THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i.   Explain the Socratic Method.

ii.   Explain Skepticism.

ii.   Explain the Divine Command Theory.

iv.   Elaborate Thomas Kuhn's Theory of Scientific Revolution.

v.   What art is?

vi.   Explain the Problems of Induction.

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

i.   What are the origins of Justice and the Social Contract?

ii.   Write a note on Art as expression of emotions.

iii.   Write a note on Deontology.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i.   Why Philosophy is important?

ii.   Why knowledge matters?

ii.   Explain Skepticism.

iv.   What art is?

v.   Write a note on Art as Re-presentation of Reality.

vi.   What Scientific Method is?

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

i.   Explain in detail Divine Command Theory.

ii.   What is the difference between Justice and Equality?

iii.   Write a note on Libertarianism?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. What are the main Goals of Psychology from a Scientific perspective explain with examples.

2. How do psychologists define Learning, and briefly explain types of Learning.

3. Differentiate between Positive and Negative Reinforcement with the help of examples.

4. What is the difference between Conformity and Obedience explain with examples.

5. What are the key differences between the Central and Peripheral nervous system.

6. Define Judgment and Decision making.

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

1. Explain the Endocrine system and its functions in the human body.

2. What is the definition of Personality, and what are the key methods used in personality assessment.

3. Write a detailed note on the factors that affect Motivation.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. Write the aim and scope of Clinical psychology.

2. What is the role of an Organizational psychologist, and how do they contribute to improving workplace dynamics.

3. Briefly explain any one approach of Developmental psychology.

4. Differentiate between Phenotype and Genotype, explain with examples.

5. Briefly explain the status of Forensic psychology in the world.

6. What are the differences between Clinical and Counseling assessments, provide examples to illustrate each.

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

1. Define Counseling Psychology, and briefly explain the perspectives used in Counseling psychology.

2. Briefly explain the history and scope of School psychology.

3. Write a detailed note on any one model of Health psychology.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i.   What do you mean by internal users of accounting information? Name few of them.
ii.   What do you mean by Going concern assumption?
iii.   What is Double entry accounting system?
iv.   Why closing entries are done at the end of the accounting period?
v.   What is a worksheet? Is it formal step in accounting cycle?
vi.   Differentiate between unearned revenue and revenue receivable?
vii.   Define current assets?
viii.   What is meant by reducing balance methods?
ix.   What are financing activities?
x.   Give five examples of current liabilities?
xi.   What is meant by unearned revenue?
xii.   What is subsidiary ledger account?
xiii.   What is realization principle?
xiv.   What is periodic inventory system?
xv.   What is contingent liability?

Answer the following questions: (3x10=30)

Q.2.   Alpha Traders reported the following data for the year:

Net Sales	$6,000,000
Cost of Goods Sold	4,200,000
Average Inventory	900,000
Average Accounts Payable	750,000
Net Income	520,000
Interest Expense	100,000
Income Tax Expense	130,000
Average Total Assets	5,000,000
Average Stockholders' Equity	2,800,000

Requirements:

i.	Gross Profit Percentage.	ii.	Inventory Turnover.
iii.	Accounts Payable Turnover	iv.	Debt-to-Equity Ratio
v.	Return on Equity		

Q.3.   The adjusted trial balance of Tech-Pro Solutions as of December 31, 2023, is as follows:

Account	Debit	Credit
Cash	$ 35,000	
Accounts Receivable	$ 65,000	
Prepaid Insurance	$ 6,000	
Office Supplies	$ 4,500	
Equipment	$ 150,000	
Accumulated Depreciation: Equipment		$ 45 ,000
Accounts Payable		$ 22,000
Notes Payable		$ 50,000
Common Stock		$ 80,000
Retained Earnings		$ 40,000

Service Revenue		$ 208,000
Salaries Expense	$ 150,000	
Depreciation Expense	$ 15,000	
Insurance Expense	$ 9,000	
Supplies Expense	$ 3,000	
Interest Expense	$ 2,500	
Dividends	$ 5,000	
Totals	**$ 445,000**	**$ 445,000**

Requirements:
i.   Prepare an Income Statement for the year ended December 31, 2023.
ii. Prepare a Statement of Retained Earnings for the year ended December 31, 2023.
iii. Prepare a Balance Sheet as of December 31, 2023.

Q.4. ABC Private Limited was established in January 2023 with an initial investment of $1,000,000 from its two founders in exchange for 10,000 shares of capital stock.

Jan 1	Purchased office premises for $600,000, allocating $400,000 to the building and $200,000 to the land, financed through a bank loan.
Jan 3	Purchased office furniture and computers for $150,000, paying $50,000 upfront and the remaining amount on credit, payable in 30 days.
Jan 4	Signed a contract to supply goods worth $500,000, receiving a $50,000 advance from the client.
Jan 8	Paid salaries of $25,000 for the current month and recorded $5,000 as outstanding salaries to be paid next month.
Jan 11	Issued an invoice for $75,000 to a client for services rendered, of which $40,000 was received in cash.
Jan 14	Purchased inventory worth $100,000, paid $60,000 immediately, and recorded the rema**inin**g amount as accounts payable.
Jan 17	Paid dividends of $20,000 to shareholders.
Jan 21	Received $15,000 as interest income from a fixed deposit account.
Jan 24	Paid $8,000 for advertisement expenses, of which $5,000 was for the current month and $3,000 prepaid for the next quarter.

A partial list account titles used by ABC Private Limited includes

Cash	Notes payable
Building	Purchases
Land	Dividend
Accounts receivables	Accounts payable
Furniture	Interest
Computer	Capital stocks
Building	Advertising Expense

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. Write few benefits of planning
2. What is Scientific Management Concept
3. List down dimensions of culture
4. Differentiate between Franchising and Licensing
5. What is the concept of workforce diversity
6. Why appraisal is important for employees

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

Question No 2: Discuss various global, technological, customer and social media related challenges faced by today's managers?

Question No. 3: As a manager, discuss how you would ensure good management practices in your organization?

Question No 4: Define culture and discuss various dimensions of culture?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i.   Define adverb. Explain with suitable examples.

ii.   What is adjective? Give examples in sentences.

iii.   Discuss the use and tone of imperative sentences.

iv.   Define Past Perfect Tense with examples.

v.   Differentiate between simple and compound sentences with examples.

vi.   Turn the following sentences as directed:

    a)   They defeated us in the final match (passive voice)

    b)   My friend said to me, "Let us go for a walk." (indirect)

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

i.   Describe basic comprehension skills in English.

ii.   Use the following idioms and phrases in sentences:

    A bird's eye view, jack of all trades, fall out, bring through, an open secret.

iii. a) Write synonyms of the following words:

    clamor, lethargic, pause, uplift, cordial

    b) Write antonyms of the following words:

    placid, stagnant, luminous, credible, soft

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Give short answer to the following concepts: **(6x5=30)**

1: List out different mediums of painting.

2: Write down different types of line used in drawing?

3: Point out the techniques of analysing visual elements in painting.

4: Enlist the key characteristics of Neoclassicism.

5: Write down types of balance used in drawing.

6: Enlist the ways of creating rhythm in painting.

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

1: Highlight the features of Modern style of painting. Support your answer with examples.

2: Explain Frida Kahlo style of painting in detail.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i. Name different groups of plants.

ii. What are Deuteromycetes fungi.

iii. Differentiate Ascus and Basidium.

iv. What do you mean by thallus plant body?

v. Write four uses of Algae.

vi. Enlist modes of reproduction in Algae.

vii. Enlist Asexual spores in fungi.

viii. Differentiate smooth walled and tuberculate rhizoids in Bryophytes

ix. Name different groups of Pteridophytes.

x. Define Fossils and Fossilization

xi. Name two dicots and two monocots plants.

xii. Enlist primitive characters of *Psilotum*.

xiii. Differentiate Microcyclic & Demicyclic Rusts

xiv. Differentiate isogamous and anisogamous sexual reproduction.

xv. Draw and label sporophyte in Funaria.

Q.2.   **Answer the following questions:**

1. Explain Smut life cycle with the help of diagrams.   (10)

2. Draw a flow chart and explain the life cycle of *Riccia*. (10)

3a. Write differences and similarities in Fungi and Algae.   (5)

3b. Write general characters of Pteridophytes.   (5)

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۔ (6x5=30)

(1) اذكر/اذكري علامات الفعل (علامات فعل تحریر کریں)-

(2) ما الفرق بين التاء المربوطة والمبسوطة (تاء مربوطہ اور تاء مبسوطہ میں کیا فرق ہے؟ مثال دے کر واضح کریں)-

(3) اكتب/اكتبي ضمائر الرفع المنفصلة. (ضمائر مرفوع منفصلہ لکھیں)

(4) عرّفوا المركب التوصيفي وأركانه مع ذكر الأمثلة. (مرکب توصیفی کی تعریف اور ارکان ذکر کریں اور مثال سے وضاحت کریں)

(5) اكتب/اكتبي أسماء خمس دول عربية من قارة أفريقيا مع ذكر العملات (براعظم افریقہ کے پانچ عرب ممالک اور ان کی کرنسیاں لکھیں)

(6) عرّف/عرّفي بالمركب الإضافي مع ذكر المثال (مرکب اضافی کی تعریف کریں اور مثالوں سے واضح کریں)

درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔ (3x10=30)

Q.2: ترجم/ ترجمي العبارة الآتية إلى اللغة الأردية أو الإنجليزية. واستخرج من العبارة الأمور التالية: 1: فعلًا ماضيًا، 2: فعلًا مضارعًا، 3: مركبا إضافيًا 4. ضميرمنصوبًا، 5: معرّفًا باللام (درج ذیل عبارت کا اردو یا انگلش میں ترجمہ کریں، اور عبارت سے درج ذیل اشیاء اخذ کریں۔ 1: فعل ماضی، 2: فعل مضارع، 3: مرکب اضافی، 4. ضمیر منصوب، 5: معرف باللام)۔

"فغضبَ الشابُّ على هذا الشركِ، وعزمَ أن يقطعَ الشجرةَ، فأخذ فأسَه، وذهبَ إلى تلك الشجرةِ ليقطمها، وفي الطريق ظهَر أمامه الشيطانُ، وقال له: أيُّها الشابُ، إلى أين أنتَ ذاهبٌ؟".

Q. 3: ترجم/ترجمي الحديث الشريف إلى اللغة الأردية أو الإنجليزية. (درج ذیل حدیث شریف کا اردو یا انگلش میں ترجمہ کریں)۔

قال رسول الله ﷺ: اتّق المحارمَ تكنْ أعبدَ الناسِ، وارضَ بما قسم الله لك تكن أغنى الناس. وأحسِن إلى جارك تكن مؤمنًا، وأحِبّ للناس ما تحبُّ لنفسك تكن مسلِمًا، ولا تُكثِر الضحك؛ فإنّ كثرة الضحك تميتُ القلب.

Q. 4: اكتب/اكتبي صياغة فعل المضارع المعروف مع تصريفه من مادة "كَتَبَ". (فعل مضارع معروف بنانے کا قاعدہ ذکر کریں اور "کَتَبَ" 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)**
Provide supporting examples to justify your answers.

i.   Define Unit and Identity matrix.

ii.   Find the value of 'y' if $\begin{bmatrix} 10 & y \\ 9 & 5 \end{bmatrix}$ is singular matrix.

iii.   Write the next three terms of 2, 10, 18……

iv.   Find solution set of $y^2 - 9 = 0$

v.   Solve $x + y = 6 \ and \ x - y = 2$

vi.   Define Linear and quadratic Equation.

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

1.   Solve the equation $21x - 4 - 7(5x - 6) = -4(5x - 7)$.

2.   Solve following set of simultaneous equations using Cramer's Rule:

   $3x + 7Y = 310 \ and \ 7y + 3x = 190$

3.   Compute the simple interest on Rs.7424 at 10.4% for 9 years

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. What role self-reflection and feedback from other can play in identifying personal strengths and weaknesses?
2. Briefly discuss the factors which influence the personal Identity.
3. Briefly discuss the elements of communication.
4. What is meant by positive psychology? Explain the importance and application of positive psychology for individuals and community.
5. List down and elaborate the strategies for managing/transforming negative attitudes.
6. What are the main causes of conflict in communities and organizations.

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

1. In detail discuss the big five personality traits. How does these personality traits impact your community?
2. Stress is a physical or mental tension that results from a challenging situation. In your opinion, what might be the potential sources of stress and as an individual how can you manage the stress.
3. What are the different kinds of teams and how can you build trust and cohesion in a team. Explain and give appropriate examples.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i.	Define and differentiate between current and non-current assets.
ii.	What do you mean by Capital expenditure and Revenue expenditures?
iii.	Define errors of omission and errors of commission.
iv.	Explain matching principle with reference to accounting.
v.	What is balance sheet? List its contents.
vi.	Define accounting. Who are the users of financial statements?
vii.	What do you mean by journal? Why is it called the book of original entry?
viii.	Define and differentiate between cash basis and accrual basis of accounting.
ix.	What is cost principle in accounting?
x.	Elaborate realization principle in accounting.

Answer the following questions: (3x10=30)

Q. 2   Following business transactions of Golden architect occurred during June 2023.

a)	Ahmad Kamran invested Rs. 250,000 in an architectural firm.
b)	Purchased supplies for cash, Rs. 3,500.
c)	Purchased equipment for Rs. 25,400, paying Rs. 3,000 cash and owing the balance.
d)	Paid rent for the month, Rs. 3,400.
e)	Performed design services for cash, Rs. 23,400.
f)	Paid Rs. 22,400 of the amount owed for equipment.
g)	Performed design services on account, Rs. 2,800.
h)	Paid salaries for the month, Rs. 3,200.
i)	Owner withdrew Rs. 2,600 cash for personal use.
j)	Received Rs. 2,500 as partial payment from services performed on account.

Required: Record the above transactions in an accounting equation

Q. 3   The following are the account balances of Hamdan Company on December 31, 2023:

Account Title	Debit	Credit
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
Hamdan, Capital		35,770
Hamdan, Drawing	15,000	
Fees Earned		91,000
Rent Expense	7,200	
Salaries Expense	75,400	
Utilities Expense	2,170	
Maintenance Expense	550	
Totals	**149,370**	**149,370**

Adjustment data:

a) A physical count reveals Rs. 900 of supplies on hand.
b) Insurance expired, Rs. 1200.
c) Depreciation of equipment is Rs. 2,600 per year.
d) Accrued Salaries are Rs. 1,000.

Required: Prepare Income Statement, Statement of Owner's Equity for the year ended December 31, 2023 and a Balance Sheet as on December 31, 2023.

Q.4   The following data relate to the bank account of Saeed Company as of June 30, 2024:

Balance per bank statement			Rs. 17,120
Balance per depositor's record			16,168
Deposit in transit			1,780
Outstanding cheques:			
	#521	Rs. 230	
	#528	178	
	#530	362	
	#531	850	1,620
Bank service charges			60
ATM charges			118
Note receivable collected by bank and entered in Aslam's account			380

a) A Rs. 2,020 cheque that Saeed had deposited was return by the bank because it is a bad (NSF) check.
b) Bank collected a Rs. 4,030 note for Saeed, charging a Rs. 70 collection fee.
c) Saeed wrote a cheque of Rs.560 but recorded in the books as Rs. 650.
d) Bank had charges a Rs. 1,120 cheque written by Ahmad to the account of Saeed company.

Required: Prepare a Bank reconciliation statement of Saeed Company.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

  i.   Economic problem and factors of production
  ii.   Types of Partners in Partnership
  iii. Planned or controlled economy
  iv.   Memorandum of Association and Articles of Association
  v.   Horizontal and vertical business combinations
  vi.   Qualities of an entrepreneur

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

Q. 2   Explain macro external environment and the way it influences business.

Q. 3   Explain product and service, financial and operational feasibility.

Q. 4   Explain the types of businesses on the basis of size and ownership.

UNIVERSITY OF THE PUNJAB

AD (2 Years) & BS (4 Years) Degree Program/First Semester – Spring 2025

Roll No. ....

Paper: Introduction to Media and Mass Communication
Course Code: BSCS-101

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۔

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

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

i.   What is communication process? Discuss in detail verbal and non-verbal form of communication.

i.   ابلاغی عمل کیا ہے؟ لفظی اور غیر لفظی ابلاغ کے بارے میں تفصیلاً لکھیں۔

ii.   Write a comprehensive note at different types of columns.

ii.   کالم کی مختلف اقسام کے بارے میں تحریر کریں۔

iii.   In your opinion, what is the significance of Pakistani Television channels for national image building in contemporary world?

iii.   پاکستانی قومی چینل کس طرح پاکستان کا چہرہ دنیا کو دکھا رہا ہے؟

iv.   Identify any three barriers to communication and suggest how they can be overcome?

iv.   موثر ابلاغ کی راہ میں حائل تین رکاوٹیں کون سی ہیں اور ان کو کیسے دور کیا جا سکتا ہے؟

v.   Analyze the significance to feature writing in modern journalism.

v.   جدید صحافت میں کالم نگاری کی اہمیت لکھیں۔

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

سوال نمبر 2:   درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔

i.   Examine the structure of News in detail and explain types of News with examples.

i.   خبر کی ساخت کے بارے میں تحریر کریں اور خبر کی مختلف اقسام کو مثالوں سے واضح کریں۔

ii.   Examine the significance of print media in the digital age.

ii.   ڈیجیٹل دور میں مطبوعہ صحافت کی اہمیت واضح کریں۔

iii.   Write a detailed note on the significance electronic media explain the similarities and differences among electronic and social media.

iii.   الیکٹرانک میڈیا کی اہمیت کے بارے میں لکھیں۔ سوشل میڈیا اور الیکٹرانک میڈیا کے درمیان مماثلت اور تفریق کو تحریر 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 سوالات کے مختصر جواب تحریر کریں۔

1. Briefly describe the key theories related to the evolution of language.

1 . زبان کے ارتقاء سے متعلق اہم نظریات کو مختصراً بیان کریں۔

2. Was there any English newspaper that contributed to Pakistan's independence movement?

2 . کیا کوئی انگریزی اخبار تھا جس نے پاکستان کی تحریک آزادی میں حصہ ڈالا ہو؟

3. Who was the owner of the 'Hamdard' newspaper? briefly discuss its role in the independence movement.

3 . ہمدرد اخبار کا مالک کون تھا؟ تحریک آزادی میں اس کے کردار پر مختصر بحث کریں۔

4. Who was Maulana Zafar Ali Khan? What was his journalistic role in the independence movement?

4 . مولانا ظفر علی خان کون تھے؟ تحریک آزادی میں ان کا صحافتی کردار کیا تھا؟

5. Briefly summaries the history of printing in the world.

5 . دنیا میں طباعت کی تاریخ کا مختصراً خلاصہ بیان کریں۔

6. Do you still believe that printed newspapers are effective sources for news?

6 . کیا آپ کو اب بھی یقین ہے کہ مطبوعہ اخبارات خبروں کے لیے موثر ذرائع ہیں؟

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

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

1. Analyze the role of the Muslim press in the Pakistan Independence Movement (1940–1947) and its influence on political mobilization.

i.   تحریک پاکستان)1947-1940(میں مسلم پریس کے کردار اور سیاسی تحریک پر اس کے اثرات کا تجزیہ کریں۔

2. Write a detailed note on the development of electronic media in Pakistan.

ii.   پاکستان میں الیکٹرانک میڈیا کی ترقی و ترویج پر تفصیلی نوٹ لکھیں۔

3. Analyze the rise of digital media in Pakistan and its implications for traditional journalism.

iii.   پاکستان میں ڈیجیٹل میڈیا کے عروج اور روایتی صحافت پر اس کے اثرات کا تجزیہ کریں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

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

I.   عقیدہ کا مفہوم کیا ہے؟ عقائد کی ضرورت واہمیت بیان کریں۔

II.   عقیدہ تثلیث سے کیا مراد ہے؟ اس کے متعلق قرآنی آیت مع ترجمہ لکھیں۔

III.   نماز سے متعلق دو قرآنی آیات مع ترجمہ لکھیں۔

IV.   زکوۃ کے مصارف بیان کریں۔

V.   تاریخ کا مفہوم کیا ہے؟ قرآن کا اسلوب تاریخ بیان کریں۔

VI.   بنی اسرائیل پر انعامات ربانی قرآن مجید کی روشنی میں بیان کریں۔

(3x10=30)   سوال نمبر 2:   درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔

I.   عقیدہ رسالت سے کیا مراد ہے؟ رسالت محمدی کی امتیازی خصوصیات بیان کریں۔

II.   عقیدہ آخرت سے کیا مراد ہے؟ آخرت کی اہمیت بیان کریں۔

III.   اسلامی ریاست کی تعریف اور اسلامی ریاست کے امتیازی خد و خال بیان 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: (15x2=30)

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

i. Explain the literal and terminological meaning of Seerah.

ii. Before Islam, Indian society was divided into how many classes? Write the name.

iii. Briefly describe the status of woman in Arab before Islam.

iv. Who was Bahira Rahab? What did he prophesy about the Holy Prophet (ﷺ)?

v. Explain the Silsila-tul-Jaras.

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

vii. Describe the four names of earlier converter in Islam.

viii. What was Najashi's belief about Jesus?

ix. Who followed the Holy Prophet (ﷺ) in the migration to Madinah? Also, what happened to him?

x. Why was there a need for Moakhat Madinah?

xi. Describe the two clauses of The Treaty of Madinah.

xii. Explain two reasons for the success of the Muslims in the Battle of Badr.

xiii. Write the names of two kings and their countries to whom the Holy Prophet (ﷺ) sent letters of invitation to Islam.

xiv. Describe the two salient features of Social system of the era of Holy Prophet (ﷺ).

xv. Write down the two Urdu Books with the names of authors on the topic of Seerat-un-Nabi (ﷺ).

i. سیرۃ کا لغوی و اصطلاحی مفہوم بیان کیجئے۔

ii. قبل از اسلام ہندوستانی معاشرہ کتنے طبقوں میں بٹا ہوا تھا؟ نام تحریر کیجئے۔

iii. قبل از اسلام عربوں میں عورتوں کا مختصر أمقام بیان کیجئے۔

iv. بحیرہ راہب کون تھا؟ اس نے نبی ﷺ کے بارے میں کیا پیشن گوئی کی؟

v. صلصلۃ الجرس سے کیا مراد ہے؟

vi. پہلی وحی کی آیات مبارکہ کا ترجمہ تحریر کیجئے۔

vii. السابقون الاولون کے چار نام بیان کیجئے۔

viii. نجاشی کا حضرت عیسٰی علیہ السلام کے بارے میں کیا عقیدہ تھا؟

ix. ہجرت مدینہ میں رسول اللہ ﷺ کا تعاقب کس نے کیا؟ نیز اس کے ساتھ کیا معاملہ پیش آیا؟

x. مواخات مدینہ کی ضرورت کیوں پیش آئی؟

xi. میثاق مدینہ کی دو شرائط بیان کیجئے۔

xii. غزوہ بدر میں مسلمانوں کی کامیابی کے دو اسباب بیان کیجئے۔

xiii. دو شاہان اور ان ممالک کا نام تحریر کیجئے جن کو نبی ﷺ نے دعوتِ اسلام کے خطوط ارسال فرمائے۔

xiv. عہد نبوی کے معاشرتی نظام کی دو خصوصیات تحریر کیجئے۔

xv. سیرۃ النبی ﷺ پر دو اردو کتب کے نام مع مصنفین کے اسماء گرامی تحریر کیجئے۔

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

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

i. Explain the Religious conditions of Arabs before Islam in detail.

i. قبل از اسلام عربوں کی مذہبی حالت پر تفصیلاً روشنی ڈالیے۔

ii. Discuss the causes, happenings and consequences of the migration to Madinah in detail.

ii. ہجرت مدینہ کی وجوہات، واقعات اور نتائج پر تفصیلاً بحث کیجئے۔

iii. Describe the causes and clauses of Al-Hudaybiyah.

iii. صلح نامہ حدیبیہ کی وجوہات اور شرائط بیان کیجئے۔

UNIVERSITY OF THE PUNJAB

AD (2 Years) & BS (4 Years) Degree Program/First Semester – Spring 2025

Roll No. ....

Paper: Urdu Language : Formation and Evolution
Course Code: BSU-101

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

1- زبان کیا ہے۔ وضاحت کریں

2- زبانوں کے ہند ایرانی خاندان کا تعارف کروائیں۔

3- اردو ہندی تنازع پر کوئی سے دو کتب کے نام لکھیے۔

4- بولی کسے کہتے ہیں۔ وضاحت کیجیے۔

5- اردو زبان کے ارتقا میں مقامی زبانوں کا کیا کردار ہے۔ اختصار سے بیان کریں۔

6- اردو زبان کی تشکیل کے حوالے سے حافظ محمود شیرانی کا مختصر تعارف کروائیں۔

سوال نمبر2: درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔ (3x10=30)

1- مختلف ادوار میں اردو کے مختلف نام رہے ہیں ان کی وجہ تسمیہ بیان کیجیے۔

2- اردو زبان کے تشکیل و ارتقا کے حوالے سے مسعود حسین خان کے نظریات پر نوٹ لکھیے۔

3- اردو زبان کے ارتقا میں مسلمانوں کے کردار پر نوٹ لکھیے۔

UNIVERSITY OF THE PUNJAB

AD (2 Years) & BS (4 Years) Degree Program/First Semester – Spring 2025

Roll No. ....

Paper: Poetic Genres: Introduction & Understanding
Course Code: BSU-102

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۔

(6x5=30)   سوال نمبر1:   مندرجہ ذیل سوالات کے مختصر جوابات تحریر کریں۔

ا۔   سلام کی تعریف بیان کریں۔

۲۔   ''آزاد نظم'' پر مختصر نوٹ لکھیں۔

۳۔   ہیت کے اعتبار سے اردو ادب میں رائج پانچ شعری اصناف کے نام لکھیں۔

۴۔   ''قطعہ'' اور ''رباعی'' میں فرق کو واضح کریں۔

۵۔   شعری صنف ''ہائیکو'' کا مختصر جائزہ پیش کریں۔

۶۔   ''مسدس'' سے کیا مراد ہے مختصر بیان کریں۔

(3x10=30)   سوال نمبر2:   مندرجہ ذیل سوالات کے مفصل جوابات تحریر کریں۔

ا۔   درج ذیل اصناف پر نوٹ لکھیں ۔۔

ترکیب بند   ترجیع بند

۲۔   مرثیہ کے عناصر پر تفصیل سے بحث کیجئے۔

۳۔   ''قصیدہ'' کے اجزائے ترکیبی پر تفصیل سے نوٹ لکھیں؟

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

a)
  i) Convert $(10110101.01)_2$ to octal number system.
  ii) Let $A = 110101$ and $B = 101011$, perform $A-B$ using 2's complement.

b) Simplify $F(x,y,z) = xy'z + x(y + z')' + xy'z'$ to minimum number of literals using identities and theorems of Boolean algebra.

c) Prove that $(x+y).(x'+z).(y+z) = (x+y).(x'+z)$ using truth table.

d) Manipulate the following Boolean expression in such a way so that it can be implemented using exclusive-OR and AND gates only.
  $AB'CD' + A'BCD' + AB'C'D + A'BC'D$

e) Simplify the following function into POS form using K-map
  $F(A,B,C,D) = \prod(0,1,2,3,4,10,11)$ $d(A,B,C,D) = \prod(6,13,15)$

f) Draw the circuit diagram of a 2-bit magnitude comparator that compares A_1A_0 and B_1B_0. The circuit has only one output E, such that $E=1$, if the inputs are identical.

Answer the following questions: (3x10=30)

Question#2:

Perform the following tasks:
a) Demonstrate all the steps for the construction of full adder.
b) Show the construction of a full adder using block diagrams of two half adders and an OR gate.
c) Show the construction of a four-bit adder/subtractor circuit that can add/subtract two four-bit numbers $A_3A_2A_1A_0$ and $B_3B_2B_1B_0$. The add/subtract operation is controlled by a mode bit M, such that if M=0, the circuit should perform addition and if M=0, the circuit should perform subtraction.

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 logic circuit diagram of T flip flop. Design a 3-bit synchronous counter using T flip flops with that follows the counting sequence $0 \to 2 \to 4 \to 6 \to 1 \to 5 \to$ **Repeat**

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Write the output of each of the following program: (6x5=30)

Program 1

```cpp
int main()
{
    int x = 10;
    cout << --x - 1 << ", ";
    cout << x++;

    return EXIT_SUCCESS;
}
```

Program 2

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

    return EXIT_SUCCESS;
}
```

Program 3

```cpp
int main()
{
    int y = 1;
    switch (y)
    {
        case 1:
            cout << "one" << endl;
            break;
        case 2:
            cout << "two" << endl;
        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 = 5, b = 6;
    foo(&a, b);
    cout << a << " " << b << endl;

    return EXIT_SUCCESS;
}
```

Program 5

```cpp
int main()
{
    int X[] = { 10, 25, 30, 55, 110 };
    int* p = X;

    while (*p < 110)
    {
        if (*p % 2 != 0)
            *p = *p + 3;
        else
            *p = *p + 1; 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 sphere**. The program should take the **radius** of the sphere as input from the user and display the calculated surface area.

The formula for the **surface area of a sphere** is:

$$Surface\ Area = 4\pi r^2$$

where r is the **radius** of the sphere and π (*pi*) is approximately 3.14159.

2) Write a function named **digitName** that takes an **integer (0-9)** representing a digit and returns the **English name** of the digit as a string (e.g., "One", "Two", etc.). If the input is outside the range of 0 to 9, the function should return an **appropriate message**, such as "Invalid digit number."

For example:

- For input 1, the function should return **"One"**.
- For input 5, the function should return **"Five"**.
- For input 10, the function should return **"Invalid digit number"**.

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

1. An **array of double** values.
2. An **integer** representing the number of double values 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:	8.5	6.2	0.9	4.3	1.7

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

Index:	0	1	2	3	4
Values:	1.7	4.3	0.9	6.2	8.5

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)

I. Write the Arrhenius equation and explain the significance of each term?

II. What is Bragg's Law. How is it applied in X-ray crystallography?

III. How Freundlich and Langmuir adsorption isotherms explain the adsorption process?

IV. What is the effect of temperature on Refractive Index and Molar Refraction?

V. What is the significance of the Gibbs free energy change in predicting the spontaneity of a chemical reaction?

VI. Differentiate between homogeneous and heterogeneous catalysis with suitable examples?

Answer the following questions:

Q.2. Derive the Langmuir equation and explain the assumptions involved in its derivation. How does it differ from the Freundlich isotherm [10 Marks]

Q.3 Derive the integrated rate law for a second order reaction (with same concentrations) and discuss its kinetics using a suitable example [10 Marks]

Q.4 (A) Classify the colloids and discuss any two methods for their purification [5 Marks]

(B) Explain the first law of thermodynamics. Discuss its significance and limitations? [5 Marks]

UNIVERSITY OF THE PUNJAB

AD (2 Years) & BS (4 Years) Degree Program/First Semester – Spring 2025

Roll No. ....

Paper: Fundamental Concepts of Chemical Bonding
Course Code: CHEM-116

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

(i)   Give an example of AB_5 type molecule according to VSEPR theory?

(ii)   Explain the difference between sigma (σ) and pi (π) bonds.

(iii)   What is the role of d-orbitals in the hybridization schemes of transition metal complexes according to VBT?

(iv)   Explain the shape of AB_9 molecule on the basis of VBT with examples?

(v)   Describe the sea of electrons model in metallic bonding.

(vi)   How does molecular orbital theory differ from valence bond theory in explaining bonding?

(vii)   What is electron deficient molecule?

(viii) What is the shape of ClF_2^- according to VBT?

(ix)   What is the importance of hydrogen bonding?

(x)   What are main postulates of VSEPR theory?

(xi)   Why does the bond angle in water differ from that in methane?

(xii)   Give an example of dsp^3 hybridization in AB_5 molecules.

(xiii) Explain bent bond with example.

(xiv)   How can MOT be used to predict the magnetic properties of molecules?

(xv)   How does VBT explain the concept of hybridization in carbon compounds?

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

a. Explain the structural differences in $Ni(CO)_4$ and $[Pt(NH_3)_4]^{2+}$ complexes on the basis of hybridization theory?

b. Explain the shapes of AB_7 and AB_8 type molecules on the basis of VBT with examples?

c. What are the types of intermolecular forces and what is their importance?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i.   Explain the concept of elasticity of supply.

ii.   Write down the properties of Indifference curve.

iii. Explain Average variable cost and Average total cost.

iv.   Explain Consumer Surplus with the help of diagram

v.   What is perfect competition and Write assumptions of perfect competition

vi.   Explain consumer equilibrium.

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

i.   Explain the law of Equi-Marginal utility with the help of schedule diagram.

ii.   Derive Supply Curve under perfect competition and explain.

iii. Explain the law of demand and non-price determinants of demand in detail.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

a) Write various forms of taxes?

b) What is the "Expenditure Approach" in computation of National Income?

c) Write brief account of the development of Macroeconomics after the world war-II.

d) Briefly differentiate between Real & Nominal income, and GNP &GDP.

e) Explain the Marginal Productivity Theory of classical model.

f) Explain the Macro-models as abstraction from the real economy.

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

a) What is the Business Cycle, explain its different phases in detail?

b) Explain in detail the money supply multiplier and its role in banking system.

c) Differentiate between the Balance of Trade & Balance of Payment and also write in detail the causes of deficit in BOP of Pakistan?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. What is literature. Why people study it?
2. How literature is cultural and historical?
3. What is a Sonnet, explain with examples?
4. Differentiate between Simile and Metaphor.
5. Who is your favourite poet and why?
6. How literature helps individual readers make radical changes in their lives?

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

1. A quality of beauty and intensity of emotions regarded as characteristics of poems. Write a detailed note to prove it.
2. What is drama. What are elements of drama?
3. What is novel. What are the characteristics of novel.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i.   What are the key characteristics of Renaissance literature?

ii.   How does Neoclassicism differ from Romanticism?

iii.   Name two major Romantic poets.

iv.   What were the main ideals of the Enlightenment period?

v.   What defines Victorian literature?

vi.   What are the features of Modernist literature?

Answer the following questions: (3x10=30)

Q.2. Discuss the major themes and literary characteristics of Renaissance literature. How did this period influence later literary movements?

Q.3. Examine the central themes and stylistic elements of Romanticism. How did Romantic writers respond to industrialization and rationalism?

Q.4. Discuss the emergence of Modernism in literature. What historical and cultural changes gave rise to this movement, and how is it reflected in literary form and content?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. Define digital citizenship.
2. What is the importance of peaceful dialogue in civic engagement?
3. Name any two components of social justice.
4. What is advocacy?
5. Write two civic duties of a responsible citizen.
6. Define civic engagement.

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

1. Explain the fundamental rights and liberties provided in the Constitution of Pakistan 1973.
2. Discuss the concept and significance of community engagement for social harmony.
3. Explain how digital platforms promote civic engagement, along with their ethical challenges.

UNIVERSITY OF THE PUNJAB

AD (2 Years) & BS (4 Years) Degree Program/First Semester – Spring 2025

Paper: Application of Information & Communication Technologies
Course Code: GE-160   **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) Describe cloud storage briefly with example.

b) What is the purpose of an operating system?

c) List several different pointing devices and describe their functions.

d) What are the key features of Google Workspace?

e) Discuss FONT-related tools in MS Word. How can they be used to organize and present data effectively?

f) What is the primary function of mobile wallets like (Jazz Cash and Easy paisa etc.)?

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

a) How does Google Classroom help teachers and students?

b) Discuss the role of ICT in promoting e-commerce platforms.

c) Describe the purposes of scanners and readers and list some types of scanners and readers in use today.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. Of 70 people surveyed, 37 drink coffee, 23 drink tea, and 25 drink neither. Find the number who drink both coffee and tea.

2. If $f(x) = x^2$ and $g(x) = x + 1$, then find $(f \circ g)(x)$.

3. Determine whether the function $f(x) = 2x + 3$ is one-to-one (injective).

4. Check if $(p \to q) \leftrightarrow (q \to p)$ is a tautology.

5. Find the number of distinct positive integer multiples of 2, 3, 5, 7, or 11 not exceeding 3000.

6. How many edges does the complete graph K_n have?

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

Question 2. For each of the following sentences, write down the sentence in logical notation, negate the sentence, and say whether the sentence or its negation is true:

     a) There is an integer greater than all other integers.

     b) Every even number is a sum of two odd numbers.

     c) All natural numbers divisible by 2 and by 3 are divisible by 6.

Question 3. How many strings of eight English letters are there

     a) that contain no vowels, if letters can be repeated?

     b) that contain no vowels, if letters cannot be repeated?

     c) that start with a vowel, if letters can be repeated?

     d) that start with a vowel, if letters cannot be repeated?

     e) that contain at least one vowel, if letters can be repeated?

Question 4.

     a) Prove that if n is a positive integer, then n is odd if and only if $5n + 6$ is odd.

     b) Express the statements "Some student in this class has visited Mexico" and "Every student in this class has visited either Canada or Mexico" using predicates and quantifiers.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i. Explain the superposition principle for electric forces.

ii. What is an electric dipole moment?

iii. A closed surface contains two charges: $+4q$ and $-q$. What is the total electric flux through the surface?

iv. What is equipotential surface, draw an equipotential surface

v. State Faraday's law of induction.

vi. What is meant by a grounded conductor?

vii. What is the magnitude of the electric field at the point $(-1i+2j-3k)$ m if the electric potential is given by $V=5.00xyz^2$, where V is in volts, and x, y, and z are in meters?

viii. State the Biot-Savart law.

ix. What is an induced magnetic field?

x. Explain total internal reflection.

xi. Define diffraction.

xii. Which of the basic equations of electromagnetism were modified by Maxwell, and what is its modified form?

xiii. Explain Lenz's law and its importance in predicting the direction of induced current.

xiv. A $+10\ \mu C$ charge is placed 0.5 m away from a $-5\ \mu C$ charge. What is the ratio of the force exerted on the first charge to the force exerted on the second charge?

xv. What is difference between patterns generated from single slit and double slit interference

Answer the following questions:

Q.2 **(a)** Explain Gauss's law and apply it to find the electric field due to a uniformly charged spherical shell. **(6 Marks)**

(b) What is the electric potential at point P, located at the center of the square of charged particles? The distance **d** is 1.3m (**d** be the length of each side of the square), and the charges are $q_1=$ +12nC, $q_2=$-24 nC, $q_3=$ +31 nC, $q_4=$ +17 nC. **(4 Marks)**

Q.3 **(a)** Explain the potential energy of a two-charge system and its relation to the work done in assembling the system of charged particles. **(6 Marks)**

(b) Explain Ampere's law and use it to find the magnetic field inside a long solenoid. **(4 Marks)**

Q.4 **(a)** What is polarization of light? Discuss its types and give one practical application of polarization. **(6 Marks)**

(b) A double-slit arrangement produces interference fringes for sodium light ($\lambda=$ 589 nm) that have an angular separation of 3.50×10^{-3} rad. For what wavelength would the angular separation be 10.0% greater? **(4 Marks)**

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i) Define **subject-verb agreement** with examples of common errors and their corrections.

ii) What is **affixation** in word formation? Give four examples.

iii) Distinguish between **skimming** and **scanning** with appropriate examples.

iv) Briefly describe **gender-neutral language** with examples.

v) What are the elements of **effective listening** and why is active listening important in communication?

vi) Use the following words in sentences to show their **idiomatic usage**:

- Break the ice
- Under the weather

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

1- Explain with examples the key principles of **effective communication** (clarity, coherence, conciseness, etc.). How can these be applied in both academic and professional settings?

2- Analyze a short passage (provided in the exam) for **tone, bias, assumptions, and inferences**. Explain the significance of these elements in critical reading.

3- Write a **formal business email** to a potential employer requesting an internship opportunity. Focus on structure, tone, and clarity.

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 questions: **(6x10=60)**

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

ا۔ دوسرے مذاہب کے ساتھ رویہ پر مضمون لکھئے۔

۲۔ بدھ مت کی پانچ اخلاقی تعلیمات لکھئے

۳۔ معاشرتی زندگی میں اخلاقیات کی اہمیت لکھئے۔

۴۔ اخلاقیات کے مختلف تصورات کی وضاحت کریں۔

۵۔ "تصورِ فلاح" کے بارے میں آپ کیا جانتے ہیں؟

۶۔ اسلام کی اخلاقی تعلیمات بیان کریں۔

1. Write down a note on attitude towards other religions.

2. Write down the five Ethical values of Buddhism.

3. Write down the importance of Ethics in social life.

4. Explain the different concepts of Ethics.

5. What do you know about the concept of " Falah" ?

6. Describe the Ethical teachings of Islam.

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 notes on the following: **(5x6=30)**

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

i.   What is Ideology?

i- آئیڈیالوجی کیا ہے؟

ii.   Two Nation Theory

ii- دو قومی نظریہ

iii.   Objectives Resolution 1949

iii- قرارداد مقاصد 1949

iv.   PRODA

iv- پروڈا

v.   18th Constitutional Amendment

v- اٹھارویں آئینی ترمیم

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

درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔

Q. No. 2. Discuss the Allahabad Address of Allama Muhammad Iqbal.

سوال نمبر 2- علامہ محمد اقبال کے خطبہ الہ آباد پر بحث کریں۔

Q. No. 3. Explain the responsibilities of Pakistani Citizens according to the Constitution 1973.

سوال نمبر 3- آئین 1973 کے مطابق پاکستانی شہریوں کی ذمہ داریوں کی وضاحت کریں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. Describe each of the six criteria air pollutants identified by the United States Environmental Protection Agency.

2. Explain the process of global warming and the greenhouse effect through Diagram

3. Define sustainable development. What are the three pillars of sustainable development? Mention any five SDGs.

4. Discuss the impacts of air pollution in urban areas.

5. Define 'ecosystem services and explain how these services contribute to human well-being and environmental sustainability. Additionally, discuss the potential consequences of ecosystem degradation on these services.

6. Define 'climate skepticism' and outline its main arguments. Then, using scientific evidence, counter these arguments to demonstrate the reality and seriousness of climate change.

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

1. Describe the concept of sustainable living and discuss the role of individuals in contributing to sustainability. Provide specific examples of actions and lifestyle choices that individuals can adopt to promote a sustainable future.

2. Explain environmental racism and provide a detailed example illustrating its occurrence.

3. Differentiate between the Kyoto Protocol and the Paris Agreement.

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

a) Describe three virtues of the Holy Quran.

الف۔ قرآن مجید کے تین فضائل بیان کریں۔

b) Write a blessed hadith with translation on protection of hadith.

ب۔ حفاظت حدیث پر ایک حدیث مبارکہ مع ترجمہ تحریر کریں۔

c) Which person is said to be poor in the hadith.

ج۔ حدیث میں غریب کس شخص کو کہا گیا ہے؟

d) Write the names of the Prophet's (ﷺ) daughters.

د۔ نبی کریم ﷺ کی بیٹیوں کے نام لکھیے۔

e) When did the Battle of Uhud take place and explain two reasons for it?

ہ۔ غزوہ احد کب پیش آیا اور اس کے دو اسباب بیان کریں؟

f) Write only the names of the four main sources of Islamic jurisprudence.

و۔ فقہ اسلامی کے پانچ ماخذ کے صرف نام تحریر کریں۔

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

درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔

Q. No.2: Give translation and explanation of the following Ahadith.   (6+4=10)

سوال نمبر 2:   درج ذیل حدیث کا ترجمہ و تشریح کیجیے۔ (6+4=10)   نوٹ: (ترجمہ کے "6" اور تشریح کے "4" نمبر ہیں)

عَنْ أَبِي سَعِيدٍ، عَنِ النَّبِيِّ صَلَّى اللهُ عَلَيْهِ وَسَلَّمَ قَالَ: «التَّاجِرُ الصَّدُوقُ الأَمِينُ مَعَ النَّبِيِّينَ وَالصِّدِّيقِينَ وَالشُّهَدَاءِ۔

Q. No.3: Write a detailed note on the Caliph Hazrat Ali .

سوال نمبر 3:   حضرت علی المرتضیٰ رضی اللہ عنہ پر تفصیلی نوٹ تحریر کریں۔ (10)

Q. No.4: Write in detail on the status of woman in Islam.

سوال نمبر 4:   اسلام میں عورت کے مقام پر تفصیل سے تحریر کریں۔ (10)

ETHICS (For Non-Muslim Candidates)

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

نوٹ: مندرجہ ذیل سوالات کے جواب تحریر کیجئے۔

Q. 1.   Explain the different concepts of Ethics (Ancient and Contemporary)

سوال نمبر 1۔   اخلاقیات کے قدیم اور عصری تصورات کی وضاحت کریں۔

Q. 2.   Explain the importance of Ethics in social life.

سوال نمبر 2۔   سماجی زندگی میں اخلاقیات کی اہمیت کی وضاحت کریں۔

Q. 3.   Compare the Ethical Teaching and values between Islam and Christianity.

سوال نمبر 3۔   اسلام اور عیسائیت کے درمیان اخلاقی تعلیم اور اقدار کا موازنہ کریں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

a. Species
b. Limiting factors
c. Biotic Factors
d. Population dynamics
e. Branches of Ecology
f. Biomes of the world

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

1. Write a note on Terrestrial and aquatic system in Pakistan, discuss potential threats to these system.
2. Explain the role of temperature, soil, and water as ecological factors.
3. Discuss the primary and secondary productivity and productivity of different ecosystem.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

(i) Distribute 28 rabbits among three friends in the ratio of $2 : 4 : 1$.

(ii) Verify associative law of intersection for the following sets:
$$A = \{1,2,3,\dots,10\}, \qquad B = \{2,3,5,7\}, \quad C = \{4,6,8,9,10\}.$$

(iii) If the purchase price of a basket is Rs. 300. Find the sale price if the shopkeeper takes 20% profit.

(iv) Solve the following system of equations:
$$x + y = 5$$
$$4x + 3y = 18.$$

(v) How many arrangements of the word PAKISTAN are made if all are taken together.

(vi) Solve the quadratic equation $-x^2 + 4x + 12 = 0$.

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

Q. 2 Two dice are thrown twice. What is the probability that the sum of the dots shown in the first throws is 7 and that of the second throws is 11?

Q. 3 Aslam started a business with Rs. 35000. After 3 months Akram joined the business with Rs. 4000 and after 6 months Asgher invested Rs. 5000. At the end of the year they earned a profit of Rs. 1620. Find the share of each in the profit.

Q. 4 Define Hero's formula and by using it find the area of the triangle whose sides are 4cm, 5cm, 6cm. Also find the perimeter of this triangle.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. Which area of Home Economics focuses on Dietary Intake and Nutritional Concerns? Briefly explain the discipline
2. What are the goals of Home Economics?
3. Briefly discuss scope of Home Economics.
4. Enlist the names of colleges teaching Home Economics in Pakistan?
5. Which teaching methods are effective in Home Economics Education? Briefly discuss use and significance of study based field trips in Home Economics.
6. Define Home Economics. Enlist major areas of Home Economics. What is your discipline of interest and why?

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

1. Discuss the SIGNIFICANCE OF HOME ECONOMICS in detail.
2. What are the ROLES AND RESPONSIBILITIES of a Home Economist towards family, community and profession? Discuss in detail.

UNIVERSITY OF THE PUNJAB

AD (2 Years) & BS (4 Years) Degree Program/First Semester – Spring 2025

Paper: History of Islam (610 – 750 A.D.)	Course Code: HIS-102	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۔

Q.1. Write short note on the following: **(5x6=30)**

سوال نمبر1:   درج ذیل پر مختصر نوٹ تحریر کریں۔

i. Dhimies

i- ذمی

ii. Conquest of Khyber

ii- فتح خیبر

iii. Battle of Muta.

iii- غزوہ موتہ

iv. Hazrat Usman (R.A).

iv- حضرت عثمانؓ

v. Battle of Ahzab

v- جنگ احزاب

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

درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔

Q. No. 2. Write a comprehensive note on the importance of conquest of Makkah.

سوال نمبر2۔ اسلامی تاریخ میں فتح مکہ کی اہمیت پر جامع نوٹ لکھیں۔

Q. No. 3. How did the advent of Islam influence the socio-political conditions of Arab?

سوال نمبر 3 ۔ آمد اسلام نے کس طرح عربوں کے سیاسی اور سماجی حالات کو متاثر کیا؟

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.　Give short answer to the following concepts:　　　　　　**(6x5=30)**

(i)　　　Find the domain and range of each function

$$f(x) = \frac{1}{x}, \quad f(x) = \sqrt{5x + 10}$$

(ii)　Evaluate $\int_1^2 \frac{x^2+1}{x+1} dx$

(iii)

　　　Discuss the continuity of the function $f(x) = \begin{cases} x\sin\dfrac{1}{x}, & \text{if } x \neq 0 \\ 0, & \text{if } x = 0 \end{cases}$　　at $x = 0$

(iv)　　　Find the limit of the function. $\lim_{x \to 0} \dfrac{\sin 2x}{|2x|}$

(v)　Examine the function defined as $f(x) = x^3 - 6x^2 + 9x$ for extreme values

(vi)

　　Evaluate $\displaystyle \lim_{x \to 0} \frac{x + x\cos x}{\sin x \cos x}$

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

Q.2
Discuss the continuity at x = 1, when $f(x) = \begin{cases} 2x^2 + 2, & \text{if } x \leq 1 \\ x^2 + 3, & \text{if } \quad x > 1 \end{cases}$

Q.3　(a)
　　Solve $\displaystyle \int \frac{x+a}{x^2 + 2ax + b} dx$

　　(b)
　　Solve $\displaystyle \int_{-1}^{2} (1 - |x|) dx$

Q.4
Differentiate $\dfrac{\sqrt{1+x^2} - \sqrt{1-x^2}}{\sqrt{1+x^2} + \sqrt{1-x^2}}$ with respect to $\arccos x^2$

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. Describe the importance of teacher in elements of education.

2. Differentiate between formal and nonformal modes of education.

3. Describe the role of an education policy in development of the education system.

4. Write the significance of Single National Curriculum in the light of national education policy 2021.

5. Write a note on the role of Higher Education Commission of Pakistan.

6. What is literacy? Write the main causes of illiteracy.

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

1. Write a comprehensive note on Hazrat Muhammad (SAW) as a teacher.

2. Write a note on globalization and women education in the light of Education Sector Reforms 2001.

3. What are your understandings regarding the future prospects of education in Pakistan?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

I.   Define social justice.
II.   What is the purpose of reflection in an action plan?
III.   How can you define intercultural communication?
IV.   What does the term "Climate Change" means?
V.   Define global citizenship.
VI.   Write any three strategies for sustainable living.

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

I.   Write different components of cultural diversity.
II.   How can we create awareness about global Inequalities?
III.   What are the challenges we face in global governance?

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

(i) Prove the identity $cos\theta + tan\theta sin\theta = sec\theta$.

(ii) Evaluate $\dfrac{tan\frac{\pi}{3} - tan\frac{\pi}{6}}{1 + tan\frac{\pi}{3} tan\frac{\pi}{6}}$.

(iii) Find the 5th term of the geometric progression $3, 6, 12, \dots$.

(iv) Find the domain and range of the function $g(x) = \sqrt{x - 3}$.

(v) Discuss the continuity of $f(x)$ at $x = -2$ for

$$f(x) = \begin{cases} 5x + 1 & if\ x \leq -2 \\ 2x - 5 & if\ x > -2. \end{cases}$$

(vi) Determine whether the given matrix is singular or not: $\begin{bmatrix} 1 & 1 & 3 \\ 5 & 2 & 6 \\ -2 & -1 & -3 \end{bmatrix}$.

Answer the following questions: (3x10=30)

Q. 2 Find three arithmetic means (A.Ms) between $\sqrt{2}$ and $3\sqrt{2}$.

Q. 3 Show that $y = x^x$ has an extreme value at $x = \dfrac{1}{e}$.

Q. 4 Using Cramer rule, solve the following system

$$\begin{aligned} x + y + 2z &= 1, \\ 2x - y + 8z &= 12, \\ 3x + 5y + 4z &= -3. \end{aligned}$$

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Give short answer to the following concepts: **(6x5=30)**

(i) Find domain and range for the following functions

    (a) $f(x) = \sqrt{4 - x^2}$ **(b)** $f(x) = \frac{1}{\sqrt{1-x}}$

(ii) Draw the graphs of functions $f(x) = \sqrt{4 - x^2}$ and $f(x) = \frac{1}{\sqrt{1-x}}$

(iii) Find the limit, $\lim_{x \to 3} \frac{27 - 3x^4 + 24x^2}{x^3 - 27}$

(iv) Differentiate w.r.t x, $y^3 \sin x + \cos(x^2 y^3) = 0$

(v) Determine the arc length of $y = x^2(3x^3 + 1)^3$ over $[1,2]$.

(vi) Find nth derivative of $f(x) = e^{3x}$

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

Q.2   **(a)** If f is a continuous function at $x = 1$ then find the values of a *and* b, where

$$f(x) = \begin{cases} ax - 2b + 1, & x < 1 \\ -4 - bx + ax^2, & x > 1 \\ 1, & x = 1 \end{cases}$$

(b) Apply L.Hospital Rule to evaluate the limit, $\lim_{x \to 0} \frac{1 - e^{5x^3}}{x^3}$

Q.3   **(a)** Calculate the surface area of the surface obtained by revolving the curve $y = \frac{x^3}{3}$ around the x-axis over the interval $[1,2]$.

(b) Find area bounded by the parabolas $x = \sqrt{y}$ and $y = \sqrt{x}$.

Q.4   **(a)** State Mean Value Theorem and give its geometrical interpretation. Apply this theorem to find the value of c in the open interval $(-1,1)$ such that $\frac{df}{dx}(c) = 0$, where $f(x) = \sqrt{x^2 - 5x + 4}$, $x \in [-1,1]$

(b) Evaluate $\int \frac{\sin \sqrt{x}}{\sqrt{x} \cos(\sqrt{x})} dx$

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i.   What is the physical meaning of a gradient and a curl?
ii.   Distinguish between impulse and momentum.
iii.   Define pseudo forces with an example.
iv.   Define rotational variables and give examples.
v.   What is the physical significance of the moment of inertia?
vi.   State and explain the conservation of angular momentum.
vii.   Distinguish between conservative and non-conservative forces.
viii.   Mention any two applications of the Shell theorem.
ix.   State Kepler's law of Areas.
x.   A container with mass of 5kg is lifted to a height of 8m. How much work is done by the external force?
xi.   Write Newton's second Law in angular form.
xii.   What is Free-body diagram?
xiii.   How are black holes formed?
xiv.   How is heat transferred in convection?
xv.   Define center of mass energy.
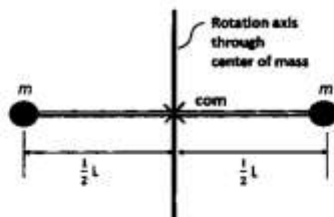

Answer the following questions:

Q. 2. **(a)** Explain the effect of drag force on the speed of an object moving through air. **(5 Marks)**

(b) A block of mass m=3.63kg slides on a horizontal frictionless table with a speed of v=1.22 m/s. It is brought to rest in compressing a spring in its path. By how much is the spring compressed if its force constant k=135 N/m? **(5 Marks)**

Q3. **(a)** Explain and prove work-energy theorem. **(5 Marks)**

(b) Given figure shows a rigid body consisting of two particles of mass m connected by a rod of length L and negligible mass. (a) What is the rotational inertia I_{com} about an axis through the center of mass, perpendicular to the rod as shown? **(5 Marks)**

Q4. **(a)** Calculate the gravitational potential energy of a system of particles. Explain the energy requirements for a particle to escape from an astronomical body **(5 Marks)**

(b) The Martian satellite Phobos travels in an approximately circular orbit of radius 9.4 $\times 10^6$ m with a period of 7 h 39 min. Calculate the mass of Mars using Kepler's law. (G= 6.67×10^{-11} m³/s².kg) **(5 Marks)**

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

a) Differentiate between the following terms by giving suitable examples of each.
   i.   Subjective & objective approaches of probability
   ii. Regression & correlation
   iii. Dependent & independent events

b) A poker hand consisting of 5 cards is drawn randomly from a deck of 52 playing cards. What is the probability that
   i.   all cards are numbered cards.
   ii. it contains at least 3 aces.

c) A box consists of 5 jazz CDs, 2 classical CDs and 3 rock CDs. 4 CDs are selected randomly from this collection and the number of jazz CDs is observed. Compute the probability distribution for the number of jazz CDs.

d) A random sample of 100 workers with children in day-care shows a mean day-care cost of Rs. 2,600 and a standard deviation of Rs. 500. Verify the department's claim that the mean exceeds Rs. 2,500 at the 0.05 level of significance.

e) What are type-I and type-II errors? Explain with the help of examples.

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

1. The proportion of people who respond to a certain mail-order solicitation is a continuous random variable X that has the following density function:

$$f(x) = \frac{2}{5}(x + 2) ; \quad 0 \quad x \quad 1$$

   i.   Show that $P(0 < X < 1) = 1$.
   ii. Find the probability that more than 1/4 but fewer than 1/2 of the people contacted will respond to the mail-order.
   iii. Compute $P(X > 0.5)$ and $P(X = 3/4)$.
   iv. Find $Var(X)$ and the third moment about origin.
   v.   Construct the distribution function.

2. Two plastics each produced by a different process were tested for ultimate strength. The measurements shown below represent the breaking load in thousand pounds per square inch. Assuming the data to be normally distributed, and having equal variances, test the hypothesis of no difference in the distribution of strength of two plastics at 5% level of significance.

Plastic I	15.3	18.7	22.3	17.6	15.1	14.8
Plastic II	21.2	22.4	18.3	19.3	17.1	27.7

3. In a software development firm, the management team is keen on understanding how different programming aptitude levels might influence the efficiency of code compilation, measured in time taken (in seconds). For this purpose, the team has collected aptitude test scores of 8 programmers alongside their corresponding code compilation times. Fit a linear regression model to predict code compilation time based on programmers' aptitude test scores.

Aptitude Test Scores	57	58	59	59	60	61	62	64
Code Compilation Time	67	68	65	68	72	72	69	71

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i.   Name any three branches of zoology and their focus areas.
ii.   What are the functions of carbohydrates and proteins in living organisms?
iii. What is the primary function of the cell membrane?
iv.   Explain the difference between cellular respiration and photosynthesis.
v.   Define natural selection and give an example.
vi.   Describe the life cycle of an amphibian.

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

i.   Compare and contrast prokaryotic and eukaryotic cells in terms of structure and function. Discuss the significance of cellular organization in the evolution of life.

ii.   Explain the principles of Mendelian genetics with examples of dominant and recessive traits. Discuss the role of chromosomes in inheritance and the impact of mutations on genetic variation.

iii. Explain the principles of taxonomy and classification, highlighting the importance of phylogenetic trees in understanding evolutionary relationships. Provide an overview of the diversity within the animal kingdom.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. Differentiate between analysis and conclusion?
2. What causes a tropical cyclone to form?
3. What is a landslide?
4. How do earthquakes trigger tsunamis?
5. What is a volcanic eruption and lava?
6. What is liquefaction during an earthquake?
7. How can human activities contribute to landslides?
8. What factors influence the occurrence of floods?
9. What is the primary cause of wildfires?
10. How do droughts impact the environment?
11- What is a Scientific Method?
12- Define Hypothesis?
13- Which is the first step of a scientific method?
14- What is the importance of stratosphere?
15- What is the function of barometer and rain gauge?

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

1   What is a galaxy. Explain different types of galaxies?
2   What is a geo-hazard. What causes a landslide?
3   What is a geomorphic process. Explain different types of geomorphic processes?

UNIVERSITY OF THE PUNJAB

AD (2 Years) & BS (4 Years) Degree Program/First Semester – Spring 2025

Roll No. ....

Paper: Fundamentals of Disaster Management (NS)
Course Code: NDM-120

Time: 3 Hrs.   Marks: 60

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i.   What is Natural Hazards?

iii.   Define the idea of vulnerability?

iii.   Classify the disasters.

iv.   What is heat wave?

v.   Explain the mitigation strategies.

vi.   Define the level of risk.

vii.   What is land-slide?

viii.   What is anthropogenic disaster?

ix.   Write about the concept of capacity building.

x.   Explain the Epilogue.

xi.   What are the impact of disaster on environment?

xii.   Explain the biological hazard.

xiii.   Write about risk management.

xiv.   What is NDMA?

xv.   What is Resilience?

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

i.   Write about the disaster relief equipments and tools.

ii.   Write about smog a disaster and its mitigation measures.

iii.   What is socio-natural disaster?

UNIVERSITY OF THE PUNJAB

AD (2 Years) & BS (4 Years) Degree Program/First Semester – Spring 2025

Roll No. ....

| Paper: What is Science? (NS) | Course Code: NHPY-110 | 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. What is science? Write about an application of science in our daily lives.

2. How do observations lead to predictions in science?

3. Define objectivity and its importance in science.

4. What are the main inventions in the period of China Civilization?

5. What is the role of laws in scientific theories?

6. What does modern science look like today?

7. How is ancient scientific inquiry different from modern methods?

8. What is Chemistry? Name at least three of its branches.

9. What is the difference between DNA and RNA?

10. What is the role of science communication in spreading knowledge?

11. Write the differences between classical and modern physics.

12. Define Astrophysics.

13. What are the main processes involved in an ecosystem?

14. What is Earth science?

15. What is the theory of evolution?

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

1. How did early modern European science evolve? Provide examples of scientific discoveries during this time.

2. Explain the positive and negative impacts that scientific advancements can have on society.

3. Describe how different levels of biological organization (cells, tissues, organs, systems) interact to maintain homeostasis in the body.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. What we study in Astronomy?
2. Enlist any three important concepts of Chemistry?
3. Differentiate between science and philosophy.
4. How Technology is related to natural sciences?
5. How do you classify natural sciences?
6. Enlist any three benefits of natural sciences.
7. Which type of natural science helps to design Calendars of the year?
8. What we study in Biology?
9. Is there any negative impact of Chemistry?
10. What are Hypothesis and observation?

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

1. What are interdisciplinary sciences? How these sciences are serving to solve the current issues?
2. Elaborate the impact of following sciences on society.
    a. Biology
    b. Earth Sciences

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1: Define the following (2.5 marks each)
   a) Nutrition
   b) Malnutrition
2: What is meant by Balanced Diet? Explain with examples
3: Write functions of water in human body.
4: Write classification of carbohydrates in detail.
5: Why are dietary fats important? Write their function in detail.
6: Write classification of protein on the basis of function.

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

1: How are vitamins classified? Write a detailed note on functions of vitamin C in the body

2: Write functions of Iron in human body. Also write about signs and symptoms of iron deficiency anemia.

3: Explain the process of digestion in human body. Also write about the role of digestive juices and secretions in the process of digestion.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. Explain how pulleys lift heavy objects in construction and daily activities.
2. Describe how magnetic fields are used in electric generators to produce electricity.
3. Discuss the role of fiber optics in modern communication systems.
4. What are the principles behind hydroelectric energy generation using dams?
5. Explain the significance of space telescopes in exploring the universe.
6. Outline the structure of the atom and its relevance to nuclear energy.

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

1. Analyze the working of cameras and how the principles of optics are applied in photography.
2. Discuss the challenges and benefits of implementing renewable energy technologies like solar and wind energy in modern society.
3. Explain the biomechanics of prosthetics and their role in improving mobility and quality of life for individuals.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Write short essays on the following.   **(6x5=30)**

i.   Contribution of any two Muslims in science

ii.   Camera

iii. Vaccines

iv.   Balanced diet

v.   Chromosomes and genes

vi.   Human behaviour

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

Q. 2   Write about impact of science on society?

Q. 3   Discuss about protein with suitable sketches in detail.

Q. 4   Give a comprehensive note on Microscope.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Give short answer to the following concepts: **(5x6=30)**

i. Define Science and Elaborate various branches of science.
ii. Define Green Chemistry and discuss the chemistry of detergents and shampoo.
iii. Differentiate the renewable and non-renewable.
iv. Write a short on Global warming
v. Discuss briefly climate change and its impacts.

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

Q.NO.2 Write a detailed note on Natural hazards and discuss Earthquake and Tsunami.

Q.NO.3 Discuss briefly Floods and Salinity and its impact on human

Q.NO.4 Write a detailed note on Wildfire and discuss as a disaster and its risk management.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

  i.   Describe the main components of the abiotic or non-living environment.

  ii.   Differentiate between interspecific and intraspecific associations in the biotic environment.

  iii.   What causes ozone depletion, and why is it a concern?

  iv.   Define desertification and its primary causes.

  v.   Discuss the adverse impacts of agrochemicals on soil quality.

  vi.   Explain the implications of chemical and biological warfare on the environment.

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

  1. Explain the causes, effects, and control measures for radioactive pollution.

  2. Describe the sewage water treatment process in detail.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. What are the key differences between forehand and backhand strokes in badminton?
2. Describe the rules of scoring in badminton singles matches.
3. Explain the techniques involved in a successful basketball shot.
4. Discuss the significance of defensive strategies in basketball and their impact on the game.
5. What are the basic rules of football, and why are they essential for fair play?
6. Describe the importance of shooting accuracy in football and the techniques used to improve it.

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

1. Examine the various types of badminton serves and their tactical importance in a match.
2. Explain the offensive and defensive strategies commonly employed by basketball teams during scrimmage.
3. Discuss the practical sessions involving skill drills and how they prepare players for full-field simulations in football.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. What are the key principles of sprinting that every sprinter should follow?
2. How does the start phase set the tone for the rest of a sprint race?
3. Discuss the importance of timing exercises in improving sprint performance.
4. What are the challenges in maintaining maximum velocity during a sprint, and how can they be addressed?
5. Highlight the benefits of interval training for sprint speed development.
6. Explain the role of practical sessions in designing effective sprint training programs.

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

1. Discuss the phases of sprinting, providing a detailed analysis of the transition between acceleration and maximum velocity.
2. Design a comprehensive sprint technique development plan, including drills for start, acceleration, and maximum velocity.
3. Discuss the role of endurance training in sprint performance and how it complements speed and strength training.

UNIVERSITY OF THE PUNJAB

AD (2 Years) & BS (4 Years) Degree Program/First Semester – Spring 2025

Roll No. ....

Paper: Political Science - History and Foundational Philosophies
Course Code: PS-101

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۔

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

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

۱) روایتی انداز فکر سے کیا مراد ہے؟

i.   What is meant by Traditional Approach?

۲) عدلیہ کے تین فرائض بیان کریں۔

ii.   Write down any three functions of Judiciary.

۳) اسلامی نظریہ اقتدار اعلیٰ سے کیا مراد ہے؟

iii.   What is meant by Islamic Sovereignty?

۴) عاملہ کی دو اقسام لکھیں۔

iv.   Write down two types of Executive

۵) سیاسیات اور معاشیات میں فرق کے دو نکات لکھیے۔

v.   Write any two differences between Political Science and Economics.

۶) معاشی طاقت سے کیا مراد ہے؟

vi.   Write briefly on economic power.

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

سوال نمبر 2:   درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔

۱) سلوکی یا رویہ جاتی انداز فکر پر جامع نوٹ لکھیے۔

i.   Write down a comprehensive note on Behavioral Approach.

۲) ریاست کے فرائض پر تفصیل لکھیے۔

ii.   Write a detailed note on functions of State.

۳) مقننہ کے فرائض بیان کریں۔

iii.   Explain the functions of Legislature.

UNIVERSITY OF THE PUNJAB

AD (2 Years) & BS (4 Years) Degree Program/First Semester – Spring 2025

Roll No. ....

Paper: Political Science : Elements and Contemporary Discourses
Course Code: PS-102

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. Write a note on Autocracy and its features.
2. Explain the Constitutional Government in detail.
3. Write a note on Populism and its causes.
4. Define Rights and explain its kinds.
5. Differentiate between Law and Morality.
6. Define Liberty and explain its kinds.

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

1. Define Federation and explain its features.
2. What is Parliamentary form of government? Discuss its merits and demerits.
3. Explain the term Rule of Law and write its importance.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Give short answer to the following concepts: (15x2=30)

(i)- State Newton's law of gravitation and write its mathematical form.

(ii)- State Kepler's first law of planetory motion. Briefly explain it.

(iii)- The law of conservation of linear momentum, as applied to a single particle, is equivalent to Newton's first law of motion. Justify this statement.

(iv)- Can Newton's first law be considered simply a special case of second law with $\vec{a} = 0$? If so, is first law really needed?

(v)- How an airbag in a car may help to protect a passenger from seroius injury in case of collision?

(vi)- A container with mass 5kg is lifted to a height of 8m. How much work is done by the external force?

(vii)- Why a man become physically tired when he push against a wall, fail to move it, and therefore do no work on the wall.

(viii)- Can an object have momentum without having kinetic energy?

(ix)- Give some examples of conservative and non-conservative forces.

(x)- What happens to the potential energy that is lost as an elevator descends from the top of a building to a stop at the ground floor?

(xi)- Does a swinging pendulum coming to rest violate conservation of mechanical energy?

(xii)- Write Newton's second law in angular form.

(xiii)- We can distinguish between a raw egg and a hard boiled one by spinning each one on a table. Explain.

(xiv)- Explain why changing the axis of rotation of an object changes its moment of inertia.

(xv)- Can angular momentum of an object increase without changing its linear momentum? If yes, give an example. If not prove it.

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

(i)- Discuss elastic collision in one dimension. Show that relative velocity of approach before collision is equal to velocity of recession but opposite in direction. Find velocities of objects after collision in this case.

(ii)- What is meant by conservation of mechanical energy? Derive law of conservation of mechanical energy for a conservative force.

(iii)- What is moment of inertia? Calculate moment of inertia of a solid sphere about its diameter.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Give short answer to the following concepts: **(6x5=30)**

(i)   Evaluate $\int_{1}^{2} \frac{x^2 + 1}{x + 1} dx$

(ii)   Discuss the continuity of the function $f(x) = \begin{cases} \dfrac{x^2 - 4}{x - 2} & \text{if } x \neq 2 \\ 4 & \text{if } x = 2 \end{cases}$ at $x = 2$.

(iii)   Evaluate $\lim\limits_{x \to 0} \dfrac{\cos ecx - \cot x}{x}$

(iv)   Evaluate $\int_{-\infty}^{\infty} xe^{-x^2} dx$.

(v)   Evaluate $\lim\limits_{x \to 0} (1 + \sin x)^{\cot x}$

(vi)   Discuss the continuity of the function $f(x) = \begin{cases} x \sin \dfrac{1}{x}, & \text{if } x \neq 0 \\ 0, & \text{if } x = 0 \end{cases}$ at $x = 0$

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

Q.2   Find the first four terms of the Taylor series of the function $f(x) = \sqrt{x + 1}$ at $a = 0$.

Q.3   Evaluate $\lim\limits_{x \to 0} (1 + \sin x)^{\cot x}$

Q.4   Examine the convergence of $\int_{0}^{\infty} e^{-x} x^{n-1} dx$.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Give short answer to the following concepts: **(5x6=30)**

1. If $y = \dfrac{1}{x^2}$, the find $\dfrac{dy}{dx}$ at $x = 1$.

2. Examine the function defined as $f(x) = 1 + x^3$ for extreme values.

3. Show that $y = \frac{\ln x}{x}$ has maximum value at $x = e$, if possible; otherwise, provide a justification.

4. Show that $\varphi(x) = x^2$ is continuous on $\mathbb{R}$, if possible; otherwise, provide a justification.

5. Solve $\int x \sin x \, dx$, if possible; otherwise, provide a justification.

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

1. Show that $\dfrac{1}{x}$ is continuous on $A := \{x \in \mathbb{R} : x > 0\}$.

2. Sketch the graph of the function $f(x) = x^2 + 6x + 10$

3. If $f(x) = \sqrt{x}$ and $g(x) = \sqrt{2 - x}$, then find $g \circ f$ and its domain.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Define the following: (5x6=30)

1. sociology
2. culture
3. Social Problem/Sociological Issues
4. Agents of Socialization.
5. Master Status.

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

1. Define Groups, types of Groups and Studies of Group Behavior with example.
2. Define Bureaucracy. Write a note on Characteristics of Bureaucracy.
3. What is the Social Construction of Reality? Explain it with example.

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.   Define the following: **(5x6=30)**

1. Anthropology
2. Cultural Change
3. Food Collection
4. Witchcraft
5. Rules

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

1. Define the **Fields of Anthropology** and **Anthropological Research Methods.**
2. Define **The Family, Types and its Functions.**
3. What are the **Origin and Spread of Food Production?**

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1.　Write short note on the following concepts:　　　(5x6=30)

  i.　Exchange Rate
  ii.　Price Flooring
  iii.　Shortage and Surplus
  iv.　Balance of Payment
  v.　Income Elasticity of demand

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

  I.　Explain the law of demand and also explain the assumptions of the law of demand.
  II.　Differentiate and state the characteristics of monopoly and oligopoly market structures.
  III.　Explain the various components of aggregate demand (national income).

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Give short answer to the following concepts: **(6x5=30)**

i) Prove the property
   a) $\sum(X - \bar{X})^2 \leq \sum(X - a)^2$
   b) $Var(aX) = a^2 Var(X)$

ii) Differentiate between following terms by giving at least two examples.
   a) Population and Sample
   b) Discrete and continuous variable

iii) Draw the Histogram and an Ogive from the following data

Daily wages (Rs)	4 - 6	6 - 8	8 - 10	10 - 12	12 - 14	14 - 16
No. of employees	13	111	182	105	19	7

iv) Define index number. Find chain index numbers (Base1971=100) for years 1972, 1973, 1974, 1975 and 1976 on the basis of following data.

Year	1972	1973	1974	1975	1976
Chain index	110	118	115	120	117

v) A survey was conducted to determine the ages of participants in a workshop. The ages of 15 participants are as follows. Compute the third moment about mean for the age distribution.
   58, 41, 45, 48, 40, 25, 32, 55, 62, 60, 36, 38, 50, 44, 28.

vi) Calculate a seven- day moving averages for the following record of attendances

Week	Sun	Mon	Tues	Wed	Thrus	Fri	Sat
1	24	55	29	48	52	55	61
2	27	52	32	43	53	56	65

Answer the following questions. (3x10=30)

Q2 Given below is the distribution of weekly income (to the nearest rupee) of 100 households in a locality. Calculate coefficient of variation and coefficient of Quartile deviation from the following data.

Income	35 - 39	40 - 44	45 - 49	50 -54	55 - 59	60-64	65 – 69
f	13	15	17	28	12	10	5

Q3 Show that with the help of the following data that the factor-reversal and time reversal tests are satisfied by Fisher's Ideal formula for index number construction.

Commodity	Base Year		Current Year	
	Price (in Rs)	Quantity (units of 40 kg)	Price (in Rs)	Quantity (units of 40 kg)
A	6	50	10	56
B	4	100	2	120
C	2	60	6	60
D	10	30	12	24
E	8	40	12	36

Q4 Compute the seasonal indices for the four quarters by the method of ratio to moving averages.

Year	Quarters			
	1	2	3	4
1961	122	125	118	117
1962	119	114	114	109
1963	105	99	93	89

Page 2 of 2

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: (6x5=30)

<div dir="rtl">سوال نمبر1:   درج ذیل سوالات کے مختصر جواب تحریر کریں۔</div>

1. Enlist different steps/phases in Social Case Work Process.

<div dir="rtl">ا۔ انفرادی سماجی بہبود کے عمل میں مختلف مراحل کی نشاندہی کریں۔</div>

2. Identify and briefly elaborate on two fundamental principles of Social Group Work.

<div dir="rtl">۲۔ گروہی سماجی بہبود کے دو بنیادی اصولوں کی نشاندہی کریں اور ان کی مختصر وضاحت کریں۔</div>

3. What are the major fields of Social Work? Discuss one of them.

<div dir="rtl">۳۔ سماجی بہبود کے نمایاں شعبہ جات کون کون سے ہیں؟ ان میں سے ایک پر بحث کریں۔</div>

4. What difficulties are faced by Women in Pakistan?

<div dir="rtl">۴۔ پاکستان میں خواتین کو جن مشکلات کا سامنا ہے ان کی نشاندہی کریں۔</div>

5. Why Primary Social Groups are important? Explain briefly.

<div dir="rtl">۵۔ بنیادی سماجی گروہ کیوں اہم ہیں؟ مختصراً بیان کریں۔</div>

6. Enlist & explain important <u>Code Of Ethics In Social Work</u> briefly.

<div dir="rtl">۶۔ سماجی بہبود میں اہم ضابطہ اخلاق کی نشاندہی اور مختصر وضاحت فرمائیں۔</div>

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

<div dir="rtl">سوال نمبر2:   درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔</div>

1. Enlist the significant principles of Social Work. Discuss them in detail.

<div dir="rtl">ا۔ سماجی بہبود کے اہم اصولوں کی فہرست بنائیں اور ان پر تفصیل سے بات کریں۔</div>

2. Provide an overview of the various stages involved in the Community Development Method.

<div dir="rtl">۲۔ اجتماعی سماجی ترقی کے طریقہ کار میں مختلف مراحل کا تفصیل سے جائزہ لیں۔</div>

3. Define Social Research and discuss its important steps.

<div dir="rtl">۳۔ سماجی تحقیق کی تعریف کریں اور اس کے مختلف مراحل بیان کریں۔</div>

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

1. Explain the relationship between social work and social welfare.

۱۔ سوشل ورک اور سوشل ویلفیئر کے درمیان تعلق کی وضاحت کریں۔

2. Discuss the role of social workers in advocating for vulnerable populations.

۲۔ کمزور اور پسماندہ طبقات کے حق میں آواز اٹھانے کے حوالے سے سوشل ورکرز کے کردار پر بات کریں۔

3. What are the key characteristics and skills required for a social worker to be effective in their profession?

۳۔ ایک سوشل ورکر کو اپنا کردار مؤثر طریقے سے ادا کرنے اور اپنے پیشہ ورانہ امور میں کامیاب ہونے کے لیے کن ضروری خصوصیات اور مہارتوں کی ضرورت ہے۔ تفصیل سے بیان کریں؟

4. Why is the value base important in social work, and how does it guide practice?

۴۔ سوشل ورک میں اخلاقی اقدار کیوں اہم ہیں، اور یہ سوشل ورک کے عمل کو کس طرح رہنمائی فراہم کرتی ہے؟

5. How do social work professionals integrate theory into practice?

۵۔ پیشہ ورانہ سوشل ورکرز اپنے نظریاتی علم کو اپنے عملی کام میں کیسے شامل کرتے ہیں؟

6. Explain the importance of the Code of Ethics in maintaining professionalism and integrity in social work.

۶۔ سوشل ورک میں پیشہ ورانہ مہارت اور دیانت داری کو برقرار رکھنے میں ضابطہ اخلاق کی اہمیت واضح کریں۔

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

سوال نمبر 2:　　درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔

1. Discuss the evolution of social work as a profession, including its transition from voluntary charity to organized welfare activities.

۱۔ سوشل ورک کے بطور پیشہ اس ارتقائی عمل پر بات کریں، جس میں رضاکارانہ خیرات کے تصور سے منظم فلاحی سرگرمیوں کی جانب تبدیلی شامل ہے۔

2. Examine the role of social work in addressing mental health issues and the strategies used by social workers in mental health settings.

۲۔ ذہنی صحت کے مسائل کو حل کرنے میں سوشل ورک کے کردار اور ذہنی صحت کے شعبہ میں سوشل ورکرز کے استعمال کردہ حکمت عملیوں کا جائزہ لیں۔

3. Analyze the relationship between social work and the sustainable development goals (SDGs), focusing on how social work contributes to poverty reduction and social inclusion.

۳۔ سوشل ورک اور پائیدار ترقی کے اہداف (ایس۔ ڈی۔ جی) کے درمیان تعلق کا تجزیہ کریں، خاص طور پر اس بات پر توجہ مرکوز کرتے ہوئے کہ ساجی کام کس طرح غربت میں کمی اور ساجی شمولیت کے فروغ میں معاون ثابت ہوتا ہے۔

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:   درج ذیل سوالات کے مختصر جواب تحریر کریں۔

i. What is the religious significance of Aryan.

i۔ آرئن کے مذہب کے بارے میں لکھیں۔

ii. What is Buddhism?

ii۔ بدھ ازم کیا ہے؟

iii. Mauryan central administration was good. discuss.

iii۔ موریہ کی انتظام سلطنت بہتر تھی۔ بحث کریں

iv. Asoka was a great administrator.

iv۔ اشوک ایک بڑا منتظم تھا۔

v. Names the achievement of Kaniska.

v۔ کنشک کی خدمات بیان کریں۔

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

درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔

Q. No. 2. What were the main causes of Alaxander's Invasion of India?

سوال نمبر 2۔ ہندوستان میں الیگذنڈر کی آمد کی وجوہات لکھیں۔

Q. No. 3. Briefly describe Gandhara Art.

سوال نمبر 3۔ گندھارا آرٹ کے بارے میں لکھیں۔

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

i.   What are pseudopodia, and which protozoans use them for locomotion?
ii.   State the general characteristics of the phylum Porifera.
iii.   What is the primary function of cnidocytes in cnidarians?
iv.   What is the role of the coelom in protostomes?
v.   Name one ecological role of annelids.
vi.   What is the significance of segmentation in annelids?

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

Question: 2 Compare and contrast asexual and sexual reproduction in protozoans, providing examples.

Question: 3 Describe the general structure and function of sponges, focusing on their role as filter feeders.

Question: 4 Explain the life cycle of a cnidarian, comparing the polyp and medusa stages.

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 Lysosomes.
iii. Heterochromatin and Euchromatin
iv.   Microfilaments structure
v.   structure and function of nucleus
vi.   Cell theory

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

i.   Give a comprehensive account on structure and function of PM and its role in maintaining the shape of the cell in tissues.
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.