is $2,600 per year.
d) Accrued Salaries are $1,000.

Required: Prepare an Income Statement and Statement of Owner's equity for the year ended December 31, 2023 and a classified Balance sheet at December 31, 2024.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (6x5=30)

a) What is the difference between a database and a DBMS?

b) Explain the importance of data in decision-making processes.

c) Differentiate between a file system and a database system.

d) What is the role of DBA (Database Administrator)?

e) Discuss the importance of the conceptual schema in database design.

f) What are the Database Integrity rules?

Q.2.   Answer the following questions: (3x10=30)

a) Discuss the steps of normalization: 1NF, 2NF, and 3NF on the following table.

Employee (Emp_ID, Emp_Name, Project_ID, Project_Name, Manager_ID, Manager_Name)

b) Discuss the different types of DBMS: Hierarchical, Network, Relational, and Object-Oriented.

c) Create an ERD for a hospital management system to manage Patients, Doctors, Appointments, and Medical Records. Ensure to include relationships between doctors and their specialties, patients, and appointments. Identify key attributes for each entity. Explain relationships between entities (e.g., one-to-many, many-to-many). Include constraints such as primary keys, foreign keys, and cardinalities.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   (6x5=30)

i.   What is Search engine?

ii.   What is Column? How you can apply columns in MS-Word document?

iii.   What is folder? What is the process of copying, moving files and folders?

iv.   Differentiate between SRAM and DRAM.

v.   Explain custom animation in MS-PowerPoint.

vi.   What are Desktop computers?

Q.2.   Answer the following questions.   (3x10=30)

1.   What is CPU? Explain types of BUS interconnection in detail.

2.   What are Charts in MS-Excel? Explain features of MS-PowerPoint.

3.   What are Word processor software? Explain paragraph formatting and table creation in MS-Word.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q 1.   **Answer the following short questions.**   **(6x5=30)**

سوال نمبر1:   درج ذیل سوالوں کے مختصر جواب دیں۔

I.   What is the concept of education in general terms? Briefly explain.

تعلیم کا عمومی تصور کیا ہے؟ مختصر وضاحت کریں۔

II.   Briefly explain the key elements involved in the process of education.

تعلیم کے مراحل میں شامل اہم عناصر پر مختصر نوٹ تحریر کریں۔

III.   Define the modes of education.

تعلیم کے مختلف طریقہ کار کی وضاحت کریں۔

IV.   Why is education significant for societal development? Briefly explain.

معاشرتی ترقی کے لیے تعلیم کیوں ضروری ہے؟ مختصر وضاحت کریں۔

V.   Describe three main functions of an education system.

نظام تعلیم کے تین بنیادی افعال تحریر کریں۔

VI.   What is the Islamic concept of education? Briefly explain.

اسلام کا تصور تعلیم کیا ہے؟ مختصر وضاحت کریں۔

Q 2.   **Answer the following Questions.**   **(3x10=30)**

سوال نمبر2:   مندرجہ ذیل سوالوں کے جواب دیں۔

I. What are the sources of knowledge from an Islamic perspective and their impact on education? Discuss in detail.

اسلامی نقطہ نظر سے علم کے ذرائع کون کون سے ہیں اور ان کے تعلیم پر کیا اثرات مرتب ہوتے ہیں؟ مفصل نوٹ تحریر کریں۔

II. What are the principles of Islamization of education? Discuss the perspective of contemporary Islamic scholars, respectively Ismail al-Raja Farooqi, Syed Abul A'ala Maududi, and Syed Qutub.

تعلیم کی اسلامائزیشن کے اصول کیا ہیں؟ جدید مسلم مفکرین؛ اسماعیل الر جافاروقی، سید ابوالاعلیٰ مودودی، اور سید قطب کے نقطہ ہائے نظر مفصل نوٹ تحریر کریں۔

III. Critically review the education system in Pakistan from an Islamic perspective.

اسلامی نقطہ نظر سے پاکستان میں نظام تعلیم کا تنقیدی جائزہ لیں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following Questions.   **(5x6=30)**

1. Discuss the problems in the computation of national income.

2. What is inflation tax? Who pays for the inflation tax?

3. Explain Okun's Law.

4. What is exchange rate? Explain the difference between real and nominal exchange rates?

5. What is GDP deflator? How is it calculated?

Q.2. Answer the following questions.   **(3x10=30)**

1. Discuss the concept of national income. Explain the measurement of national income through Product, Income and Expenditure approaches.

2. What is money? Describe its various forms? What functions does money perform in an economy?

3. What is meant by fiscal policy? Discuss major heads of public expenditures.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   **Answer the following short questions.**   **(6x5=30)**

1. Explain global distribution of resources.
2. What is classical dichotomy?
3. Briefly explain the exogenous and endogenous variable and their functional relationship.
4. Explain the major heads of public expenditure.
5. Construct the circular flow of National Income.
6. What is Demand for Money? Briefly explain Portfolio Balance Approach.

Q.2.   **Answer the following questions.**   **(3x10=30)**

1. Explain the Says Law of Market and the Quantity Theory of Money in classical macroeconomics framework.
2. Elaborate the three methods to compute the GNP and the problems in with their computation.
3. Define Central Bank, and discuss its functions with reference to State Bank of Pakistan.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   (6x5=30)

i.   Scope and importance of Economics

ii.   Income Elasticity of demand

iii.   Exchange Rate

iv.   Consumer behavior

v.   Law of demand with the help of schedule and graph,

vi.   Monetary Policy

Q.2.   Answer the following questions.   (3x10=30)

1. Explain Market Equilibrium with the help of table and diagram.

2. Explain law of Equi-Marginal Utility in detail with the help of schedule and diagram along with its assumptions and limitations.

3. Define price elasticity of demand. How is it measured? Explain with the help of schedule and diagram

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. **Answer the following short questions.**   **(6x5=30)**

i. What do you mean by 'scarcity' in Microeconomics?

ii. What is the difference in Production, Stock and Supply?

iii. Give some examples of fixed cost of production.

iv. Give two examples of Perfect Competition from real life.

v. Where do we use derivatives in economics?

vi. List the properties of indifference curves.

Q.2. **Answer the following questions.**   **(3x10=30)**

a. Discuss the Law of Diminishing Marginal Utility.

b. Show the Market equilibrium with the help of demand and supply curves.

c. How is price and output determined under Perfect Competition in the long run?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   **Answer the following short questions**   **(6x5=30)**

1. Explain the principles of Vygotsky's socio-cognitive development theory.
2. Describe the role of self-speech in language development at the early childhood stage.
3. Enlist with an explanation of the levels of cognitive development given by Jean Piaget.
4. Differentiate between growth and development.
5. Designate the role of the teacher in child development.
6. Elaborate Zone of Proximal Development (ZPD).

Q.2.   **Answer the following questions.**   **(3x10=30)**

1. Describe Gardner's Multiple Intelligence Theory with Application in the Educative Process.
2. Elucidate the Developmentally Appropriate Practices for Preschool Child Development.
3. Enlighten the Psycho-Social Model of Development given by Erik Erikson.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q 1.   Answer the following short questions.   **(6x5=30)**

سوال نمبر1:   درج ذیل سوالوں کے مختصر جواب دیں۔

i.   Define profession, write major characteristics of a profession.

i.   پیشہ کی تعریف کریں۔ پیشے کی اہم خصوصیات تحریر کریں۔

ii.   Why teacher training is important? Give arguments.

ii.   اساتذہ کی ٹریننگ کیوں ضروری ہے؟ دلائل دیں۔

iii.   Describe fundamentals of teaching profession.

iii.   پیشہ تدریس کی بنیادیں بیان کریں۔

iv.   Explain the process of in-service training in Pakistan.

iv.   پاکستان میں حاضر سروس اساتذہ کی ٹریننگ کا طریقہ کار واضح کریں۔

v.   Who is said to be a good teacher? Write characteristics.

v .   اچھا استاد کون ہوتا ہے؟ خصوصیات لکھیں۔

vi.   Write a note on service structure of teachers in Pakistan.

vi.   پاکستان میں اساتذہ کی نوکری کا خاکہ تحریر کریں۔

Q 2.   Answer the following questions.   **(3x10=30)**

سوال نمبر2:   مندرجہ ذیل سوالوں کے جواب دیں۔

i.   Write a note on Prophet (PBUH) as an ideal teacher.

i.   محمد ﷺ بطور "بہترین استاد" پر نوٹ لکھیں۔

ii.   Describe the comparative study on teacher education.

ii.   اساتذہ کی تعلیم پر دنیا کے مختلف ممالک کا موازنہ کریں۔

iii.   Explain Islamic approach in teaching.

iii.   تدریس میں اسلامی اپروچ کی وضاحت کریں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

Q 1.   Answer the following short questions.   **(6x5=30)**

سوال نمبر1:   درج ذیل سوالوں کے مختصر جواب دیں۔

۱۔ میثاق مدینہ سے کیا مراد ہے؟

1. What is meant by the Covenant of Madinah?

۲۔ اسلامی تہذیب کے عوامل لکھیں؟

2. Write the factors of Islamic civilization?

۳۔ سورۃ المومنون کب نازل ہوئی اور اس میں کل کتنی آیات ہیں؟

3. When was Surah Al-Mu'minun revealed and how many verses are there in it?

۴۔ سچے تاجر کا انجام کن لوگوں کے ساتھ ہو گا ماحدیث کی روشنی میں مختصر ابیان کریں؟

4. Briefly explain in the light of Hadith with which people the fate of the merchant will be?

۵۔ ترجمہ و مختصر تشریح کریں (انما المومنون اخوۃ)؟

5. Translate and briefly explain (انما المومنون اخوۃ)؟

۶۔ عقیدہ اور عمل میں کیا فرق ہے؟

6. What is the difference between belief and action?

Q 2.   Answer the following questions.   **(3x10=30)**

سوال نمبر2:   مندرجہ ذیل سوالوں کے جواب دیں۔

1)   **Translate and explain the verses?**

1۔ آیات کا ترجمہ و تشریح کریں؟

وَمَا ءَاتَىٰكُمُ الرَّسُولُ فَخُذُوهُ ۚ وَمَا نَهَىٰكُمْ عَنْهُ فَانتَهُوا ۚ وَاتَّقُوا اللَّهَ ۖ إِنَّ اللَّهَ شَدِيدُ الْعِقَابِ۔

2)   **Translate and explain the hadith?**

2۔ حدیث کا ترجمہ و تشریح کریں؟

عن النعمان بن بشیر ؓ قال قال رسول اللهﷺ تری المومنین فی تراحمهم و توادھم و تعاطفهم کمثل الجسد اذا اشتکی عضو تداعی لہ سائر الجسد بالسهر والحمی ۔ (متفق علیہ)

۳۔ اسلامی تہذیب کے نمایاں خصائص کون سے ہیں؟ کوئی سے 2 پر نوٹ لکھیں؟

3)   **What are the salient features of Islamic civilization? Write   note on Any two?**

Ethics (for Non-Muslim Candidates)

Note: **Answer the following questions.**   **(3x20=60)**

نوٹ: درج ذیل سوالات کے تفصیلی جواب دیجیے۔

Q.1. Write a note on the teachings of Ethics of Christianity.

سوال نمبر1:   عیسائیت کی اخلاقی تعلیمات پر نوٹ لکھیں۔

Q.2. Elaborate the "Concept of Success" of various religions.

سوال نمبر2:   مختلف مذاہب کی روشنی میں "تصور فلاح" کو واضح کریں۔

Q.3. Explain the teachings of Ethics of Gautam Budh.

سوال نمبر3:   گوتم بدھ کی اخلاقی تعلیمات کا تعارف کروائیں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(5x4=20)**

i. Mist is a symbolic material in the poem *Fog*. Discuss.

ii. *When I have Fears* deals with the personal worries of Keats. Elaborate.

iii. What is meant by empty barrel in the poem *Lights Out*?

iv. Explain any two images signifying hatred in the poem *A Poison Tree*.

v. *The Solitary Reaper* is a sad but melodious poem. Explain.

Q.2. Explain in your own words ONE of the following stanzas with reference to the context.

10

The sun is behind me.
Nothing has changed since I began.
My eye has permitted no change.
I am going to keep things like this.

Or

I lost two cities, lovely ones. And, vaster,
Some realms I owned, two rivers, a continent.
I miss them but it wasn't a disaster.

Q.3 Give a critical analysis of the last two stanzas from the poem *All the World is a Stage*.

or

15

Give a critical analysis of the poem *Lights Out*

Q.4. Read the following passage and respond to the questions given at the end of the passage.

10+5=15

Many families now face the problem of coping with elderly members. Inevitably these demands will be met with mixed feelings. An old person may seem a nuisance if he is living with a family in a relatively small house. Equally, the old person may feel deep regret on the loss of independence that frailty brings.

The popular view is that modern families no longer offer the dependent elderly the care that they once did. However, some studies show that families give immense amounts of assistance and support to elderly relatives. Much of the burden of this care falls on the wife. Nevertheless, there are two complicating issues. First, many wives now return to work when their children go to school. Their income is often essential to the family economy. In this situation can the family afford to help an elderly relative? Second there are many old people with no relatives: perhaps a third of old people have no family members who can help them. In either of these two cases, the burden of care for the elderly may have to fall on society.

1) When an elderly person can become a nuisance?

2) How much care is provided to elderly persons now?

3) How a wife has to bear the burden of an elderly person?

4) Who will support the elderly persons who have no family?

5) When an old man experiences regret?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(6x5=30)**

1. Differentiate between rotational and revolutionary movement of the Earth.

2. What is the significance of the Stratosphere?

3. Write a short note on the Equatorial Low-Pressure Belt.

4. How do waterfalls form?

5. Differentiate between Arenaceous and Argillaceous Rocks.

6. Differentiate between waves, currents and tides.

Answer the following questions: **(3x10=30)**

Q2. Discuss the permanent pressure belt and the associated permanent winds in detail.

Q3. Write a detailed note on landforms formed by glacier action.

Q4. Write in detail the configuration of the ocean floor.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

سوال نمبر 1: درج ذیل سوالات کے مختصر جواب تحریر کریں۔ (6x5=30)

1۔ سرسید احمد خان کے مضمون "سجھ" کا خلاصہ لکھیں۔

2۔ غالب کی خطوط نویسی پر نوٹ لکھیں۔

3۔ محمد حسین آزاد ایک صاحبِ طرز انشا پرداز ہیں، اس پر اپنی رائے کا اظہار کریں؟

4۔ سرسید احمد خان کے حالاتِ زندگی تحریر کریں۔

5۔ "ابن الوقت" کی روشنی میں ابن الوقت کے کردار کا تعارف کرائیں۔

6۔ میر امن کی نصابی تحریر میں عاقل وزیر کے کردار پر نوٹ لکھیں۔

سوال نمبر 2: مندرجہ ذیل میں سے کسی ایک اقتباس کی تشریح بحوالہ سیاق و سباق کیجیے نیز سبق کا عنوان اور مصنف کا نام بھی لکھیں۔ 4+4+1+1=10

(الف) سجھ جس طرح کے انسان کے لیے بہت بڑا کمال ہے اسی طرح مکر اس کے حق میں بہت بڑا وبال ہے۔ نیک دل کی منتہائے خوبی سجھ ہے اور بد دل کی منتہائے بدی مکر۔ یایوں کہو کہ وہ نیک دل کے لیے معراج ہے اور یہ بد دل کے لیے کمال۔ سجھ نہایت عمدہ اور نیک مقصد پیدا کرتی ہے اور ان کے حاصل ہونے کو نہایت عمدہ اور تعریف کے قابل ذریعے قائم کرتی ہے۔ مگر مکر میں صرف خود غرضی ہوتی ہے۔

(ب) میں آپ سے سچ کہتا ہوں کہ میں نے آپ کے عزیزوں کی طرف سے یہی محبت پیش کی تھی اور بڑے بڑے عہدہ دار سب تھتھے ہیں۔ چیف صاحب نے میری باتیں سن کر بالکل میری رائے سے اتفاق کیا اور فرمانے لگے کہ گورنمنٹ ہند کے حکم سے تحقیقاتِ بغاوت کا ایک جداگانہ محکمہ قائم کرنا منظور ہے۔ میں چاہتا ہوں کہ قسمت دہلی کے لیے تم کو اس محکمے کا مکشتر مقرر کروں۔

سوال نمبر 3: مندرجہ ذیل شاعروں میں سے کسی ایک کے مختصر حالاتِ زندگی اور شاعری کی خصوصیات لکھیے۔ 4+4=8

(الف) مرزا رفیع سودا (ب) میر انیس

سوال نمبر 4: مندرجہ ذیل میں سے دو اشعار کی تشریح کیجیے اور شاعر کا نام بھی لکھیے۔ 3+3=6

(1) تھا مستعار حسن سے اس کے جو نور تھا خورشید میں بھی اس ہی کا ذرہ ظہور تھا

(2) اذیت، مصیبت، ملامت، بلائیں تیرے عشق میں ہم نے کیا کیا نہ دیکھا

(3) محتسب آج تو میخانے ہیں تیرے ہاتھوں دل نہ تھا کوئی کہ شیشے کی طرح چور نہ تھا

(4) پہنچا جو آپ کو تو میں پہنچا خدا کے تئیں معلوم اب ہوا کہ بہت میں بھی دور تھا

(5) ظلمت کدے میں میرے شبِ غم کا جوش ہے اک شمع ہے دلیلِ سحر سو خموش ہے

سوال نمبر 5: مندرجہ ذیل اشعار کی تشریح کیجیے۔ نظم کا عنوان اور شاعر کا نام لکھیے۔ 4+1+1=6

لوٹیں ہیں گرد و پیش جو قزاق، راہ مار بیوپاری آتے جاتے نہیں ڈر سے زینہار

کتوال رو دویں، خاک اڑاتے ہیں چوکیدار ملاحوں کا بھی کام نہیں چلتا میرے یار

ناویں ہیں گھاٹ گھاٹ کی سب دار پار بند

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

<div dir="rtl">

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

</div>

Q 1. Write down short answers of the following questions. (6x5=30)

<div dir="rtl">

سوال نمبر1:   درج ذیل سوالوں کے مختصر جوابات تحریر کیجیے۔

</div>

i. Write down the makhaz of Tafseer-e-Quran.

<div dir="rtl">

i.   تفسیر قرآن کے ماخذ تحریر کریں۔

</div>

ii. In what situation is Jihad obligatory?

<div dir="rtl">

ii.   جہاد کن حالات میں فرض ہے؟

</div>

iii. Write down the meaning of this verse.

<div dir="rtl">

iii.   "کَانَ النَّاسُ اُمَّۃً وَّاحِدَۃً" کا مفہوم تحریر کریں۔

</div>

iv. What is meant by Diyat?

<div dir="rtl">

iv.   دیت سے کیا مراد ہے؟

</div>

v. Which people are worthiest for charity?

<div dir="rtl">

v.   صدقات کے مستحق کون لوگ ہیں؟

</div>

vi. Write down Haroof-e-Mushabba Bil Fail.

<div dir="rtl">

vi.   حروفِ مشبہ بالفل تحریر کریں۔

</div>

Q 2. Write down detailed answers of the following questions. (3x10=30)

<div dir="rtl">

سوال نمبر2:   درج ذیل سوالات کے تفصیلی جوابات تحریر کیجیے۔

</div>

i. Write down the Urdu translation following verse.

<div dir="rtl">

i.   درج ذیل آیت کا بامحاورہ اردو ترجمہ تحریر کریں۔

</div>

<div dir="rtl">

وَلَا جُنَاحَ عَلَیۡکُمۡ فِیۡمَا عَرَّضۡتُمۡ بِہٖ مِنۡ خِطۡبَۃِ النِّسَآءِ اَوۡ اَکۡنَنۡتُمۡ فِیۡۤ اَنۡفُسِکُمۡ ؕ عَلِمَ اللّٰہُ اَنَّکُمۡ سَتَذۡکُرُوۡنَہُنَّ وَلٰکِنۡ لَّا تُوَاعِدُوۡہُنَّ سِرًّا اِلَّاۤ اَنۡ تَقُوۡلُوۡا قَوۡلًا مَّعۡرُوۡفًا ۬ؕ وَلَا تَعۡزِمُوۡا عُقۡدَۃَ النِّکَاحِ حَتّٰی یَبۡلُغَ الۡکِتٰبُ اَجَلَہٗ ؕ

</div>

ii. Write down a note on the importance of Tafseer.

<div dir="rtl">

ii.   تفسیر کی ضرورت و اہمیت پر نوٹ تحریر کریں۔

</div>

iii. Write down a details note on "Mehar" in reference to Surah Al Baqarah.

<div dir="rtl">

iii.   سورۃ البقرہ کی روشنی میں "مہر" پر تفصیلی نوٹ تحریر کریں۔

</div>

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Question with short answers.   (6x5=30)

سوال نمبر 1: درج ذیل سوالات کے مختصر جوابات دیں۔

i.   Explain briefly "Epistemology" in the philosophy of Education.

الف)   فلسفہ تعلیم میں "علمیات" کی مختصر اوضاحت کیجئے۔

ii.   Write the importance of Mosque in Islamic Education.

ب)   اسلامی تعلیم میں مسجد کی اہمیت تحریر کریں۔

iii.   Define individual differences. What is its importance for a teacher?

ج)   انفرادی اختلافات کی تعریف کیجئے اس کی ایک استاد کے لئے کیا اہمیت ہے؟

iv.   Write briefly different sources of knowledge.

د)   علم کے مختلف ماخذ کون سے ہیں؟ مختصراً لکھیں۔

v.   What is difference between Aims, Goals and objectives?

ہ)   ایمز (Aims) گولز (Goals) اور Objectives میں کیا فرق ہے؟

vi.   Describe the concept of Society and culture.

و)   سوسائٹی اور ثقافت کے مفہوم کو بیان کریں۔

Q.2.   Answer the following questions.   (3x10=30)

سوال نمبر 2: درج ذیل سوالات کے جوابات دیں۔

i.   Define Psychology. What is its role for a teacher in the institution?

الف)   نفسیات کی تعریف کیجئے۔ تدریس میں ایک استاد کے لئے اس کا کیا کردار ہے؟

ii.   Write different steps taken by Government to Islamization of Education.

ب)   تعلیم کو Islamization کے لئے حکومت کے مختلف اقدامات تحریر کریں۔

iii.   Define Special Education. What is the role of a teacher in special education?

ج)   خصوصی تعلیم کی تعریف کیجئے۔ خصوصی تعلیم میں ایک استاد کا کیا کردار ہے؟

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   (6x5=30)

i. Write a note on use of Artificial Intelligence for academic purposes.
ii. Define Skimming as a reading technique.
iii. Discuss the benefits of intensive reading for academic purposes.
iv. What is the CV format for a job?
v. Write a note on Speed reading techniques.
vi. Effective communication skills contribute to personality development. How?

Q.2.   Answer the following questions.   (3x10=30)

i. Write an application to the Manager HR, ABC Chemicals Ltd. for the post of Research Analyst.

ii. Write a paragraph on any **ONE** of the following topics:

- Smart Phones
- Smog: An Environmental Challenge
- Online Education

iii. Write a letter to your facebook friend telling him about the migration of skilled and talented people from Pakistan.

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester –Spring 2025

Roll No. ....

Paper: Introduction to Literature-II (Poetry and One Act Plays)
Course Code: ENG-103

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   (6x5=30)

A.   Identify the speaker's perspective on human nature in the poem, 'Go and Catch a Falling Star' and discuss how it shapes the overall message of the poem.

B.   What is the central idea of the poem, 'For a Child Born Dead' by Eizabeth Jennings?

C.   Analyse the use of sensuous imagery in 'Ode to Autumn' by John Keats.

D.   Bring out the tension between personal identity and social conformity in the poem, 'For Heidi with Blue Hair' by Fleur Adock.

E.   Examine the use of sound in the poem, 'O What is that Sound' by W.H. Auden and how it contributes to the feeling of impending danger or disruption.

F.   Comment on the elegiac tone of the poem, 'Elegy Written in a Country Churchyard' by Thomas Gray. Examine its impact on the overall effect of the poem.

Q.2.   Answer the following questions.   (2x15=30)

A.   How does Edward Albee use absurdity and humour to challenge conventional perspectives on death in the play, *The Sandbox*? Substantiate by providing textual evidence.

B.   Examine how Pope employs the conventions of epic poetry in Canto I to create a mock-heroic tone in his famous poem, 'Rape of the Locke'. Provide textual evidence to prove your point.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions   (6x5=30)

  A. Differentiat between Signifier and Signified.
  B. Write a brief note on ' Innateness Hypothesis '.
  C. What are Ideational and Interpersonal functions of language.
  D. Language is dynamic.Explain.
  E. How is Colloquial language different from formal language.
  F. Write a short note on Competence and performance.

Q.2.   Answer the following questions   (3x10=30)

  A. Discuss ' Behaviourism' as a theory of language learning.
  B. Define written & Spoken discourses. What are the characteristics of Spoken & Written discourses?
  C. Define linguistics . Discuss the branches of linguistics in detail.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions   (6x5=30)

I.   How would you **distinguish between intensive and extensive reading**, and when might you use each?

II. When applying for a job, why would you include a **cover letter** along with your CV, and how does it help your application?

III. "To get good grades, you have to keep a particular **marker** in mind as you write." What **prewriting techniques** can you use to focus on the marker and ensure your writing meets the required standards?

IV. When you're **writing a paragraph**, what does it mean for it to be **well-structured, unified, and coherent**? How does each of these qualities contribute to the effectiveness of the paragraph?

V.   When creating a CV, which **personal hobbies** should you include, and how can they enhance your application?

VI. "**Presentation** is not performance; it's a conversation with your audience." How would you interpret this advice?

Q.2.   Answer the following questions.   (3x10=30)

1. Write a LETTER to the local MOBILE agent outlining details of the <u>used</u> cellular phone that you wish to buy with the following specifications.

   a) Budget   e) Release date (model)
   b) Colour   f) Internal memory
   c) Camera   g) Ram
   d) Screen size   h) Battery etc

2. How do we write the concluding paragraph of an essay? Explain with the help of an example

3. Select one of the topics below and write a paragraph about it.
   Media war: What impact does the media war have on society?
   How can we offer meaningful help to those in need?
   Being the best of all creations, I believe that...
   Humanity: What does humanity mean to you, and why is it important?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions   (6x5=30)

i.   Write a short note on the reading technique of SQ3R?

ii.   What are the purpose and uses of writing Minutes?

iii. What are the qualities of writing a Précis?

iv.   What are the essential parts of a business letter?

v.   Discuss the ways of delivering Oral Presentation .

vi.   What are the challenges of using flipped classroom models or online lectures?

Q.2.   Answer the following questions.   (2x15=30)

i.   Write a paragraph of not more than 200 words on any ONE of the following topics.
   a. Good Governance
   b. Conservation of nature
   c. People are becoming technological zombies.

ii.   Write a job application with a detailed CV for the post of Human Resources Manager.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions (6x5=30)

a) Describe the strategies to build vocabulary.
b) Write three sentences of **Present Continuous Tense.**
c) Define **Topic Sentence** in paragraph writing
d) What is **Root Word Method**?
e) Describe importance of reading skill.
f) Why **Unity** is important in paragraph writing?

Answer the following questions (3x10=30)

Q.2. Write a paragraph on any One of the following topics: (Word Limit 120)

    a) Effects of Smog   b) Internet

Q.3. Describe some practicable suggestions and techniques to enhance reading speed.

Q.4. Read the following passage carefully and answer the following questions.

In the year of 1945 United Nations Organization came into being as the successor of League of Nations. It began with fifty nations as its members but now it has 185 member nations accounting for almost all the countries of entire earth except Switzerland. The nations are the members of the UN General Assembly, the world body's chief deliberate organ. All the other wings are answerable to it through annual and special periodical reports submitted for its consideration. The General Assembly, discusses the reports and gives its approvals, elects General Secretary and the judges of the International court of Justice, admits new members to the Assembly, and also elects the non-permanent members of various councils. There are Economic and Social Council, The Trusteeship council besides the International Court, General Assembly and the Security Council. The General Secretary is the Chief Administrative Office of the world body who heads the UN Secretariat. He presides over the General Assembly meetings and those of other organs of U.N. In addition to the above main organs, the UNO has several other specialized agencies like ILO (International Labour Organization), UNESCO (United Nations Educational, Scientific and Cultural Organization), UNCTAD (United Nations Council for Trade And Development), WHO (World Health Organization), etc. These agencies help the parent body in working out agreements on various- related matters to them and in achieving different objectives and goals. WHO, for example, plans step to achieve the highest possible level of good health of the entire human population of the earth.

1. How many members the General Assembly now has?
2. Which country is not the members of the UNO?
3. Through what the other organs of the General Assembly are answerable to it?
4. Through what office the General Secretary functions?
5. What does UNESCO stand for?

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – Spring 2025

Roll No. ....

Paper: English -II (Academic Reading and Writing)
Course Code: ENG-113

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions   (6x5=30)

1. Why is grammar essential in academic writing and reading?
2. How can speed reading techniques enhance comprehension and efficiency?
3. What are common faulty reading habits, and how can they be avoided?
4. How can one balance speed and accuracy while reading complex texts?
5. How effective is the SQ3R technique for improving reading skills?
6. What are the best strategies to enhance vocabulary?

Q.2.   Answer the following questions   (3x10=30)

1. Write a paragraph on anyone of the following topics: (word limit:120)
   a) Online Learning vs. Traditional Classroom Learning b) The Impact of Smog on Urban Life
2. What are Skimming and Scanning, and how do they contribute to developing reading skills?
3. Read the following passage carefully and answer the following questions.

For children, there is no greater instrument of education than the conversation they hear at home. It is unjust to them when the only topics discussed in their presence are the trifles of dress, the gossip of the neighborhood, the household cares that weigh heavily on their parents, or the follies and vanities of the world, which their innocent minds can barely comprehend. Children are naturally imitative, and much of their character is shaped by their parents.

If there is no life or joy in a home, the children are likely to grow up dull and uninteresting. If they are never exposed to rational discussions, they will not learn to think critically or reason effectively. When the wonders of the world around them are ignored, they become disinterested, inattentive, and unobservant. This home education, acquired unconsciously, is as crucial as the formal education provided by schools. It is our responsibility to nourish their minds just as we provide for their bodies. Children do not live by bread alone, but by every meaningful word spoken in their hearing.

Questions:

i. What sort of conversation does the author think is bad for children?
ii. Why does the author think that children may become dull and stupid?
iii. What conversation helps children to think and reason?
iv. What should parents do to prevent children becoming "without interests, listless and unobservant"?
v. What is the difference between the education children get at home and the education they get at school?

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester –Spring 2025

Roll No. ....

Paper: Communication Skills of English (Compulsory 4)
Course Code: ENG-116

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(6x5=30)**

1. What is a topic sentence? How to write a paragraph under a topic sentence?

2. What are the steps to write outline of an essay?

3. What are the three techniques to improve translation skills?

4. What is more important in translation skill?

5. How would you relate skimming and extensive reading?

6. What is common in intensive and scanning techniques of reading?

Q.2.   Answer the following questions: **(3x10=30)**

1. What are the requirements for personality development?

2. Write a letter to the Editor of "Dawn" to highlight the issue of **Rash-driving**. Also, suggest some steps to reduce **Rash-driving**.

3. Make précis of the following paragraph:

In Pakistan, the rate of social inequality has increased manifold and the masses have been reduced to the level of bare existence. The people suffer from discrimination at every level in the society because of concentration of means in a few hands. Anomalies like social injustice, lack of resources, poor condition of law and order, inefficient institutions of health and education, absence of fair play, have caught roots here owing to the fact that more goes to the military, police, and prisons than to schools, to the ministry of health, to guns than to bread. It has resulted into increase in social evils like unemployment, poverty, and illiteracy.

USE SEPARATE ANSWER BOOK FOR EACH PART

BIBLE FOR CHRISTIAN STUDENTS

SECTION—I (20 marks)   (10x2=20)

Q1. Write short answers of the following questions (words should not exceed to 25):

مندرجہ ذیل سوالات کے مختصر جواب تحریر کریں(الفاظ ۲۵ سے زیادہ نہ ہوں)

1. Who is traditionally credited with writing the Torah?

توریت کے مصنف کے طور پر کس کو جانا جاتا ہے؟

2. How is the Torah divided?

توریت کو کیسے تقسیم کیا گیا ہے؟

3. What punishment did Adam and Eve face for disobedience?

آدم اور حوا کو نافرمانی کی کیا سزا ملی؟

4. What was the Tabernacle?

خیمہ اجتماع کیا تھا؟

5. What is the symbolism of water in Exodus?

خروج میں پانی کی علامت کیا ہے؟

6. What are the Synoptic Gospels?

ہم آہنگ اناجیل کیا ہیں؟

7. Write the sounds of the Greek alphabets in English of Urdu: H, X, P, Υ

یونانی حروف H, X, P, Υ کی اردو یا انگریزی میں آوازیں لکھیں۔

8. What are true alphabets?

صحیح حروف سے کیا مراد ہے؟

9. What are diphthongs? Write all diphthongs of Koine Greek.

دوہرے صوتے سے کیا مراد ہے؟ یونانی کے تمام دوہرے صوتے لکھیں۔

10. What is the Future of Greek verb λυω?

یونانی فعل λυω کو زمانہ مستقبل میں تبدیل کریں۔

SECTION—II (10+10=20 Marks)

Attempt any two questions from the following: at least 150 words each.

کوئی سے دو سوالات کے جواب تحریر کریں: کم از کم 150 الفاظ پر مشتمل جواب تحریر کریں

Q 2 Who wrote the Gospel of Matthew, and what is its primary audience and purpose?

متی کی انجیل کس نے لکھی، اور اس کا بنیادی سامعین اور مقصد کیا ہے؟

Q 3 Write a detailed note on: "For thou wilt not leave my soul in hell; Neither wilt thou suffer thine Holy One to see corruption." (Psalm 16:10)

کیونکہ تُو نے میری جان کو پاتال میں رہنے دے دے گا نہ اپنے مقدس کو سڑنے دے گا۔ زبور 16:10 کی تشریح کریں۔

Q 4 How do the Synoptic Gospels describe the trials of Jesus, and what legal and religious issues are highlighted?

ہم آہنگ انا جیل خداوند یسوع کے مقدمات کو کیسے بیان کرتی ہیں، اور کون سے قانونی اور مذہبی مسائل نمایاں کیے گئے ہیں؟

Q 5 What similarities and differences exist in the Synoptic Gospels' accounts of Jesus calming the storm?

خداوند یسوع کے طوفان کو پر سکون کرنے کی کہانی میں ہم آہنگ انا جیل میں کیا مماثلتیں اور اختلافات ہیں؟

SECTION—III (10+10=20 Marks)

Attempt any two questions from the following: **Q9 is compulsory.**

کوئی سے دو سوالات کے جواب تحریر کریں جبکہ سوال نمبر 9 لازمی ہے۔

Q 6 Decline the Greek word βιβλιον.

یونانی اسم/لفظ βιβλιον کی مکمل گردان تحریر کریں۔

Q 7 Write Dative cases of the following Nouns: θεος, δουλος βιβλιον.

یونانی الفاظ θεος, δουλος, βιβλιον کی فاعلی حالتیں لکھیں۔

Q 8 Write the meanings of the following Greek vocabulary of New Testament: κυριος, λαος, ἀποστολος.

دیے گئے یونانی الفاظ κυριος, λαος, ἀποστολος کے معنی تحریر کریں۔

Q 9 Translate the following verses from Greek to English or Urdu

درج ذیل آیات کا یونانی سے انگریزی یا اردو میں ترجمہ کریں۔

1. Ἰακὼβ δὲ ἐγέννησεν τὸν Ἰωσὴφ τὸν ἄνδρα Μαρίας, ἐξ ἧς ἐγεννήθη Ἰησοῦς ὁ λεγόμενος χριστός.

2. ἐγὼ ἐβάπτισα ὑμᾶς ὕδατι, αὐτὸς δὲ βαπτίσει ὑμᾶς ἐν πνεύματι ἁγίῳ

3. Καὶ αὐτὸς ἦν Ἰησοῦς ἀρχόμενος ὡσεὶ ἐτῶν τριάκοντα, ὢν υἱός, ὡς ἐνομίζετο, Ἰωσὴφ τοῦ Ἠλὶ

GEETA FOR HINDU STUDENTS

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

Note: Attempt *FOUR* Questions from Section-II and Section-III, Section-I is Compulsory.

SECTION – I (10 x 2 = 20 MARKS)

Q.1. Write short answers of the following questions.

سوال نمبر1:   مندرجہ ذیل سوالات کے مختصر جواب لکھیں۔

1) ہندو دو دھرم میں برہما، وشنو اور مہیش جی کو کس نام سے جانا جاتا ہے؟

2) مہابھارت کتنے دن چلی؟

3) گانڈیو دھاری کون تھے؟

4) بھیم کون تھے؟

5) گائتری منتر تحریر کریں

6) اوم کی تعریف کریں

7) گاندھاری کون تھیں؟

8) پانڈو کتنے تھے؟

9) کورو کتنے تھے؟

10) مہابھارت کس میدان میں ہوئی

SECTION – II (2 x 10 = 20 MARKS)

Note: Attempt any TWO questions from the following.

نوٹ: کوئی سے دو سوالات کے جواب لکھیں۔

Q2. مہابھارت ہونے کی کوئی بھی دو وجوہات تحریر کریں؟

Q3. بھگوان شری کرشن جی کا مہابھارت میں کیا کردار ہے؟

Q4. ارجن جنگ میں کیوں پریشان تھے؟

Q5. پانڈو کتنے تھے؟ اور ان کے نام بتائیں

SECTION – III (2 x 10 = 20 MARKS)

Note: Attempt any TWO questions while Question No. 9 is compulsory.

نوٹ: کوئی سے دو سوالات کے جواب تحریر کریں۔ جبکہ سوال نمبر 9 لازمی ہے۔

Q.6 کنتی کو کیا اور دان ملا تھا؟

Q.7 بھگوت گیتا کے کتنے ابواب ہیں؟ اور ان کے نام لکھیں

Q.8 سنجے نے مہابھارت میں کیا کردار ادا کیا تھا؟

Q.9 مندرجہ ذیل ہندی الفاظ کا اردو میں ترجمہ کریں

دوس   دوش   منتری   پرتو   پرتھوی

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   (6x5=30)

a. What is the role of a **thesis statement**?

b. What is the difference between **Visual charts** and **Data maps**?

c. What are the parts of an **analytical essay**?

d. What kind of information is presented in **visual media**?

e. What is the **first step of discursive writing**?

f. What is the role of a **Hook**?

Answer the following questions.

Q. 2:   Write a paragraph of **150 words** on any one of the following topics: 12

a. My Horrible Dream   b. Pakistan is a hope

c. Social Situation in Pakistan

Q. 3:   How are **Stylistic Devices** used in a paragraph to differentiate the information, give suitable examples?   08

Q. 4:   Write the process shown in the following picture?   10
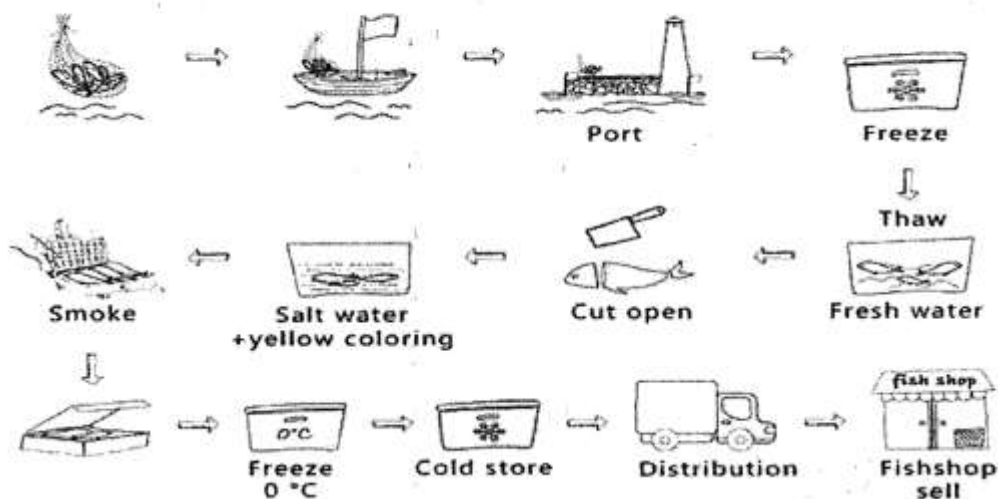
Port   Freeze

Thaw

Smoke   Salt water +yellow coloring   Cut open   Fresh water

Freeze 0 °C   Cold store   Distribution   Fishshop sell

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   **Answer the following short questions**   **(10x3=30)**

1) What type of computer is commonly used by scientists for complex calculations?
2) What are the five basic operations performed by any computer system?
3) What is HTTP? Why this protocol is used?
4) What type of input is a barcode scanner used for?
5) What is a cache memory? How it is different from a primary memory?
6) What is an operating system, and why is it essential for computers?
7) What is difference between random access and sequential access storage unit?
8) Define system software and application software with examples?
9) List down five, five input and output devices. Explain one of each.
10) How are computers applied in the field of healthcare?

Q.2.   **Answer the following questions**   **(3x10=30)**

1) Discuss how application software like MS Word, MS Excel, and MS PowerPoint has revolutionized productivity in personal, educational, and business settings. Provide examples of tasks made easier by each software.
2) What is "Disk Access Time"? Explain its three parameters with the help of diagram.
3) Differentiate between LAN, MAN, WAN on the basis of the following parameters (Name, Network range, Number of users, Speed, Devices, and Examples).

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   **Answer the following short questions:**   **(6x5=30)**

    i. Describe the essentials of communication.

    ii. Discuss the Intra-Personal communication.

    iii. What is difference between Encoding and Decoding?

    iv. Define the Folk Media.

    v. What is the difference between verbal and non verbal communication?

    vi. Enlist the barriers in communication.

Q.2.   **Answer the following questions:**   **(3x10=30)**

    i. Define the process of communication in detail.

    ii. Explain the significance of communication.

    iii. Discuss the major types of communication.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(15x2=30)**

i.   Define Social Psychology.
ii.   What are the types of Nonverbal behavior?
iii. Differentiate between self-esteem and self-efficacy.
iv.   Explain gender roles and gender identity with an example.
v.   Define Altruism.
vi.   What is pro-social behavior?
vii. Explain actor-observer bias.
viii. What is by-standard effect?
ix.   Enlist the types of bullying.
x.   What is social loafing?
xi.   How impression is formed?
xii. What is self-perception?
xiii. How to reduce cognitive dissonance?
xiv. How beliefs are formed?
xv.   Define Social Identity.

Q.2.   Answer the following questions: **(3x10=30)**

i.   What is aggression? What are the main causes that contribute to aggressive behavior in an individual?
ii.   How does conformity and obedience influence an individual's behavior and decision making?
iii. What is prejudice? And how can we eradicate prejudice in our society?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following questions.   **(5x6=30)**

i.   What is the definition of verbal communication?

ii.   How is courtesy a source of inspiration in communication?

iii.   Define oral presentation?

iv.   What are the barriers of good listening?

v.   How does body language enhance our communication?

Q.2.   Answer the following questions.   **(3x10=30)**

i.   Write a letter to the customer and inform him/ her that bank has stopped services due to biometric verification?

ii.   Write a memo to your workers in an organization and inform them about discipline rules. Give details of the policy?

iii.   Discuss listening skills in detail.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following questions.   (6x5=30)

1. How essential is a mind map for the writing process?
2. How does a student invent the writing process?
3. How can one organize information?
4. What is Paraphrasing?
5. What are the rules for Precis' Writing?
6. What are the different parts of a memo?

Q.2.   Answer the following questions.   (3x10=30)

1. Write a paragraph on the following topic:
   "It is necessary to be financially strong before getting married". (Word Limit: up to 120 Words)
2. Write a note on basic communication and presentation skills.
3. Write the first two paragraphs for a story beginning with the words:
   "The clock struck at midnight…"

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

Q.1.   Answer the following short questions.   **(5x6=30)**

سوال نمبر 1: مندرجہ ذیل سوالات کے مختصر جوابات دیں۔

    i.   What is the empowerment approach of development?

ترقی کا بااختیار ہونے کا نقطہ نظر کیا ہے؟

    ii.   List the indicators of gender equality.

صنفی مساوات کے اشارے تحریر کریں۔

    iii.   What are the gender inequalities in context of health care?

صحت کی دیکھ بھال کے تناظر میں صنفی عدم مساوات کیا ہیں؟

    iv.   What are the MDGs? List all.

MDGs کیا ہیں؟ تمام کے نام لکھیں۔

    v.   How is gender equality affected by poverty?

غربت، صنفی مساوات پر کس طرح اثر انداز ہوتی ہے؟

Q.2.   Answer the following questions.   **(3x10=30)**

سوال نمبر 2: مندرجہ ذیل سوالات کے مفصل جوابات دیں۔

    i.   Write a detailed note on the gender gap in the field of media and communication.

میڈیا اور ابلاغ کے شعبے میں صنفی مساوات پر ایک تفصیلی نوٹ تحریر کریں

    ii.   Write a detailed note on gender inequality in developing countries.

ترقی پذیر ممالک میں صنفی عدم مساوات پر تفصیلی نوٹ لکھیں۔

    iii.   Write in detail on the comparison between WID, WAD and GAD.

WID، WAD اور GAD کے تقابل پر تفصیلی نوٹ تحریر کریں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions   (6x5=30)

  i.   Write a short note on the Meteorology.

  ii.   Define rain and discuss briefly various types of rain.

  iii. Define Weathering and discuss briefly its various types.

  iv.   Write a short note on the landforms produced by Wind.

  v.   Differentiate between Warm and Cold Fronts.

  vi.   Write a short note on the Continental Shelf.

Answer the following questions.   (3x10=30)

Q.2: Write a detailed note on the configuration of the Ocean Floor.

Q.3: Write a detailed note on the Erosional and Depositional landforms produced by Valley Glacier.

Q.4: Define Humidity and write a detailed note on various types of Humanity.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions: **(15x2=30)**

i. Define Map.
ii. Enlist the main elements of a Map.
iii. What is a Chorochromatic Map?
iv. Enlist the types of Plain Scale.
v. Differentiate between Vertical interval and Horizontal equivalent on a Contour map.
vi. Give any Four examples of Thematic maps.
vii. Enlist various geographic features shown by Area symbols on map.
viii. Write down the general uses of Cadastral maps.
ix. Enlist various geographic features shown by Blue color on map.
x. What are Contours?
xi. Differentiate Between Four digit and Six digit Grid reference.
xii. Enlist the main principles of map design.
xiii. Enlist the different methods used for showing relief features.
xiv. Differentiate between Eastings and Northings.
xv. What do you about an Economic Resources Map?

Q.2. Answer the following questions: **(3x10=30)**

i. Enlist various types of maps. Also explain the importance of maps in Modern everyday life.
ii. Write a comprehensive essay on the salient features of Ordinance Survey maps of Pakistan.
iii. Write a detailed note on the Principles of Map reading.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(6x5=30)**

   i.   Define Geography and discuss briefly the scope of Geography.

   ii.   Briefly discuss the main and subbranches of Geography.

   iii.   Write a short note on the origin of the Solar System.

   iv.   Describe briefly the geographic coordinates and their characteristics.

   v.   Define major landforms and differentiate Plain, Plateau and Mountains.

   vi.   Discuss briefly the composition of the Atmosphere.

Q.2.   Answer the following questions.   **(3x10=30)**

   I.   Write a detailed note on the internal structure of the earth.

   II.   Define weather and climate and discuss in detail the elements of weather and climate.

   III.   Define Tides. How they produce and explain in detail the different types of Tides.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   **(6x5=30)**

سوال نمبر 1: درج ذیل سوالات کے مختصر جواب تحریر کریں۔

i.   Write down precisely the status of women in Mughal period.

i.   مغل دور میں خواتین کے مقام پر مختصر اً روشنی ڈالیں۔

ii.   Highlight the efforts of sir Syed Ahmed Khan for female education.

ii.   خواتین کی تعلیم کے لئے سر سید احمد خان کی کوششوں پر روشنی ڈالیں۔

iii. What is the importance of 'Bi Amma' in women's history in Pakistan?

iii. تاریخ پاکستان میں خواتین سے متعلق 'بی اماں' کے کردار کی اہمیت واضح کریں؟

iv.   Write down the name of prominent females in independence movement of Pakistan.

iv.   تحریک آزادئ پاکستان میں اس وقت کی سر گرم عمل خواتین کے نام تحریر کریں۔

v.   Write down the names of some women organization in early post- Independence period of Pakistan.

v.   حصول آزادئ پاکستان کے بعد کے ابتدائی دور میں بننے والی خواتین کی تنظیموں کے نام تحریر کریں۔

vi.   Write down the significance of first Primeministership of "Benazir Bhutto" for Pakistani women.

vi.   پاکستانی خواتین کے لئے بے "نظیر بھٹو" کی پہلی وزارتِ عظمیٰ کی کیا اہمیت ہے؟ مختصر اً تحریر کریں۔

Q.2.   Answer the following questions briefly.   **(2x15=30)**

سوال نمبر 2: درج ذیل سوالات کے جامع جوابات تحریر کریں۔

i.   Write down a comprehensive note on any one of the following topics.

   a)   Begum Raana Liaqat Ali Khan
   b)   Political process and transformation of women's

i.   درج ذیل عنوانات میں سے کسی ایک پر جامع نوٹ تحریر کریں۔

الف۔ بیگم رعنا لیاقت علی خان۔

ب۔ سیاسی عمل اور خواتین کی تحریکوں کی تشکیل نوُ

ii.   Explain Quaid-e-Azam's vision on the role of women in the nation development in the light of his verdicts.

ii.   قائدِ اعظم کے ارشادات کی روشنی میں قومی ترقی میں خواتین کے کردار پر تفصیلی روشنی ڈالیں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (6x5=30)

i.	What is Qualitative and Quantitative Biomechanical Analysis?
ii.	Explain the Types of Movements?
iii	What is Fluids ?
iv	Highlight the Terminologies used for Identification of Body Movements?
V	Explain Kinetic and Kinematics Biomechanics?
Vi	Define Speed, Distance and Displacement?

Q.2.   Answer the following questions: (3x10=30)

i.	Define Sports Biomechanics? Explain the Need and Importance of Biomechanics with Special Reference to Sports.
ii.	What is Movement? Explain the Mechanical Factors Affecting Human Body Movement?
iii	Explain in detail William Sheldon Classification of Body Types?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.　Answer the following short questions:　　　　　　　(15x2=30)

1. What are the benefits of using social media for promoting a national-level tournament?
2. What is the primary function of a slice shot in Tannis?
3. Explain the importance of forming a committee when organizing a tournament at university level?
4. What is the significance of the shooting circle in netball?
5. Which country is credited with the modern development of field hockey?
6. What are the challenges in managing multiple teams from different districts during a provincial-level tournament?
7. What is a "topspin" shot used for in tennis?
8. How does a defensive player prevent an opponent from scoring in netball?
9. What steps should be taken to manage the crowd during a provincial-level sports tournament?
10. What are the main penalties in ice hockey, and how long is the penalty time?
11. What is a "let" in tennis?
12. Why is medical support crucial during a national-level tournament?
13. What is the difference between a flat serve and a topspin serve?
14. What is the penalty for obstruction in netball?
15. What are the basic techniques used for shooting in field hockey?

Q.2.　Answer the following questions:　　　　　　　(3x10=30)

1) What are the key responsibilities of a tournament committee during the execution of a university-level sports tournament?

2) Discuss the techniques used in field hockey to control and pass the ball?

3) What are the main challenges faced when organizing a national-level tournament, and how can organizers overcome them?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

Q.1. Translate the following verses into Urdu or English Language. **(10x3=30)**

سوال نمبر1:   مندرجہ ذیل آیات مبارکہ کا اردو / انگریزی میں ترجمہ کریں۔

1. قُلِ اللّٰهُمَّ مٰلِكَ الْمُلْكِ تُؤْتِى الْمُلْكَ مَنْ تَشَآءُ وَتَنْزِعُ الْمُلْكَ مِمَّنْ تَشَآءُ وَتُعِزُّ مَنْ تَشَآءُ وَتُذِلُّ مَنْ تَشَآءُ ۖ بِيَدِكَ الْخَيْرُ ۖ اِنَّكَ عَلٰى كُلِّ شَىْءٍ قَدِيْرٌ ۔

2. قُلْ اِنْ كُنْتُمْ تُحِبُّوْنَ اللّٰهَ فَاتَّبِعُوْنِىْ يُحْبِبْكُمُ اللّٰهُ وَيَغْفِرْ لَكُمْ ذُنُوْبَكُمْ ۖ وَاللّٰهُ غَفُوْرٌ رَّحِيْمٌ ۔

3. فَوَيْلٌ لِّلَّذِيْنَ يَكْتُبُوْنَ الْكِتٰبَ بِاَيْدِيْهِمْ ثُمَّ يَقُوْلُوْنَ هٰذَا مِنْ عِنْدِ اللّٰهِ لِيَشْتَرُوْا بِهٖ ثَمَنًا قَلِيْلًا ۖ فَوَيْلٌ لَّهُمْ مِّمَّا كَتَبَتْ اَيْدِيْهِمْ وَوَيْلٌ لَّهُمْ مِّمَّا يَكْسِبُوْنَ ۔

4. وَاِذَا قِيْلَ لَهُمْ اٰمِنُوْا بِمَا اَنْزَلَ اللّٰهُ قَالُوْا نُؤْمِنُ بِمَا اُنْزِلَ عَلَيْنَا وَيَكْفُرُوْنَ بِمَا وَرَآءَهُ وَهُوَ الْحَقُّ مُصَدِّقًا لِّمَا مَعَهُمْ ۖ قُلْ فَلِمَ تَقْتُلُوْنَ اَنْبِيَآءَ اللّٰهِ مِنْ قَبْلُ اِنْ كُنْتُمْ مُّؤْمِنِيْنَ ۔

5. وَلَمَّا جَآءَهُمْ رَسُوْلٌ مِّنْ عِنْدِ اللّٰهِ مُصَدِّقٌ لِّمَا مَعَهُمْ نَبَذَ فَرِيْقٌ مِّنَ الَّذِيْنَ اُوْتُوا الْكِتٰبَ ۙ كِتٰبَ اللّٰهِ وَرَآءَ ظُهُوْرِهِمْ كَاَنَّهُمْ لَا يَعْلَمُوْنَ ۔

6. وَاِذْ قَالَ اِبْرٰهٖمُ رَبِّ اجْعَلْ هٰذَا بَلَدًا اٰمِنًا وَّارْزُقْ اَهْلَهُ مِنَ الثَّمَرٰتِ مَنْ اٰمَنَ مِنْهُمْ بِاللّٰهِ وَالْيَوْمِ الْاٰخِرِ ۖ قَالَ وَمَنْ كَفَرَ فَاُمَتِّعُهُ قَلِيْلًا ثُمَّ اَضْطَرُّهُ اِلٰى عَذَابِ النَّارِ ۖ وَبِئْسَ الْمَصِيْرُ ۔

7. فَتَقَبَّلَهَا رَبُّهَا بِقَبُوْلٍ حَسَنٍ وَّاَنْبَتَهَا نَبَاتًا حَسَنًا ۙ وَّكَفَّلَهَا زَكَرِيَّا ۖ كُلَّمَا دَخَلَ عَلَيْهَا زَكَرِيَّا الْمِحْرَابَ ۙ وَجَدَ عِنْدَهَا رِزْقًا ۚ قَالَ يٰمَرْيَمُ اَنّٰى لَكِ هٰذَا ۖ قَالَتْ هُوَ مِنْ عِنْدِ اللّٰهِ ۖ اِنَّ اللّٰهَ يَرْزُقُ مَنْ يَشَآءُ بِغَيْرِ حِسَابٍ ۔

8. رَبَّنَا اِنَّكَ جَامِعُ النَّاسِ لِيَوْمٍ لَّا رَيْبَ فِيْهِ ۖ اِنَّ اللّٰهَ لَا يُخْلِفُ الْمِيْعَادَ ۔

9. شَهِدَ اللّٰهُ اَنَّهُ لَا اِلٰهَ اِلَّا هُوَ وَالْمَلٰٓئِكَةُ وَاُولُوا الْعِلْمِ قَآئِمًا بِالْقِسْطِ ۚ لَا اِلٰهَ اِلَّا هُوَ الْعَزِيْزُ الْحَكِيْمُ ۔

10. رَبَّنَا اٰمَنَّا بِمَا اَنْزَلْتَ وَاتَّبَعْنَا الرَّسُوْلَ فَاكْتُبْنَا مَعَ الشّٰهِدِيْنَ ۔

Q.2. Use (Ten) attached pronouns with "دِین" and give their meanings. **(10x1=10)**

سوال نمبر2:   "دِین" کے ساتھ (دس) ضمائر متصلہ لگائیں اور ان کے معانی بتائیں۔

.i _____	.ii _____	.iii _____
.iv _____	.v _____	.vi _____
.vii _____	.viii _____	.ix _____
.x _____		

Q.3. Write the meanings of the following Qur'anic words. **(10x1=10)**

سوال نمبر3:   مندرجہ ذیل قرآنی الفاظ کے اردو / انگریزی میں معانی لکھیں۔

(1) سبیل (2) صلاۃ (3) سمیع (4) علیم (5) یوم (6) لیل (7) نہار (8) خاسرین (9) ذلک (10) ہُم

Q.4. Write the plural with the given words. **(10x1=10)**

سوال نمبر4:   مندرجہ ذیل الفاظ کی مدد سے واحد کی جمع لکھیں۔

مَوْتٌ - اَلَّذِیْ - صَالِحٌ - یَدٌّ - رَسُوْلٌ - اَنَا - غَافِلٌ - شَیْطَان - یُؤْمِن - یُفْسِدُ -

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions.   (6x5=30)

    i. Write down the nature of International Relations.

    ii. Define Nationalism.

    iii. Write down briefly on Idealism.

    iv. Write down a few lines on "End of History".

    v. What is meant by Diplomacy?

    vi. Write down any two tangible elements of power.

Q.2. Answer the following questions: (3x10=30)

    i. Discuss scope of international Relations.

    ii. Elaborate the techniques of maintaining Balance of Power.

    iii. Give an analysis on Clash of Civilization.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   **Answer the following short questions.**   **(6x5=30)**

    i.   "International Relations" as a separate discipline.

    ii.   Explain the "Evolution" of State System.

    iii.   How we can define National Interests?

    iv.   Explain the concept of "Power" according to Neo-Realist School of Thought.

    v.   What is National Power?

    vi.   Globalization and Regionalism.

Q.2.   **Answer the following question.**   **(3x10=30)**

    i.   Describe the evolutionary process through which International Relations acquired the status of an academic discipline.

    ii.   Discuss Diplomacy and define its' kinds. Explain diplomatic means which can help to resolve disputes and conflicts in the world.

    iii.   How effective United Nations (UN) in dealing with the global problems? Discuss

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

Q.1.   Answer the following short questions   (6x5=30)

سوال نمبر1:   درج ذیل سوالات کے مختصر جوابات تحریر کریں۔

محکمات اور متشابہات سے کیا مراد ہے؟   .1

1.   What is meant by Muhkamat and Mutashabihat?

سورۃ آل عمران میں بیان کردہ "حب الشہوات" کون کون سی ہیں؟   .2

2.   What are the "حب الشہوات" (love of desires) mentioned in Surah Aal-e-Imran?

زندہ سے مردہ اور مردہ سے زندہ کو پیدا کرنے کی مثال بیان کریں؟   .3

3.   Provide an example of creating the living from the dead and the dead from the living.

سورۃ النحل کی روشنی میں متقی لوگوں کے ساتھ روز محشر کیسے آیا جائے گا؟   .4

4.   In light of Surah Al-Nahl, how will pious people be treated on the Day of Judgment?

مباہلہ کسے کہتے ہیں اور یہ کن لوگوں سے کیا گیا؟   .5

5.   What is Mubahila, and with whom was it conducted?

میثاق النبیین سے مراد کون سا عہد ہے وضاحت کریں؟   .6

6.   Explain the term Mithaq al-Nabiyyin (Covenant of the Prophets).

Q.2.   Answer the following questions.   (3x10=30)

سوال نمبر2: درج ذیل سوالات کے جامع جواب تحریر کریں۔

"قُلْ اِنْ كُنْتُمْ تُحِبُّوْنَ اللّٰهَ فَاتَّبِعُوْنِیْ یُحْبِبْكُمُ اللّٰهُ وَ یَغْفِرْ لَكُمْ ذُنُوْبَكُمْ" کی روشنی میں محبت رسول ﷺ پر مفصل نوٹ تحریر کریں؟   .1

1.   In light of the verse "قُلْ اِنْ كُنْتُمْ تُحِبُّوْنَ اللّٰهَ فَاتَّبِعُوْنِیْ یُحْبِبْكُمُ اللّٰهُ وَ یَغْفِرْ لَكُمْ ذُنُوْبَكُمْ" write a detailed note on the love for the Prophet (PBUH).

"اِنَّا اَنْزَلْنَا اِلَیْكَ الذِّكْرَ لِتُبَیِّنَ لِلنَّاسِ" کی روشنی میں حجیت حدیث پر جامع نوٹ تحریر کریں؟   .2

2.   In light of "اِنَّا اَنْزَلْنَا اِلَیْكَ الذِّكْرَ لِتُبَیِّنَ لِلنَّاسِ", write a comprehensive note on the authority of Hadith.

سورۃ آل عمران اور سورۃ النحل میں دنیوی و اخروی زندگی کا جو تقابل پیش کیا گیا ہے اس کو عمدہ انداز میں تحریر کریں؟   .3

3.   Compare the worldly and eternal life as presented in Surah Aal-e-Imran and Surah Al-Nahl in a meaningful way.

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – Spring 2025

Roll No. ....

Time: 3 Hrs. Marks: 60

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اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

سوال نمبر1:   مندرجہ ذیل سوالات کے جواب لکھیں۔   (6x5=30)

1۔ ریاض الصالحین کی "کتاب الفضائل" کی روشنی میں قرآن مجید کے چار فضائل بیان کریں

2۔ "کتاب البیوع" کی روشنی میں چار حلال بیوع کا تعارف پیش کریں۔

3۔ اللؤلؤ والمرجان کا تعارف لکھئے۔

4۔ "کتاب البر والصلۃ" کی روشنی میں رشتہ داروں کے کوئی سے چار حقوق بیان کریں۔

5۔ "کتاب الآداب" میں کسی کے گھر جانے کی اجازت کے آداب بیان کیجئے۔

6۔ کتاب الامارہ" کی روشنی میں مسلم حکمران کے چار فرائض تحریر کریں۔

سوال نمبر2:   مندرجہ ذیل سوالات کے جواب لکھیں۔

1۔ جہاد کی اہمیت و فضیلت پر مضمون لکھئے۔   **(10)**

2: درج ذیل حدیث کا ترجمہ و تشریح کریں۔   (6+4=10)

عن عبد الله بن عمرو : أن رجلا سأل رسول الله صلى الله عليه وسلم : أي الإسلام خير ؟ قال :" تطعم الطعام وتقرأ السلام على من عرفت ومن لم تعرف "

3: درج ذیل حدیث کا ترجمہ و تشریح کریں۔   (6+4=10)

قَالَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ: " البَيِّعَانِ بِالخِيَارِ مَا لَمْ يَتَفَرَّقَا، أَوْ قَالَ:حَتَّى يَتَفَرَّقَا فَإِنْ صَدَقَا وَبَيَّنَا بُورِكَ لَهُمَا فِي بَيْعِهِمَا، وَإِنْ كَتَمَا وَكَذَبَا مُحِقَتْ بَرَكَةُ بَيْعِهِمَا "

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اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

Q.1. Write short answers of the following. (15x2=30)

سوال نمبر 1: درج ذیل سوالات کے مختصر جواب تحریر کریں۔

(1) اسوۂ حسنہ سے کیا مراد ہے؟

1. What is meant by Aswat Hasna?

(2) حضرت اسماعیل علیہ السلام کے کتنے بیٹے تھے؟ دو کے نام لکھیے۔

2. How many sons did Hazrat Ismail (RA) have? Write the names of two?

(3) عربوں نے کن جانوروں کی پیٹھ اپنے لیے حرام کر لی تھی؟ نام تحریر کیجیے۔

3. The backs of which animals were prohibited by the Arabs? Write the name.

(4) پہلی وحی کی آیات مبارکہ کا ترجمہ تحریر کیجیے۔

4. Write the translation of the verses of the first revelation.

(5) حضرت حلیمہ سعدیہ کی نسبت سے نبی ﷺ کے رضاعی بہن بھائیوں کے نام لکھیے۔

5. Write the names of foster siblings of the Holy Prophet (SAW) from Hazrat Halima Sadia.

(6) حضرت جبرائیل علیہ السلام کس صحابی کی شکل میں وحی لے کر حاضر ہوتے تھے؟

6. Hazrat Jibraeel (AS) used to bring revelation in resemblance with which companion of Holy Prophet (SAW)?

(7) مقاطعہ قریش نبوت کے کس سال پیش آیا؟ نیز اس کی اہم وجہ تحریر کیجیے؟

7. In what year did the boycott of Quraysh take place? Also write down its important reason.

(8) نجاشی کون تھا اور کس مذہب کا پیروکار تھا؟

8. Who was Najashi and what was his religion?

(9) مدینہ منورہ کی طرف رسول اللہ ﷺ نے سب سے پہلے کس صحابی کو داعی بنا کر بھیجا؟

9. Which Companion was sent by Holy Prophet (SAW) as the first preacher of Islam to Madinah?

(10) نبی ﷺ کے چچاؤں کے نام لکھیے۔

10. Describe the names of uncles of Holy Prophet (SAW).

(11) مکہ میں دعوت نبوی ﷺ کے اہم نکات لکھیے۔ (صرف عنوانات)

11. Write down the important points of preaching of Holy Prophet (SAW) in Makkah.

(12) ہجرت مدینہ کے بعد نبی ﷺ نے کس مسجد کی بنیاد رکھی؟

12. After the migration to Madinah, which mosque was founded by Holy Prophet (SAW)?

(13) بیعت رضوان کی وضاحت کیجیے۔

13. Explain the Bait-e-Rizwan.

(14) خطبہ حجۃ الوداع کے دو اہم نکات لکھیے۔

14. Write down the two salient features of Last Sermon of Holy Prophet (SAW).

(15) الرحیق المختوم اور سیرت النبی ﷺ کے مصنفین کے اسماء گرامی تحریر کیجیے۔

15. Write down the names of authors of Ar-Raheeq Al-Makhtum and Seerat- un- Nabi (SAW).

Q.2 Answer the following questions. (3x10=30)

سوال نمبر 2: درج ذیل سوالات کے جوابات تحریر کریں۔

1: سیرت النبی ﷺ کے بنیادی ماخذ پر تفصیلاً روشنی ڈالیے۔

1. Describe the basic sources of Seerat-un-Nabi (SAW) in detail.

2: ہجرت مدینہ کی وجوہات، واقعات اور نتائج پر تفصیلاً بحث کیجیے۔

2. Discuss the causes, happenings and consequences of the migration to Madinah in detail.

3: صلح نامہ حدیبیہ کی وجوہات اور شرائط بیان کیجیے۔

3. Describe the causes and clauses of Pact of Al-Hudaybiyah.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

سوال نمبر1۔ درج ذیل اجزاء کے مختصر جوابات دیجئے۔ (15x2=30)

1۔ حدیث جبریل کے مطابق قیامت کی نشانیاں لکھیں؟
2۔ وبالاخرۃ ھم یوقنون کا ترجمہ لکھیں؟
3۔ اسلامی تہذیب کے عوامل لکھیں۔
4۔ سورہ حجرات کے مطابق دو آداب نبوی لکھیں؟
5۔ زکوۃ اور عشر میں کیا فرق ہے؟
6۔ نبی کریم ﷺ کی چار ازواج مطہرات کے نام لکھیں۔
7۔ حدیث کے مطابق آپ ﷺ نے کن چار چیزوں سے پناہ مانگی؟
8۔ آپ ﷺ نے کس صحابی کو بہترین قاری قرار دیا؟
9۔ عشرہ مبشرہ سے کیا مراد ہے؟ چار کے نام لکھیں۔
10۔ صحاح ستہ سے کیا مراد ہے؟
11۔ تبرج الجاھلیہ سے کیا مراد ہے؟
12۔ ازواج مطہرات کے کوئی دو امتیازات سورۃ احزاب کی روشنی میں لکھیں۔
13۔ حدیث کی روشنی میں سچے تاجر کا انجام کن لوگوں میں ہو گا؟
14۔ حدیث میں بیان کردہ برائی کو روکنے کے تین طریقے بیان کریں؟
15۔ حدیث میں برائی کو روکنے کے لیے ایمان سے تین درجات بیان کیے گئے ہیں؟

درج ذیل سوالات کے تفصیلی جواب دیجئے۔ (3x10=30)

سوال نمبر 2: درج ذیل آیت مبارکہ کا ترجمہ اور تشریح کریں۔ 6+4=10

اِنَّ اللّٰهَ وَمَلٰٓئِكَتَهٗ يُصَلُّوْنَ عَلَى النَّبِيِّ ۚ يٰۤاَيُّهَا الَّذِيْنَ اٰمَنُوْا صَلُّوْا عَلَيْهِ وَسَلِّمُوْا تَسْلِيْمًا

سوال نمبر 3: صلح حدیبیہ کی شرائط اور اس کی نتائج پر مفصل نوٹ لکھیں؟
سوال نمبر 4: اسلامی تہذیب اور مغربی تہذیب کا فرق واضح کریں۔

Ethics (for Non-Muslim Candidates)

Note: Answer the following questions. (3x20=60)

نوٹ: مندرجہ ذیل سوالات کے جواب تحریر کیجئے۔

سوال نمبر 1: مسیحیت کی روشنی میں "تصور فلاح "پر مضمون لکھیں۔

سوال نمبر2: یہودیت کا تفصیلی تعارف پیش کریں۔

سوال نمبر3: بدھ مت کی اخلاقی تعلیمات پر جامع نوٹ لکھیں۔

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<div dir="rtl">

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

</div>

Q 1.   Answer the following short questions.   **(6x5=30)**

<div dir="rtl">

سوال نمبر1:   درج ذیل سوالوں کے مختصر جواب دیں۔

</div>

i.   Write the three periods of compilation of the Holy Quran?

<div dir="rtl">

i.   قرآن مجید کے جمع و تدوین کے تین ادوار لکھئے۔

</div>

ii.   Write the name of three Books of Hadith from (صحاحِ ستّہ).

<div dir="rtl">

ii.   صحاحِ ستّہ میں سے تین کتب حدیث کے نام تحریر کریں۔

</div>

iii.   Briefly explain, what is meant by (حلف الفضول).

<div dir="rtl">

iii.   حلف الفضول سے کیا مراد ہے؟

</div>

iv.   Briefly shed light on four events in the Makkah life of the Holy prophet (PHUH).

<div dir="rtl">

iv.   نبی کریم صلی اللہ علیہ وسلم کی مکی زندگی کے چار واقعات پر روشنی ڈالئے۔

</div>

v.   Write the two initial conditions of the Covenant of Madina.

<div dir="rtl">

v.   میثاق مدینہ کی دو ابتدائی شرائط تحریر کریں۔

</div>

vi.   Write four characteristics of social system of Islam?

<div dir="rtl">

vi.   اسلام کے معاشرتی نظام کی چار خوبیاں تحریر کریں۔

</div>

Q 2.   Answer the following questions.   **(3x10=30)**

<div dir="rtl">

سوال نمبر2:   مندرجہ ذیل سوالوں کے جواب دیں۔

</div>

i.   Write the terms and signification of the Peace of (صلح حدیبیہ)?

<div dir="rtl">

i.   صلح حدیبیہ کی شرائط اور اہمیت تحریر کریں؟

</div>

ii.   Highlight the important points and importance of the (خطبہ حجتہ الوداع)?

<div dir="rtl">

ii.   خطبہ حجتہ الوداع کے نکات اور اہمیت پر روشنی ڈالئے؟

</div>

iii.   Write the characteristics of Islamic civilization?

<div dir="rtl">

iii.   اسلامی تہذیب کے خصائص تحریر کریں؟

</div>

Ethics (for Non-Muslim Candidates)

Q 1.   Answer the following questions.   (3x20=60)

<div dir="rtl">

سوال نمبر1:   مندرجہ ذیل سوالوں کے جواب دیں۔

</div>

i.   Intricate the relation between Ethics and Religions.

<div dir="rtl">

i.   اخلاقیات اور مذہب کے درمیان تعلق کی وضاحت کریں۔

</div>

ii.   Define the ethical teachings of Christianity.

<div dir="rtl">

ii.   عسائیت کی اخلاقی تعلمات بیان کریں۔

</div>

iii.   Write a note of the concept of good and evil in Ethics.

<div dir="rtl">

iii.   اخلاقیات میں اچھائی اور برائی کے تصور پر ایک تفصیلی مضمون تحریر کریں۔

</div>

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

سوال نمبر 1: درج ذیل سوالات کے مختصر جوابات دیں؟

Question No. 1: Give short answers to the following questions: **(6x5=30)**

i.   سورۃ الفرقان کی روشنی میں عبادالرحمن کی کوئی سی پانچ صفات لکھیں۔

i. Write any five qualities of ʿIbād al-Raḥmān (Servants of the Most Merciful) in the light of Surah Al-Furqan.

ii.   ایمانیات سے کیا مراد ہے؟ ایمان کے بنیادی ارکان تحریر کریں۔

ii. What is meant by Īmāniyyāt (matters of faith)? Write the basic pillars of faith

iii.   صلح حدیبیہ کی کوئی سی تین شرائط لکھیں۔

iii. Write any three conditions of the Treaty of Hudaybiyyah.

iv.   غیبت اور بہتان میں کیا فرق ہے؟ مثال سے واضح کریں۔

iv. What is the difference between ghībah (backbiting) and buhtān (slander)? Explain with an example.

v.   صحاح ستہ سے کیا مراد ہے؟ نیز ان کے مؤلفین کے نام لکھیں۔

v. What is meant by Ṣiḥāḥ Sittah (the Six Authentic Books of Hadith)? Also write the names of their compilers.

vi.   فقہ اسلامی کے بنیادی مآخذ کتنے ہیں؟ ان کے نام لکھیں۔

vi How many primary sources of Islamic jurisprudence (Fiqh) are there? Write their names.

Q.2.   Answer the following questions.   (3x10=30)

<div dir="rtl">

سوال نمبر 2۔ مندرجہ ذیل سوالات کے مفصل جوابات دیجئے۔

i. اسلامی تہذیب کے انسانی معاشرے پر کیا اثرات مرتب ہوئے؟ سیر حاصل بحث کریں۔

</div>

   i.   What impact did Islamic civilization have on human society? Discuss in detail.

<div dir="rtl">

ii. ہجرت مدینہ کے اسباب و نتائج پر نوٹ لکھیں۔

</div>

   ii. Write a note on the causes and outcomes of the Hijrah (Migration) to Madinah.

<div dir="rtl">

iii. اصلاح معاشرہ کے لیے اسلام کے رہنما اصول بیان کریں۔

</div>

   iii. State the guiding principles of Islam for the reform of society.

Ethics (for Non-Muslim Candidates)

Note: Answer the following questions.   (3x20=60)

<div dir="rtl">

نوٹ: درج ذیل سوالات کے تفصیلی جواب دیجیے۔

سوال نمبر 1:   مسیحیت کی روشنی میں "تصور فلاح "پر مضمون لکھیں۔

سوال نمبر 2:   یہودیت تفصیلی تعارف پیش کریں۔

سوال نمبر 3:   بدھمت کی اخلاقی تعلیمات پر جامع نوٹ لکھیں۔

</div>

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. **Give precise and short answers of the following:**   **(5x6=30)**

Program 1

```cpp
int main()
{
      int x = 20;
      cout << --x - 2 << ", ";
      cout << x++;

      return EXIT_SUCCESS;
}
```

Program 2

```cpp
int main()
{
      int marks = 50;
      if (marks > 50 && marks < 100)
            cout << "Pass";
      else
            cout << "Fail";

      return EXIT_SUCCESS;
}
```

Program 3

```cpp
int main()
{
      int y = 2;
      switch (y)
      {
            case 1:
                  cout << "one" << endl;
            case 2:
                  cout << "two" << endl;
                  break;
            case 3:
                  cout << "three" << endl;
            default:
                  cout << "four";
      }

      return EXIT_SUCCESS;
}
```

Program 4

```cpp
void foo(int* x, int y)
{
      (*x) = (*x) + (*x);
      y = y + y;
}

int main()
{
      int a = 3, b = 2;
      foo(&a, b);
      cout << a << " " << b << endl;

      return EXIT_SUCCESS;
}
```

Program 5

```
int main()
{
        int X[] = { 5, 20, 25, 50, 100 };
        int* p = X;

        while (*p < 100)
        {
                if (*p % 2 != 0)
                        *p = *p + 1;
                else
                        *p = *p + 3;

                p++;
        }

        for (int I = 4; I >= 1; I--)
        {
                cout << X[I] << "*";

                if (I % 2 == 0)
                        cout << endl;
        }

        cout << X[0] * 2 << endl;

        return EXIT_SUCCESS;
}
```

Q.2.   Answer the following questions: (3x10=30)

1) Write a program that calculates the **surface area of a hemisphere**. The program should take the **radius** of the hemisphere as input from the user and display the calculated surface area.

The formula for the **surface area of a hemisphere** is:

$$Surface\ Area = 3\pi r^2$$

where r is the **radius** of the base, and π (**pi**) is approximately 3.14159.

2) Write a function named **numberToRoman** that takes an **integer (1-10)** representing a number and returns the corresponding **Roman numeral** as a string (e.g., "I", "II", etc.). If the input is outside the range of 1 to 10, the function should return an **appropriate message**, such as "Invalid number."

For example:

- For input 1, the function should return "I".
- For input 5, the function should return "V".
- For input 11, the function should return "**Invalid number**".

3) Write a function named **flipSentence** that takes the following arguments:

1. An **array of characters** representing a sentence (including spaces).
2. An **integer** representing the number of characters in the array.

The function must **reverse the order** of the characters in the array (without creating a new array).

For example, if the array passed to the function contains the following values:

Index:	0	1	2	3	4	5	6	7
Values:	H	e	l	l	o		H	i

After the function executes, the array should be modified to look like this:

Index:	0	1	2	3	4	5	6	7
Values:	i	H		o	l	l	e	H

The function **should not return any value**.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(6x5=30)**

a) Convert the equation $(243)_x = (123)_8$ to decimal number system, and then find base x.

b)
   i) Convert $(A7.B)_{16}$ to binary number system.
   ii) Let $A = 101101$ and $B = 101011$, perform A-B using 2's complement.

c) Prove that $(x+y).(x'+z).(y+z) = (x+y).(x'+z)$ using truth table.

d) Design a combinational circuit that multiplies two 2-bit numbers A_1A_0 and B_1B_0 to produce a 4-bit product $P_3P_2P_1P_0$. Use AND gates and block diagrams half adders for the construction of the circuit.

e) Draw a truth table with three inputs and three outputs, such that the outputs are the gray codes for the given inputs.

f) Simplify $F(x,y,z) = (x+y').(x'+z').(y'+z')$ using K-map and then implement it using NOR gates only.

Answer the following questions: **(3x10=30)**

Question#2:

In a certain chemical processing plant, a liquid chemical is used in a manufacturing process. The chemical is stored in three different tanks. Each tank has a sensor which sends a logic-1 upon getting empty, otherwise it sends a logic-0. A red LED should turn ON, if any two of the three tanks gets empty. Design a combinational circuit of the chemical processing plant.

Question#3:

What is decoder and multiplexer? Show the constructions of 3x8 decoder using two 2x4 decoders. Implement $F (A,B,C) = \sum (1, 2, 4, 6)$ using i) decoder ii) 4x1 MUX by keeping B,C as selection inputs of MUX.

Question#4:

Draw the logic circuit diagram, characteristic table, excitation table of JK flip flop. Show step-by-step construction of 2-bit UP counter using JK flop flops.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Solve the following.   **(10x3=30)**

.1: Find the centre and radius of the sphere $x^2 + y^2 + z^2 + 4x - 4z = 0$.

.2 Find a unit vector u in the direction of the vector from $P_1(2,0,1)$ to $P_2(3,2,1)$.

.3 Find the vector projection of a force $F = 5i + 2j$ onto $v = i - 3j$ and the scalar component of F in the direction of v.

.4 Find the point where the line $x = 1 - t$, $y = 3t$, $z = 1 + t$ intersects the plane $2x - y + 3z = 6$

.5 Find the velocity, speed and acceleration of a particle whose motion in space is given by vector $r(t) = (t + 1)i + (t^2 - 1)j + 2t\,k$.

.6 Find the point on the curve $r(t) = (5\sin t)i + (5\cos t)j + 12t\,k$ at a distance 26π units along the curve from point $(0,5,0)$ in the direction of increasing arc length.

.7 Find **T, N and $\mathcal{K}$** for space curves $r(t) = (e^t \cos t)i + (e^t \sin t)j$.

.8 Find the tangent plane and normal line of the surface $f(x,y,z) = x^2 + y^2 - 2xy - x + 3y - z + 4 = 0$ at the point $P_0(2,-3,18)$.

.9 Find the partial derivative of the function with respect to each variable

$$g(r,\theta) = r\cos\theta + r\sin\theta$$

.10 Find second order partial derivative of the function

$$f(x,y) = x + xy - 5x^3 + \ln(x^2 + 1).$$

Q.2.   Solve the following.   **(3x10=30)**

.1 Find the curvature for the helix vector $r(t) = (3\cos t)i + (3\sin t)j + 2t\,k$.

.2 The plane $x + y + z = 1$ cuts the cylinder $x^2 + y^2 = 1$. Find the points on the ellipse that lie closest to and farthest from the origin.

.3 Evaluate $\int_1^2 \int_{1/y}^{y} \sqrt{\frac{y}{x}}\, e^{\sqrt{xy}} dx\, dy$.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Solve the following.

(i)	A president and a treasurer are to be chosen from a student club consisting of 50 people. How many different choices of officers are possible a) there is no restrictions b) 'A' will only serve if he is president	(5)
(ii)	Explain the properties of the Mean of the data.	(5)
(iii)	Calculate the probability of drawing an ace or a spade from a pack of cards.	(5)
(iv)	Give properties of Normal distribution.	(5)
(v)	Define standard deviation and co-efficient of variation.	(2+3)
(vi)	Write a note on Probability density function.	(5)

Solve the following.

Q.2	The distribution of the group of persons according to age is given below Age in years: 1-4, 5-9, 10-19, 20-29, 30-39, 40-59, 60-79 No. of persons: 10, 11, 12, 22, 18, 8, 7 Estimate the mean, median.	(6)
Q.3	A pair of dice are thrown. Find the probability of getting a total of either 5 or 11.	(6)
Q.4	An event has the probability $p = \frac{3}{8}$. Find the complete binomial distribution for $n = 5$ trials.	(6)
Q.5	Given a normal distribution with $\mu = 35 \ and \ \sigma = 9$. Then find (i) The value of X that has 70% of the normal curve area to the right. (ii) $P(32 \leq X \leq 39)$	(3+3)
Q.6	The average zinc concentration recovered from a sample of zinc measurements in 36 different locations is found to be 2.6 grams per milliliter. Find the 95% and 99% confidence intervals for the mean zinc concentration in the river. Assume that the population standard deviation is 0.3.	(6)

Inner Q.2 table:

Age in years	1-4	5-9	10-19	20-29	30-39	40-59	60-79
No. of persons	10	11	12	22	18	8	7

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Solve the following.   (6x5=30)

i.   For what value of c will the following equation represent a pair of straight lines

$$cx^2 - 10xy + 12y^2 + 5x - 16y - 3 = 0.$$

ii.   Find the angle between the following pair of lines

$$x^2 - 2xy\tan\theta - y^2 = 0$$

iii.   Find equation of the asymptotes of the curve $x^2y^2 = 12(x - 3)$.

iv.   Find points of relative extreme of the curve $f(x) = (x - 1)(x - 2)(x - 3)$.

v.   Express the equation in cylindrical and spherical coordinates $(x + y)^2 - z^2 + 4 = 0$.

vi.   Show that the straight line $\frac{x+3}{2} = \frac{y-4}{-7} = \frac{z}{3}$ is parallel to the plane $4x + 2y + 2z = 9$.

Q.2.   Solve the following.   (3x10=30)

I.   Prove that the straight lines $\frac{x-1}{2} = \frac{y+1}{-3} = \frac{z+10}{8}$ and $\frac{x-4}{1} = \frac{y+3}{-4} = \frac{z+1}{7}$ intersect. Also find the point of intersection and the plane through them.

II.   Analyze and graph the conic represented by the equation $xy + x - 2y + 3 = 0$.

III.   Find the envelope of the family of the straight lines joining the extremities of a pair of conjugate diameters of an ellipse.

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THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.　Solve the following.　　　　　　　　　　　　　　**(6x5=30)**

1. The position of a particle moving along an ellipse is given by $\vec{r} = a \cos t\, \hat{i} + b \sin t\, \hat{j}$. If $a > b$, find the position of the particle where its velocity has a maximum or minimum magnitude.

2. A uniform rod AB is 4 ft long and weight 6 lb and weights are attached to it as follows. 1 lb at A, 2 lb at 1 ft from A and 3 lb at 2 ft from A, 4 lb at 3 ft from A at 5 lb at B. Find the distance from A of the center of gravity of the system.

3. A particle describes the curve $r'' = A \cos n\theta + A \sin n\theta = a^n$ under a force to the pole. Check whether the force can be stated as $F \propto \dfrac{1}{r^{2n+3}}$.

4. Find the distance traveled by a particle moving in straight line with uniform acceleration in the nth unit of time. Also, if x, y and z be distances covered in the lth, mth and nth units of time respectively, then show that

   - $(m - n)x + (n - l)y + (l - m)z = 0$
   - $l(y - z) + m(z - x) + n(x - y) = 0$

5. A point moves in a straight line starting from rest from a distance a to a center of attraction, its acceleration being $\dfrac{\mu}{r^3}$. Show that the time required to reach the center is $\dfrac{a}{\sqrt{\mu}}$.

6. Two particles travel along a straight line. Both start at the same time and are accelerated uniformly at different rates. The motion is such that when a particle attains the maximum velocity v, its motion is retarded uniformly. The two particles come to rest simultaneously at a distance x from the starting point. If the acceleration of the first is a and that of the second is $\dfrac{1}{2}a$, find the distance between the points where the two particles attain their maximum velocities.

Q.2.　Solve the following　　　　　　　　　　　　　　**(3x10=30)**

1. A battleship is steaming ahead with speed v, and a gun is mounted on the battleship so as to point straight backwards, and is set at an angle of elevation α. If v_0 is the speed of projection (relative to the gun) show that the range is

$$\frac{2v_0}{g} \sin \alpha (v_0 \cos \alpha - v).$$

Prove also that the angle of elevation for maximum range is

$$\cos^{-1}\left(\frac{v + \sqrt{v^2 + 8v_0^2}}{4v_0} \right).$$

2. A particle is projected vertically upwards with a velocity $\sqrt{2gh}$ and another is let fall from a height h at the same time. Find the height of the point where they meet each other.

3. If the path of a particle moving in plane is the equiangular spiral $r = a \exp(\theta \cot \alpha)$ and if the radius vector to the particle as a constant angular velocity. Show that the resultant acceleration of the particle makes an angle 2α with the radius vector and is of magnitude $\dfrac{v^2}{r}$, where v is the speed of the particle.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Solve the following.   (6x5=30)

I.   Define function and its inverse function. Also, find the inverse of a function f mapping from $\mathbb{R}$ into $\mathbb{R}$ defined by $f(x) = (x-2)^3$.

II.   Proof by contradiction: "If $3n + 2$ is odd, then n is odd."

III.   How can this English sentence be translated into a logical expression? "You cannot ride the roller coaster if you are under 4 feet tall unless you are older than 16 years old."

IV.   Find the recursive relation for a sequence $\{a_n\}, n = 1,2,3, \dots$ if $a_n = 2n + e^n$.

V.   What is the minimum number of statements required in a discrete mathematics class to be sure that at least six will receive same grade if there are 5 possible grades A, B, C, D and F.

VI.   Show that the relation R on set $\{0, 1, 2, 3\}$ is a partial order set. where, $R = \{(0,0), (1,1), (1,2), (1,3), (2,2), (2,3), (3,3)\}$.

Q.2.   Solve the following   (3x10=30)

I.   Use Principal of Mathematical induction: Prove that $10^n + 3.4^{n+2} + 5$ is divisible by 9 for $n \in \mathbb{N}$.

II.   For the set $S = \{0, 1, 2, 3\}$, determine the following relations:
$R_1 = \{(m, n) \mid m + n = 3, \ m, n \in S\}$ and $R_2 = \{(m, n) \mid m \le n, \ m, n \in S\}$
Also Calculate i) $R_1 \cap R_2$ ii) $R_1 \cup R_2$ iii) $R_1 \oplus R_2$

III.   In a survey of 120 people, it was found that: 65 read *Newsweek(N)* magazine, 42 read *Fortune(F)*, 45 read *Time(T)*, 20 read both *Newsweek* and *Time*, 25 read both *Newsweek* and *Fortune*, 15 read both *Time* and *Fortune*, 8 read all three magazines.
  a)   Draw the Venn Diagram.
  b)   Find the number of people who only read Fortune.
  c)   Find the number of people who do not read any magazine.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Solve the following.   **(6x5=30)**

1. If A and B are square matrices of the same order, then explain why in general $(A+B)(A-B) \neq A^2 - B^2$

2. Solve $\sqrt{x+7} + \sqrt{x+2} = \sqrt{6x+13}$

3. Find the first four terms of the arithmetic sequence, if $a_5 = 17$ and $a_9 = 37$.

4. Use mathematical induction to check whether the following relation holds for every positive integer n.

$$1 + 4 + 7 + ... + (3n-2) = \frac{n(3n-1)}{2}$$

5. Write the sets $A = \{0, \pm 1, \pm 2, ..., \pm 1000\}$ and $B = \{0, -1, -2, ..., -500\}$ in set builder notation.

6. Check whether the following relation holds (without expansion)

$$\begin{vmatrix} \alpha & \beta+\gamma & 1 \\ \beta & \gamma+\alpha & 1 \\ \gamma & \alpha+\beta & 1 \end{vmatrix} = 0.$$

Q.2.   Solve the following.   **(3x10=30)**

1. Evaluate $(1 + \omega - \omega^2)(1 - \omega + \omega^2)$.

2. The ratio of the sums of n terms of two series in arithmetic progression is $3n+2 : n+1$. Find the ratio of their $8th$ terms.

3. Evaluate the following

$$\begin{vmatrix} -3 & 9 & 1 & 1 \\ 0 & 3 & -1 & 2 \\ 9 & 7 & -1 & 1 \\ -2 & 0 & 1 & -1 \end{vmatrix}$$

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – Spring 2025

Paper: Fundamental App. of Calculus / Univ. Optional (Compl)
Course Code: MATH-116

Roll No. ....

Time: 3 Hrs. Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Solve the following.

(i)	Find the value of x if: $|4x + 6| = 2x + 3$.	(5)
(ii)	Evaluate the limit: $\lim\limits_{x \to -2} \left(\dfrac{-2x-4}{x^3+2x^2} \right)$.	(5)
(iii)	For what values of q the function $f(x) = \begin{cases} x^2 - 1 & , x < 3 \\ 2qx & , x \geq 3 \end{cases}$ is continuous everywhere?	(5)
(iv)	Find derivative of f(x) if : $f(x) = (x^2 + 1)^{2/5}$	(5)
(v)	Find $\dfrac{dy}{dx}$ if $y = x\sin\sqrt{x}$.	(5)
(vi)	Evaluate the Integral $\int x\sin^{-1}x \, dx$.	(5)

Q.2. Solve the following.

1	Solve the Inequality : $\left| \dfrac{7x+5}{3x-4} \right| < 5$.	(6)
2	Evaluate the limit of : $\lim\limits_{y \to 3} \sqrt{\dfrac{x^2 - x - 6}{y^2 - 9}}$.	(6)
3	Find derivative of f(x) if : $f(x) = \dfrac{\tan x}{1+\tan x}$.	(6)
4.	Find the Integral $\int \dfrac{(1+\sqrt{x})^3}{\sqrt{x}} \, dx$.	(6)
5.	Evaluate the given Integral $\int \sqrt{1 + \cos 4x} \, dx$.	(6)

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Solve the following.   **(5x6=30)**

i. Find $\frac{d^2y}{dx^2}$ if $x^3 + y^3 = 3axy$.

ii. Show that the straight line $\frac{x+3}{2} = \frac{y-4}{-7} = \frac{z}{3}$ is parallel to the plane $4x + 2y + 2z = 9$.

iii. Express the equation $x^2 + y^2 + 2z = 6$ in cylindrical and spherical coordinates.

iv. Verify Euler's theorem for $u = x^n \ln\left(\frac{y}{x}\right)$

v. Evaluate $\int_1^2 \int_0^{y^{3/2}} \frac{x}{y^2} dy dx$.

Solve the following.   **(3x10=30)**

Q.2 Find equations of the tangent plane and normal line at any point $P(x_1, y_1, z_1)$ to the ellipsoid $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$.

Q.3 Find area bounded by the parabola $y = x^2$ and the straight line $y = 2x + 3$.

Q.4 Find the extrema of the $f(x,y) = \cos x + \cos y + \cos(x + y)$.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(5x6=30)**

(i)   Solve the inequality $x^{-2} - 4x^{-1} + 4 > 0$.

(ii)   Evaluate $\lim\limits_{x \to -\infty} \dfrac{\sqrt{x^2 + 2}}{3x - 4}$.

(iii) Find the derivative w.r.t x $y = \sin\sqrt{\dfrac{1 + 2x}{1 + x}}$.

(iv)   Evaluate the integral $I = \displaystyle\int x^4 \ln x \, dx$.

(v)   Determine the domain of function, $f(x) = \dfrac{1}{\sqrt{(1 - x)(2 - x)}}$.

$(6 \times 5 = 30)$

Q.2.   Solve the following: **(5x6=30)**

(a)   Find the area between the x-axis and the curve $y^2 = 4 - x$ in the first quadrant from x=0 to x=3.

(b)   Find the relative extrema of the function $y = \sin x \cos 2x$.

(c)   If $y = \tan\left(2\tan^{-1}\dfrac{x}{2}\right)$, then show that $\dfrac{dy}{dx} = \dfrac{4(1 + y^2)}{4 + x^2}$.

(d)   Evaluate the definite integral $\displaystyle\int_{-1}^{5} |x - 3| \, dx$.

(e)   Find the constants a and b such that the function f is continuous $\forall$ x.

$$f(x) = \begin{cases} x^3, & \text{if } x < -1 \\ ax + b, & \text{if } -1 \le x < 1 \\ x^2 + 2, & \text{if } x \ge 1 \end{cases}$$

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Solve the following.   (10x3=30)

.1: Express the complex number $1 + i\sqrt{6}$ in polar form.

.2: Find the number of terms in the Arithmetic sequence if $a_1 = 3, d = 7$, and $a_n = 59$.

.3: Prove that $C_r^n = C_{n-r}^n$

.4: A die rolled. What is the probability that the dots on the top are greater than 4?

.5: Discuss the continuity of the function at $x = 3$.

$$f(x) = \begin{cases} \dfrac{x^2 - 4}{x - 2} & if \ x \neq 2; \\ 4 & if \ x = 2 \end{cases}$$

.6: Determine the values of x for which f is defined as $f(x) = x^2 + 2x - 3$ is increasing.

.7: Determine the values of x for which f is defined as $f(x) = x^2 + 2x - 3$ is neither increasing nor decreasing.

.8: Evaluate $\int \sin 4x \, dx$.

.9: Evaluate the following definite integral $\int_1^2 (x^2 + 1) dx$.

.10: Evaluate $\int \dfrac{1}{3x+2} dx$.

Q.2. Solve the following.   (5x6=30)

1: A natural number is chosen out of the first fifty natural numbers. What is the probability that the chosen number is a multiple of 3 or 5?

2: Expand $\left(\dfrac{a}{2} - \dfrac{2}{a}\right)^6$, also find its general term.

3: Differentiate $\sin^3 x$ with respect to $\cos^2 x$.

4: Find the extreme values for the function $f(x) = 5 + 3x - x^3$.

5: Find the area between the x-axis and the curve $y^2 = 4 - x$ in the first quadrant from $x = 0$ to $x = 3$

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

Q.1.   Answer the following short questions.   (5x6=30)

سوال نمبر 1۔   مندرجہ ذیل سوالات پر مختصر نوٹ لکھیں۔

I.   Sir Syed Ahmad Khan

I۔ سر سید احمد خان

II.   Quit India Movement

II۔ ہندوستان چھوڑ دو تحریک

III.   Indus Basin Treaty

III سندھ طاس معاہدہ

IV.   Salient features of 1956 Constitution

IV۔ 1956 کے آئین کے نمایاں خدوخال

V.   Geography of Pakistan

V۔ پاکستان کا جغرافیہ

Answer the following questions   (2x15=30)

مندرجہ ذیل سوالات کے جوابات تحریر کریں۔

Q. No. 2. Describe the Ideology of Pakistan.

سوال نمبر 2 نظریہ پاکستان کو بیان کریں۔

Q. No. 3. Discuss Pakistan's relations with China.

سوال نمبر 3 پاکستان کے چائنہ کے ساتھ تعلقات پر بحث کریں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   **Answer the following short questions:**   **(6x5=30)**

i.   Find out the length of second pendulum.

ii.   How the musical instrument be turned with the help of heats phenomena.

iii.   Elaborate the principle of super position of waves.

iv.   If U_{max} is the maximum speed of transvers wave and y_{max} is the maximum displacement then show that max acceleration $a_{max} = w^2 y_m$.

v.   Give the postulates of kinetic theory of gases.

vi.   State second law of thermodynamics and calculate co-efficient of performance of refrigeration.

Q.2.   **Answer the following questions:**   **(3x10=30)**

i.   What is torsional oscillator? Derive an expression for time period.

ii.   Give the analytical treatment of beats phenomena and show that no of beats per second is equal to difference in the frequencies.

iii.   What is carnot heat engine. Find out an expression for its efficiency.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (6x5=30)

1. Briefly describe (i) reversible process (ii) Simple harmonic motion, (iii) superposition, (iv) irreversible process (v) Standing waves.

2. Derive an expression for the Joule-Thomson coefficient.

3. Explain convection and radiation mechanisms of heat transfer.

4. Show that uniform circular motion also exhibits simple harmonic motion (SHM)

5. Describe various postulates of kinetic theory of an ideal gas.

6. What are Beats? Also show that beat frequency is equal to the difference in frequencies of the two slightly different frequencies.

Q.2.   Answer the following questions: (3x10=30)

1. Describe traveling waves. Also derive an expression for the mechanical wave speed.

2. Discuss Doppler effect of sound.

3. Discuss various mechanisms of heat transfer.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions: (15x2=30)

i. Can you explain the concept of reversible and irreversible processes?
ii. How do electric motors and generators work?
iii. What is electromagnetic induction?
iv. How does the second law of thermodynamics apply to real-world processes?
v. What is thermodynamics?
vi. What are the zeroth, first, second, and third laws of thermodynamics?
vii. How does a current-carrying wire produce a magnetic field?
viii. What is the principle behind an electromagnet, and how can its strength be increased?
ix. Define motional EMF and Lorentz force?
x. In faraday's law of induction does the induced EMF depend on the resistance of the circuit?
xi. A gas is compressed at constant pressure at 0.3atm from volume of 8L to 3L. In this process 400J heat energy flows out of gas. Find the work done by the gas and the change in internal energy.
xii. Why can an isolated atom not have a permanent electric dipole moment?
xiii. Define current density and microscopic form of ohm's law.
xiv. State Faraday's law and give reason for its negative sign?
xv. Define the term Poynting vector and write down its mathematical formula and unit?

Answer the following questions:

Q.2 a) State Ampère's Law and explain its significance in determining magnetic fields in various symmetrical situations. (07)
b. Using Ampère's Law, calculate the magnetic field at a distance of 5 cm from a long straight wire carrying a current of 3 A. (03)

Q.3 a) Write a brief note on thermal expansion of solids. (07)
b) Briefly describe heat of combustion. Plot temperature versus time graph to show various phase transition in water and discuss various transition points and heat involved. (03)

Q.4 a) State equipartition theorem, write down internal energy of mono, dia and para atomic gas? (07)
b) Calculate the work done by an external agent in compressing 1.12 moles of oxygen from volume of 22.4 L and 1.32 atm pressure to 15.3 L at the same pressure? (03)

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions: **(6x5=30)**

a. Describe the terms: Entropy, thermal expansion, molar heat capacity, adiabatic process, mean free path.

b. What is zeroth law of thermodynamics? Discuss various temperature-scales and types of temperature measuring methods.

c. Write down Maxwell's thermodynamic relations. Also derive any one of the Maxwell's thermodynamics relations.

d. Discuss different mechanisms of heat transfer.

e. Show that translational kinetic energy of a mole of an ideal gas depends only on temperature.

f. Also derive an expression for the mean free path of a gas molecule.

Q.2. Answer the following questions: **(3x10=30)**

a. Derive an expression for the Clapeyron's equation. Also discuss applications of Clapeyron's equation.

b. Find an expression for the thermal efficiency of an idealized Otto cycle. How does this expression verify second law of thermodynamics?

c. Derive three TDS equations.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (15x2=30)

(1)-Is the electric force that one charge exerts on another charge changed if other charges are brought nearby?

(2)-In Gauss's' law $\epsilon_0 \oint_S \vec{E} \cdot \overrightarrow{da} = q$, Is E necessarily the electric field attributable to the charge q?

(3)-If the surface of a charged conductor is equipotential, does it mean that charge is uniformly distributed over the surface?

(4)-If E equals zero at a given point, must V equals zero for that point? Give an example to prove your answer.

(5)-How will the capacitance of parallel plate capacitor change if the free space between its plates is replaced by a dielectric medium?

(6)-Why it is dangerous to touch the terminals of a high voltage capacitor even after the applied potential difference has been turned off?

(7)-Can a dielectric conduct electricity? Can a conductor have dielectric properties?

(8)-Discuss the analogies between Ampere's law and Gauss's law.

(9)-Discuss the analogies and differences between Biot-Savart law and Coulomb's law.

(10)-Is energy of a charged particle conserved in magnetic field? How can direction of magnetic force on charge particle be determined?

(11)-Show that 1weber /second=1volt.

(12)-A resistance R, an inductor L and a battery of emf Ɛ form a series circuit. Apply loop theorem to this circuit so as to obtain the equation that speaks in terms of electric power.

(13)-Describe similarities between the energy stored in the electric field of a charged capacitor and the energy stored in the magnetic field of a current carrying coil.

(14)-Why is Maxwell modification of Ampere's law needed to understand the propagation of electromagnetic waves?

(15)-Summarize the properties of electromagnetic waves.

Q.2.   Answer the following questions: (3x10=30)

i. Find and discuss an expression of electric field due to an electric dipole.

ii. Apply Gauss's law to a thin, infinite, non-conducting sheet with positive surface charge density (planar symmetry).

iii. Find an expression for magnetic force on a current-carrying wire.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   **Answer the following short questions**   **(6x5=30)**

1. Define and explain Constitution.

2. What is public opinion and how it is formulated?

3. How political ideology of Marxism can be related to present-day political scenarios?

4. Describe the major characteristics of a political system?

5. What is a political party, discuss in detail.

6. How fascism is different from Nazism?

Q.2.   **Answer the following questions.**   **(3x10=30)**

1. What are interest groups, discuss its pros and cons in detail.

2. How law is related to morality?

3. Define and discuss Nationalism.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: **(6x5=30)**

a) What is the Concept of Political Science?

b) Write the definition of State? Brief any two Elements.

c) Write the Concept of Islamic Sovereignty?

d) What is the Legitimacy?

e) What is the Federation?

f) Brief the term of Nation.

Q.2.   Answer the following questions: **(3x10=30)**

1. What is the Definition of Sovereignty? Explain its Characteristics.

2. What is the Government? Elaborate its Organs.

3. What is the Presidential form of Government? Describe its demerits.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   **Answer the following short questions:**   **(6x5=30)**

i.   What is meant by Local Government?

ii.   What do you mean by Federation?

iii.   Differentiate between Nation and Nationalism.

iv.   Elaborate the meaning of Dictatorship.

v.   Write any two differences between Political Science and History.

vi.   Define the concept of Legislature.

Q.2.   **Answer the following questions.**   **(3x10=30)**

i.   Write down the significance of Political Science.

ii.   Discuss the features of Western concept of state.

iii.   Explain the functions of Judiciary.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   (6x5=30)

i. What is communication? Explain any four elements of communication.

ii. What are the different parts of memo?

iii. What are the objectives of writing a paragraph?

iv. What are different kinds of presentations?

v. What is the structure of a paragraph?

vi Write some guidelines for writing a Cover Letter?

Q.2.   Answer the following questions.   (3x10=30)

1. Write a letter to Editor of a newspaper highlighting the issue of smog.

2. Write an application to the Director Telephone Department for wrong billing.

3. Select one of the topics below and write a paragraph about it.

(a) Women Empowerment

(b) Effects of Pollution

(c) Punctuality

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.No.1.   Answer the following short questions.   (5x6=30)

I.   Lahore Resolution 1940

I۔ قرارداد لاہور 1940

II.   Aligarh Movement

II۔ تحریک علی گڑھ

III.   Simla Deputation

III ۔ شملہ وفد

IV.   Nehru Report

IV۔ نہرو رپورٹ

V.   18th Amendment Constitution

V۔ آئین کی اٹھارویں ترمیم

Answer the following questions.   (2x15=30)

Q. No. 2. Write a detailed note on the Khilafat Movement.

سوال نمبر 2۔ تحریک خلافت پر تفصیلی نوٹ تحریر کریں۔

Q. No. 3. What was Sir Syed Ahmad Khan's view on modern education?

سوال نمبر 3۔ سر سید احمد خان کا جدید تعلیم کے بارے میں کیا نظریہ تھا؟

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   (6x5=30)

i.   Discuss the functions of Democracy.
ii. Explain the kinds of constitution.
iii. How rule of law is important for the smooth functioning of a state?
iv. Explain the relationship between rights and duties of a citizen.
v.   Discuss the demerits of Federation.
vi. Describe the characteristics of political system.

Q.2.   Answer the following questions   (3x10=30)

i.   Discuss merits and demerits of Presidential form of government.
ii. Define law. Discuss its different sources in detail.
iii. Define the term "Constitution". Discuss the sources in detail. Also briefly describe the major amendments (any three from 1973 constitution of Pakistan).

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

Q.1. Answer the following short questio54ns: **(6x5=30)**

سوال نمبر 1۔ درج ذیل اجزاء کے مختصر جوابات دیجئے۔

i. What are the different kinds of electoral representation?

(الف) انتخابی نمائندگی کی مختلف اقسام کیا ہیں؟

ii. Explain the basic principles of Nazism briefly.

(ب) Nazsim کے بنیادی اصولوں کی مختصر وضاحت کریں۔

iii. Explain the basic principles of Communism briefly.

(ج) کمیونزم کے بنیادی اصولوں کو محتصرآ بیان کریں۔

iv. Explain Globalization in brief.

(د) Globalization کی مختصر وضاحت کریں۔

v. Define Political exclusion and inclusion.

(ہ) سیاسی اخراج اور شمولیت کی تعریف کریں۔

vi. Write advantages of a two-party system.

(و) دو جماعتی نظام کے فوائد لکھیں۔

Q.2. Answer the following questions.   **(3x10=30)**

سوال نمبر 2۔ درج ذیل سوالات کے تفصیلی جوابات دیجئے۔

i. Analyze the ideology of socialism and its main components.

(الف) سوشلزم کے نظریے اور اس کے اہم اجزا کا تجزیہ کریں۔

ii. Describe the concept of interest group, explain their various forms, and identify their key role, and relationship with political parties.

(ب) مفاداتی گروہوں کے تصور کی وضاحت کریں، ان کی مختلف اقسام کی وضاحت کریں، اور سیاسی جماعتوں کے ساتھ ان کے کرداروں اور تعلقات کی نشاندہی کریں۔

iii. Explain the concept of Public opinion, how it forms, and the differences it presents.

(ج) رائے عامہ کے تصور کی وضاحت کریں یہ کیسے بنتی ہے، اور اس سے پیش آنے والی مشکلات **بیان کریں**۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   **(6x5=30)**

1. Why is feedback important in communication messages?

مواصلاتی پیغامات میں تاثرات کیوں اہم ہیں؟

2. What are the important elements of process of communication?

مواصلات کے عمل کے اہم عناصر کیا ہیں؟

3. What is your understanding of comparative study of mass media?

ذرائع ابلاغ کے تقابلی مطالعہ کے بارے میں آپ کی کیا سمجھ ہے؟

4. Differentiate between a newspaper and a magazine.

اخبار اور میگزین میں فرق کریں۔

5. Describe the significance of communication in your own words.

ابلاغ کی اہمیت کو اپنے الفاظ میں بیان کریں۔

6. What is meant by agenda setting?

ایجنڈا کی ترتیب سے کیا مراد ہے؟

Q.2.   Answer the following questions.   **(2x15=30)**

1) What is Communication? Write about its major types.

کمیونیکیشن کیا ہے؟ اس کی اہم اقسام کے بارے میں لکھیں۔

2) How does mass media lead to opinion formation? Explain.

ذرائع ابلاغ کس طرح رائے کی تشکیل کا باعث بنتے ہیں؟ وضاحت کریں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

<div dir="rtl">

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

</div>

Q.1.   Answer the following short questions.   **(5x6=30)**

<div dir="rtl">

سوال نمبر1۔   مندرجہ ذیل سوالات کے مختصر جوابات تحریر کریں۔

</div>

I.   Lahore Resolution 1940

<div dir="rtl">

I۔ قرار داد لاہور 1940

</div>

II.   Aligarh Movement

<div dir="rtl">

II۔ تحریک علی گڑھ

</div>

III.   Simla Deputation

<div dir="rtl">

III ۔ شملہ وفد

</div>

IV.   Nehru Report

<div dir="rtl">

IV۔ نہرو رپورٹ

</div>

V.   Cripps Proposals

<div dir="rtl">

V۔ کرپس تجاویز

</div>

Answer the following questions   **(2x15=30)**

<div dir="rtl">

مندرجہ ذیل سوالات کے جوابات تحریر کریں۔

</div>

Q. No. 2. Write a detailed note on the Khilafat Movement.

<div dir="rtl">

سوال نمبر2۔ تحریک خلافت پر تفصیلی نوٹ تحریر کریں۔

</div>

Q. No. 3. What was Sir Syed Ahmad Khan's view on modern education?

<div dir="rtl">

سوال نمبر 3۔ سر سید احمد خان کا جدید تعلیم کے بارے میں کیا نظریہ تھا؟

</div>

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

Q.1. Write short note on the following. (5x6=30)

سوال نمبر1۔ مندرجہ ذیل پر مختصر نوٹ تحریر کریں۔

I. COD stands for...?

I۔ سی اوڈی کس چیز کا مخفف ہے؟

II. Durand Line

II۔ ڈیورنڈ لائن

III. Muhammad Ali Bogra

III محمد علی بوگرہ

IV. Second Martial law

IV۔ دوسرا مارشل لاء

V. Objective Resolution

V۔ قرارداد مقاصد

Answer the following questions (2x15=30)

مندرجہ ذیل سوالات کے جوابات تحریر کریں۔

Q. No. 2. Highlight the Early difficulties faced by Pakistan.

سوال نمبر 2۔ پاکستان کو درپیش ابتدائی مشکلات کو اجاگر کریں۔

Q. No. 3. Discuss Pakistan's geographical significance.

سوال نمبر 2۔ پاکستان کی جغرافیائی اہمیت پر بحث کریں۔

UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – Spring 2025

Paper: Quantitative Reasoning - II Tools for Quan. Reas.
Course Code: QR-102

Roll No. ....

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions   **(6x5=30)**

(i) Explain quantitative data and its usage in the statistical analysis.

(ii) How many signals can be given by 6 flags of different colours, using 4 flags at a time?

(iii) Find the solution $-x^2 - 4x + 12 = 0$.

(iv) What is the difference between permutation and combination? Explain.

(v) How many arrangements of the letters of the word "KASHMIR", taken all together, can be made?

(vi) A worker finishes a project in 8 days if he works 6 hours daily? In how many days, will he complete the project if he works 9 hours a day?

Answer the following questions.   **(3x10=30)**

Q. 2 There are 20 chits marked $1, 2, 3, \cdots, 20$ in a bag. Find the probability of picking a chit, the number written on which is multiple of 4 or a multiple of 7.

Q. 3 Convert the following result to logical and prove it by constructing truth tables:

$$(A \cup B)' = A' \cap B'.$$

Q. 4 Solve the system

$$x + y = 2,$$
$$2x - z = 1,$$
$$2y - 3z = -1.$$

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions.

I. What are the types of social mobility? (5)
II. What are the types of marriages in Pakistan? (5)
III. Differentiate between sacred and profane? (5)
IV. What are social movements? (5)
V. Differentiate between modernity and post-modernity? (5)
VI. What is system of government in Pakistan? (5)

Q.2. Answer the following questions.

I. How social movements bring social change? (10)
II. What are the functions of economy as social institution? (10)
III. What are the functions of religion as social institution? (10)

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   **Answer the following short questions.**   **(6x5=30)**

i. Folk thinking
ii. Babylonian
iii. Social justice
iv. Ethnocentrism
v. Evolution of society
vi. Concept of self

Answer the following questions.   **(3x10=30)**

Q2. How has social philosophy evolved throughout history, and what key events or ideas have shaped its development?

Q3. What are the key factors influencing the rise and fall of nations according to Ibn Khaldun?

Q4. What are the core principles of basic human ethics as outlined by Moulana Ubedullah Sindhi?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.　Define the following questions.　　　　　　　**(6x5=30)**

  i.　Class system

  ii.　Health and medicine

  iii.　Culture

  iv.　Mass communication

  v.　Social change

  vi.　Collective behavior

Q.2.　Answer the following questions.　　　　　　　**(3x10=30)**

  i.　Explain social stratification and its dimensions with examples from Pakistani society.

  ii.　Define Social institutions. Discuss the Education as an institution and its role in society with examples.

  iii.　What is social movement? Discuss and explain its types with relevant examples.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. **Define the following with examples.**   (6x5=30)

1 What is the significance of the discipline of Sociology?

2 Describe the subject matter of Sociology.

3 Differentiate between Ideal and Real Culture.

4 Give a brief definition of social control.

5 Differentiate between Psychology and Sociology.

6 What do you mean by Socialization?

Q.2. **Answer the following questions.**   (3x10=30)

1. Briefly describe how sports may minimize social evils among youth in Pakistan.

2. Discuss sports as a social institution.

3. Give a sociological analysis of sports in creating harmony among peoples.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.　Write short note on the followings.　　　　　　**(5x6=30)**

1. Status
2. Culture
3. Cultural Diversity
4. Social Conflict
5. Role Set

Q.2.　Answer the following questions:　　　　　　**(3x10=30)**

1. Define the **Cultural Change** and what are the **problems of Cultural change in Pakistani society?**

2. Define **Crime,** its types and **Social Control.**

3. What are studies of **Group Behaviours?**

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   (6x5=30)

سوال نمبر 1۔   مندرجہ ذیل سوالات کے مختصر جوابات تحریر کریں۔

(i) Briefly describe the relationship between social welfare and social work.

(i) ساجی بہبوداور سوشل ورک کے درمیان تعلق کو مختصراً بیان کریں۔

(ii) Write a short note on historical development of social welfare in pakistan.

(ii) پاکستان میں ساجی بہبود کی تاریخی ترقی پر ایک مختصر نوٹ لکھیں۔

(iii) Give a detailed note on political system in Islam.

(iii) اسلام میں سیاسی نظام پر تفصیلی نوٹ لکھیں۔

(iv) What are main feature of social welfare policy 1994?

(i) ساجی بہبود کی پالیسی 1994 کی اہم خصوصیات کیا ہیں؟

(v) Write details of early poor laws with reference to UK.

(v) برطانیہ کے حوالے سے ابتدائی قوانین غرباء کی تفصیلی لکھیں۔

(vi) What is the difference between functional and discriptive definition of social welfare?

(vi) ساجی بہبود کی عملی اور وضاحتی تعریف میں کیا فرق ہے؟

Q.2.   Answer the following questions   (3x10=30)

سوال نمبر 2۔   مندرجہ ذیل سوالات کے جوابات تحریر کریں۔

(i) Give a detailed note on functional and discriptive definition of social welfare.

(i) ساجی بہبود کی عملی اور وضاحتی تعریف پر تفصیلی نوٹ دیں۔

(ii) What is the concept of sovereignty in Islam, Give its main feature in detaile?

(ii) اسلام میں حاکمیت کا تصور کیا ہے، اس کی بنیادی خصوصیات تفصیل سے بتائیں؟

(iii) Write a detailed note on social welfare in UK, Also give detail of partial relief system.

(iii) انگلینڈ میں ساجی بہبود پر تفصیلی نوٹ لکھیں، جزوی امدادی نظام کی بھی تفصیل دیں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   **Answer the following short questions.**   (6x5=30)

    i. Write down five advantages of sampling.

    ii. Explain the difference between census and sample survey.

    iii. Differentiate between point and interval estimation.

    iv. Distinguish between Simple hypothesis and Composite hypothesis.

    v. Distinguish between Type I-Error and Type II- Error.

    vi. Write down the assumptions of ANOVA.

Answer the following questions.   (3x10=30)

Q.2 (a) Given the following distribution for a random variable X:

x	1	2	3	4	5	6
f(x)	0.1	0.2	0.2	0.25	0.15	0.10

Find mean, variance and standard deviation of X.

    (b) An event has the probability $p=3/8$. Find the complete binomial distribution for $n=5$ trials.

Q.3.(a) A normal distribution has mean=20 and standard deviation $=2.5$ find

    i. $P(16.5 < X < 25.5)$

    ii. $P(11.5 < X < 24)$

    (b) A sample of size 900 members has mean 2.4 inches. Could it be reasonably regarded as being a simple random sample from a large population whose mean is 2.9 inches and standard deviation 3.2 inches?

Q.4.(a) The students in 3 classes in an elementary statistics course obtained total scores as in the table:

Meeting time		
8'o clock	**10'o clock**	**2'o clock**
121	97	134
117	145	89
145	119	108
108	139	88
142	143	146
154	133	153

Is there significant difference in the scores received by the students meeting in different times of a day? State completely the hypothesis. Use a 5% level of significance to draw conclusions.

    (b) Gilby classified 1700 school children according to intelligence and apparent family economic level. A condensed classification follows:

Classes	Dull	Intelligent	Very Capable
Very well clothed	81	322	233
well clothed	141	457	153
Poorly clothed	102	163	48

Test the null hypothesis of independence of the two classifications at 0.05 level of significance.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions.   (15x2=30)

i. Define mutually exclusive events. Give example.

ii. What is meant by an event?

iii. State classical definition of probability.

iv. If A and B are two independent events with P(A)=0.5 and P(B)= 1/3, find $P(A \cap B)$.

v. Define equally likely events.

vi. Distinguish between permutation and combination.

vii. Define a continuous random variable.

viii. Define probability density function.

ix. Describe the properties of binomial probability distribution.

x. Let X is binomially distributed with mean 3 and variance 2, find P(X=5).

xi. Describe the condition hypergeometric distribution tends to binomial distribution.

xii. Using binomial distribution, find probability of 3 successes in 8 trials when p=0.4.

xiii. Find the mean of binomial distribution $(q + p)^3$.

xiv. Define Poisson distribution.

xv. State 3 properties of Normal distribution.

Answer the following question.   (6x5=30)

Q.2 From a pack of 52 cards, two are drawn at random. Find the probability that one is king and other is queen?

Q.3 Let X be a random variable with probability distribution

X	-1	0	1	2	3
f(x)	0.125	0.5	0.2	0.05	0.125

Find E(X) and Var(X).

Q.4 A and B play a game in which A's probability of winning is 2/3. In a series of 8 games, what is the probability that A will win (i) exactly 4 games (ii) at least 4 games.

Q.5 The names of 5 men and 5 women are written on slips of paper and placed in a hat. Four names are drawn. What is the probability that 2 are men and two are women.

Q.6 The probability that a man aged 50 years will die within a year is 0.01125. What is the probability that of 12 such men at least 11 will reach their fifty-first birthday.

Q.7 A normal distribution has mean=100 and standard deviation =15, find

i.   P (X < 92.5)

ii. P (91 <X< 127)

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   (6x5=30)

i. Write down properties of normal distribution.

ii. Explain the difference between point estimate and interval estimate.

iii. Define sample and population.

iv. Distinguish between null hypothesis and alternative hypothesis.

v. Distinguish between Type I-Error and Type II- Error.

vi. Discuss the testing procedure of testing of hypothesis that population mean with large sample and unknown population standard deviation.

Answer the following questions.

Q.2 (a) The p.d.f. of discrete r.v. X is $f(x) = \binom{3}{x}\left(\frac{1}{4}\right)^x \left(\frac{3}{4}\right)^{3-x}$, $x = 0,1,2,3$.

Find E(X) and Var(X).   **(5)**

(b) A normal distribution has mean=12 and standard deviation =2 find

i.   P(10 <X< 13.5)

ii.   P(11.4 <X< 14.2)   **(5)**

Q.3.(a) A restaurant wishes to estimate the average amount of money a customer spends for lunch. A random sample of size 36 is selected and the sample mean is found to be 35. Assuming σ=13.77. Find 95% confidence interval for μ.   **(5)**

(b) The marks obtained by students at a large number of colleges are known to be normally distributed with a mean of 25. A random sample of 36 students showed an average number of marks of 27 with standard deviation of 5. What conclusion should be drawn?   **(5)**

Q.4.(a) A factory produces light bulbs, and each bulb has a probability of 0.2 of being defective. A quality inspector randomly selects a sample of 5 bulbs each day and records the number of defective bulbs. The data collected over 100 days is summarized below:

No. of Defective Bulbs (x)	0	1	2	3	4	5
Frequency (Observed)	30	35	20	10	4	1

Fit a binomial distribution to the above data. (5)

(b). A researcher wants to study the effect of two factors—Fertilizer Type and Irrigation Method—on crop yield (kg/plot). There are 3 types of fertilizers; A, B, and C

4 irrigation methods: Drip, Sprinkler, Furrow, Flood.

The data is shown below:

	Drip	Sprinkler	Furrow	Flood
Fertilizer A	50	55	53	52
Fertilizer B	58	60	56	54
Fertilizer C	62	64	63	61

Use Two-Way ANOVA to test whether:

There is a significant effect of Fertilizer Type on crop yield.

There is a significant effect of Irrigation Method on crop yield. (5)

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (6x5=30)

1. What is the difference between primary and secondary data?
2. State all properties of Arithmetic Mean.
3. Differentiate between positive skewness and negative skewness.
4. Define Consumer price index and how it is computed?
5. Write down the four properties of the least square regression line.
6. Convert following frequency distribution into relative and cumulative frequency distribution.

Answer the following questions: (3x10=30)

Question 2: For the following data, calculate the coefficient of variation (C.V).

Weekly Wages (,000)	30-39	40-49	50-59	60-69	70-79	80-89	90-99
No. of Workers	8	12	13	15	28	20	10

Question 3: A financial analyst has gathered the following data about the relationship between income and investment in securities from 8 randomly selected families. Find the coefficient of correlation and regression line Y on X.

Income (,000)	8	12	9	24	43	37	19	16
Investment in securities (% of income)	36	25	33	15	28	19	20	20

Question 4: Calculate the Index number for 2021 using base year 2019 by

(i) Laspeyr's   (ii) Paasche's   (iii) Fisher Ideal Index

for the following data.

Commodities	2019		2021	
	Price	Quantity	Price	Quantity
A	6	90	9	105
B	35	95	45	92
C	32	30	39	35

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions.   **(5x6=30)**

1) Explain the concept of cost of production.
2) Define and explain the entrepreneurship factor of production.
3) Why intermediate products are not counted in GDP?
4) Calculate the Price Elasticity of Supply, if the percentage change in quantity supplied is 30% and the percentage change in price is 60%. Is it elastic or inelastic?
5) Explain the concept of Budget Deficit.

Q.2. Answer the following questions.   **(2x15=30)**

1)   Explain the Circular Flow Model and its components in detail. Explain the Closed Economy and Open Economy concepts in a circular flow model.

2)   Discuss the various components of Fiscal Policy made by the government of Pakistan. Describe its role in the country's development.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

سوال نمبر 1: درج ذیل سوالات کے جوابات تحریر کیجئے۔   (6x5=30)

i. ''يَضْرِبُ'' سے فعل مضارع معروف کی گردان لکھیے۔

ii. عربی زبان میں مؤنث اسم کی علامات لکھیے ایک ایک عربی مثال بھی تحریر کیجئے۔

iii. مرکب اضافی کی تعریف لکھیے اور تین عربی مثالیں لکھیے۔

iv. جملہ اسمیہ کی تعریف لکھیے اور تین عربی مثالیں لکھیے۔

v. إِنَّ الَّذِينَ كَفَرُوْا سَوَاءٌ عَلَيْهِمْ أَ أَنْذَرْتَهُمْ اَمْ لَمْ تُنْذِرْهُمْ لَا يُؤْمِنُوْنَ (اردو میں ترجمہ کیجئے)۔

vi. قَالَ رَسُوْلُ اللهِ صلى الله عليه وسلم: ثَلَاثٌ مَنْ كُنَّ فِيْهِ وَجَدَ حَلَاوَةَ الْإِيْمَانِ. اَنْ يَكُوْنَ اللهُ وَ رَسُوْلُهُ اَحَبَّ إِلَيْهِ مِمَّا سِوَاهُمَا وَ اَنْ يُحِبَّ الْمَرْءَ لَا يُحِبُّهُ اِلَّا لِلهِ وَ اَنْ يَكْرَهَ اَنْ يَعُوْدَ فِيْ الْكُفْرِ كَمَا يَكْرَهُ اَنْ يُقْذَفَ فِى النَّارِ (اردو میں ترجمہ کیجئے)۔

درج ذیل سوالات کے جوابات تحریر کیجئے۔   (3x10=30)

سوال نمبر 2: ضمائر منفصلہ کو عربی مثالوں میں استعمال کرتے ہوئے لکھیے۔

سوال نمبر 3: ''الفعل المضعف اور الفعل الصحيح'' کی تعریفیں لکھیے اور دو دو عربی مثالیں لکھیے۔

سوال نمبر 4: حُرُوْف الھجاء سے کیا مراد ہے، عربی زبان کے تمام حروف ہجاء بالترتیب لکھیے۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

سوال نمبر: 1 درج ذیل مختصر سوالات کے جوابات لکھیں۔   (6x5=30)

1- مطلع کسے کہتے ہیں؟ مثال دے کر واضح کریں۔

2- ناصر کاظمی کے شعری موضوعات کیا ہیں چند اشعار سے واضح کریں۔

3- نعت گوئی میں حفیظ خان کا مرتبہ کیا ہے مختصراً بیان کریں۔

4- درج ذیل شعر کی تشریح کریں اور شاعر کا نام لکھیں:

رگوں میں دوڑتے پھرنے کے ہم نہیں قائل

جب آنکھ ہی سے نہ ٹپکا تو پھر لہو کیا ہے

5- درج ذیل شعر کی تشریح کریں اور شاعر کا نام لکھیں:

جس کا عمل ہے بے غرض، اس کی جزا کچھ اور ہے

حور و خیام سے گزر، بادہ و جام سے گزر

6- درج ذیل شعر کی تشریح کریں اور شاعر کا نام لکھیں:

ہوا جب کفر ثابت ہے وہ جمغائے مسلمانی

نہ ٹوٹی شیخ سے زنار تسبیح سلیمانی

حصہ دوم

سوال نمبر 2: درج ذیل اشعار کی تشریح کیجیے اور شاعر کا نام لکھیں: (3x10=30)

i. جو تعلیم توازن آپ نے دی ہے زمانے کو

اسی سے آدمیت کا ہر اک جوہر چمکتا ہے

ii. مہکتا ہے گل اخلاق کی خوشبو سے ہر آنگن

ضیائے سیرت سرکارؐ سے ہر گھر چمکتا ہے

سوال نمبر 3: مثنوی نگاری پر تفصیلی اظہار خیال کیجیے۔

سوال نمبر 4: میر تقی میر کی غزل گوئی پر نوٹ لکھیں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

سوال نمبر1:   درج ذیل سوالات کے مختصر جواب تحریر کریں۔   (5x6=30)

(الف): فارسی حروف تہجی تحریر کریں۔

(ب): اردو رسم الخط پر مختصر نوٹ لکھیں۔

(ج): ترجمہ نگاری کے کوئی سے دو اصول لکھیں۔

(د): کوئی سی دو ادبی اصطلاحات کی تعریف لکھیں۔

(ہ): ضرب المثل/کہاوت کی تعریف کریں اور دو مثالیں تحریر کریں۔

(و): جملہ خبریہ کی تعریف لکھیں اور دو مثالیں بھی دیں۔

سوال نمبر2:   درج ذیل سوالات کے جامع جواب تحریر کریں۔   (3X10=30)

(الف): کسی بھی زبان میں ترجمہ نگاری کی کیا اہمیت ہے، اظہار خیال کریں۔

(ب): ملکی امن و امان کی صورت حال پر دو دوستوں کے درمیان مکالمہ تحریر کریں۔

(ج): انٹرویو کیا ہوتا ہے؟ انٹرویو کے بنیادی اصولوں کو ضبط تحریر میں لائیں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

اس پرچہ کو مہیا کی گئی جوابی کاپی پر حل کریں۔

سوال نمبر1: درج ذیل سوالات کے اختصار کے ساتھ جوابات دیں۔ (6X5=30)

۱۔ اردو حروفِ تہجی پر نوٹ لکھیے۔

۲۔ انٹرویو کے کم از کم پانچ اصول تحریر کیجیے۔

۳۔ تلمیح کی تعریف کریں اور تین مثالوں سے واضح کیجیے۔

۴۔ پاکستان کے تعلیمی نظام پر دو دوستوں کے مابین مکالمہ تحریر کیجیے۔

۵۔ صنعتِ لف و نشر کی تعریف کیجیے؟ تین اشعار سے مثالیں دیجیے۔

۶۔ صنعتِ مراۃ النظیر سے کیا مراد ہے؟ تین اشعار سے مثالیں دیجیے۔

سوال نمبر2: درج ذیل سوالات کے تفصیلی مگر جامع جواب تحریر کیجیے۔ (3X10=30)

۱۔ اردو ترجمہ نویسی کی تاریخ اور اصول و ضوابط کی وضاحت کیجیے۔

۲۔ اردو زبان کے آغاز و ارتقا کے مختلف نظریات کی وضاحت کیجیے۔

۳۔ اصطلاحات سازی پر نوٹ لکھیے اور اس کی مشکلات پر روشنی ڈالیے۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (5x6=30)

   i.   Differentiate between agnatha and gnathostomata.
   ii.   What is cladistic interpretation of the amniotic lineage?
   iii. Write a note on testudines?
   iv.   Describe and draw the life history of sea lamprey ?
   v.   Describe the phylogenetic relationship of chordata ?

Q.2.   Answer the following questions: (3x10=30)

   1.   Write down in detail the support and locomotion in amphibians.

   2.   How do birds migrate and navigate?

   3.   Explain in detail the dentition in mammals.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. **Answer the following short questions:**   **(6x5=30)**

    I.   Briefly explain the diversity of modern mammals.
    II.   Briefly explain classes of Echinoderms
    III.   Briefly explain the structural adaptation in locomotion of amniotes.
    IV.   What are the defining features of Hemichordata?
    V.   What is the role of feathers in birds beyond flight?
    VI.   What is the function of the amniotic egg?

Answer the following questions: **(3x10=30)**

Question. 2 Discuss the evolutionary perspective in fishes and further phylogenetic consideration of Agnatha and Gnathostomata.

Question. 3 Describe the evolutionary perspective in and survey of different orders of Amphibia.

Question. 4 Compare the evolutionary pressures affecting the external structures in amphibians, reptiles, birds, and mammals.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Answer the following short questions: (15x2=30)

i.   Differentiate between urochordate and cephalochordates.
ii.   How do gaseous exchange take place in super class Pisces.
iii. Write down development of *Wallago attu*.
iv.   Write various hypothesis regarding Evolution of Flight.
v.   How modern birds are diverse?
vi.   How do crocodiles reproduce?
vii. Write down classification of protochordates.
viii. Write interesting facts about order Anura.
ix.   Discus metamorphosis of caudates.
x.   Write any four general characteristics of Reptiles.
xi.   Write down similarities and differences of reptiles with modern birds?
xii. Describe musk glands in mammals.
xiii. Write evolutionary history of Protochordates.
xiv. What is viviparity, give example.
xv.   Write down dental formula of human?

Q.2.   Answer the following questions: (3x10=30)

1. Briefly discuss nervous and sensory systems of Birds.

2. Describe excretion and osmoregulation in Mammals.

3. How do gaseous exchange takes place in Amphibians.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions: (15x2=30)

i. Who is Chuckwalla ?
ii. What is secondary palate?
iii. Explain briefly about the evolution of mammals?
iv. What are the expamples of order cetacea ?
v. Why lophophorate are known as lesser-known invertebrates?
vi. Describe briefly the adoptations of the birds skeleton for flight?
vii. Describe briefly the role of skin in temprature regulation in amphibians ?
viii. What is pleurodont and acrodont?
ix. What is major function of avian pineal gland?
x. Describe briefly about the relationship between members of the three chordate subphyla?
xi. In which class fins with muscular lobes and lungs used in gas exchange?
xii. Which group of animals contains only living amphibians?
xiii. Write down dental formula of human and beaver.
xiv. What is endothermy?
xv. Differentiate between bony and cartilaginous fishes.

Q.2. Answer the following questions: (3x10=30)

1. Write down the survey of order caudata and order anura.

2. Describe in detail the ancient birds and the evolution of flight.

3. Write a note on mammalian glands.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. **Answer the following short questions:**   (6x5=30)

     i.   Fluid mosaic model of Plasma membrane.
     ii.   Function of ER.
     iii.   Compare animal and plant cells
     iv.   Microfilaments structure
     v.   Structure and function of nucleus
     vi.   Cell theory

Q.2. **Answer the following questions:**   (3x10=30)

     i.   What is meiosis. Explain the process with diagram.
     ii.   What are motor proteins. Explain the structure and function of Microtubules.
     iii.   Which organelle is referred as "Bags full of hydrolytic enzymes". Explain the structure and function of Lysosomes.