



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Basic Functional Arabic

Course Code: AARB-111

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۔

(15x2=30)

السؤال الأول: مندرجہ ذیل جملوں میں مناسب الفاظ سے خالی جگہ کریں :

- 1- أنا طالب ..... المدرسة. (في / على / إلى)
- 2- ..... كتابك. (هذه / هذا / تلك)
- 3- يا فاطمة! هل ..... طالبة؟ (أنت / أنتم / أنت)
- 4- الكتاب ..... المكتب. (في / من / على)
- 5- ..... مسجد. (ذلك / هذه / تلك)
- 6- زيد مصري و زينب ..... (باكستاني / باكستانية / باكستان)
- 7- عندي ..... أقلام. (خمس / خمسة / خمس)
- 8- أحمد ..... الجامعة. (الطالب / طالب / طلاب)
- 9- يذهب إلى لاهور ..... الجمعة. (يوم / اليوم / شهر)
- 10- نأكل ..... (خبز / حليب / ورقا)
- 11- أشرب ..... (الماء / التفاح / الأرز)
- 12- ..... حالك؟ (أين / متى / كيف)
- 13- هل أنت ..... لاهور؟ (من / على / إلى)
- 14- تلك بنت. اسم ..... خديجة. (ه / ها / هن)
- 15- المسلمون ..... (صالحات / صالح / صالحون)

السؤال الثاني: اكتب أسماء الشهور الإسلامية (اسلامی مہینوں کے نام لکھیں)

السؤال الرابع: اكتب أسماء عشر فواكه. (دس پھلوں کے نام عربی میں لکھیں)

السؤال الخامس: اكتب أسماء الجسم التالية بالعربية: (مندرجہ ذیل کے نام عربی میں لکھیں)

بال، ناخن، گھٹنا، کہنی، ٹھوڑی، دانت، زبان، پیٹ، کمر، بازو



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Basic Arabic Language

Course Code: AARB-122

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

ا۔ حروف قمریہ سے کیا مراد ہے؟ مثال کے ساتھ وضاحت کریں۔

ب۔ فعل کی دو علامات ذکر کریں۔

ج۔ مرکب اضافی کی تعریف لکھیں نیز مثال دیں۔

د۔ مؤنث لفظ کی تین علامات کون سی ہیں؟

ه۔ پانچ حروف جارہ ذکر کریں۔

و۔ جمع کسے کہتے ہیں؟ ایک مثال دیں۔

(3x10=30)

درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔

سوال نمبر ۲: درج ذیل قرآنی آیت کا با محاورہ ترجمہ کریں۔

أَمِنَ الرَّسُولُ بِمَا أُنزِلَ إِلَيْهِ مِنْ رَبِّهِ وَالْمُؤْمِنُونَ كُلٌّ آمَنَ بِاللَّهِ وَمَلَكِهِ وَكُتُبِهِ وَرُسُلِهِ لَا تَفَرَّقُ بَيْنَ أَحَدٍ مِنْ رُسُلِهِ وَقَالُوا سَمِعْنَا وَأَطَعْنَا غُفْرَانَكَ رَبَّنَا وَإِلَيْكَ الْمَصِيرُ ○

سوال نمبر 3: حدیث نبوی کا با محاورہ ترجمہ کریں۔

مَنْ كَانَ يُؤْمِنُ بِاللَّهِ وَالْيَوْمِ الْآخِرِ فَلْيُكْرِمْ صَيفَهُ، وَمَنْ كَانَ يُؤْمِنُ بِاللَّهِ وَالْيَوْمِ الْآخِرِ فَلْيُصَلِّ رَجَمَهُ، وَمَنْ كَانَ يُؤْمِنُ بِاللَّهِ وَالْيَوْمِ الْآخِرِ فَلْيَقُلْ خَيْرًا أَوْ لِيَصْمُتْ

سوال نمبر 4: درج ذیل اشعار کا ترجمہ کریں۔

فالشكر يا ربّي لك والحمد ما تدار القلک

الكون ما صنعت والهدى ما هدیت

فستبد الخطو الى رضاك يا ربّ الغلاء



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

Q 1 : Write correct indefinite article (**un, une, des**) before the following nouns. (5 Marks)

- i. ami    ii. homme    iii. table    iv. crayon    v. télévisions

Q 2 : Write correct definite article (**le, la, les**) before the following nouns. (5 Marks)

- i. fille    ii. stylo    iii. magasins    iv. gare    v. école

Q 3 : Write the following numbers in figures : (6 Marks)

- i. deux    ii. quatre    iii. douze    iv. dix-sept  
v. vingt    vi. trente

Q 4 : Write the following numbers in French. (10 Marks)

- i) 1    ii) 6    iii) 10    iv) 22    v) 40

Q 5 : Conjugate any **two** of the following verbs in present form (**je, il, vous**). (10 Marks)

(Exemple : dire : je dis, il dit, vous dites)

- i) parler    ii) aller    iii) faire    iv) téléphoner

Q 6 : Translate any **four** of the following sentences from French into English **or** Urdu. (12 Marks)

- i. Bonjour.    ii. Elle se lève à six heures.    iii. Comment vas-tu?  
iv. Elle a des cassettes.    v. Je parle français.    vi. Il habite à Islamabad.  
v.

Q 7 : Translate any **four** of the following sentences from English into French. (12 Marks)

- i. It is Monday.    ii. How are you?    iii. What time is it?  
iv. She lives in Multan    v. I have a pen.    vi. He eats an apple.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

1. Write about the subject matter of Stone Age.
2. Give one example of cave painting with diagram?
3. Write about subject matter of Ishtar Gate?
4. What do you know about Egyptian wall paintings?
5. Write about the surface and subject matter of Greek orders.
6. Write five characteristics of Babylonian architecture.

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

**(3x10=30)**

1. What is Sumerian Art known for? Explain with two examples.
2. What do you know about Neolithic architecture? Discuss with examples.
3. Indus Valley town planning is famous all over the world. Discuss.





# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: International Relations

Course Code: AHIR-101

Time: 3 Hrs. Marks: 60

## THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Write short note on the following.

(6x5=30)

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

- |  |  |
|--|--|
| I. Evaluate different types of Diplomats                             | I. سفارتکاروں کی مختلف اقسام بیان کریں۔                                |
| II. Write short note on the features of Realism                      | II. حقیقت پسندی کے بنیادی نکات مختصر بیان کریں۔                        |
| III. Why study International Relations, write at least three reasons | III. بین الاقوامی تعلقات کا مطالعہ کیوں اہم ہے۔ کوئی تین وجوہات لکھیں۔ |
| IV. Define the concept of national interests                         | IV. قومی مفاد کے تصور کی وضاحت کریں۔                                   |
| V. Elaborate Balance of power in International relations             | V. بین الاقوامی تعلقات میں توازن طاقت کی وضاحت کریں۔                   |
| VI. Describe three features of modern diplomacy                      | VI. جدید سفارتکاری کی تین خوبیاں بیان کریں۔                            |

Q.2. Answer the following questions

(3x10=30)

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

- |   |  |
|---|--|
| I. Define International Relations. Discuss its nature and scope.            | i. بین الاقوامی تعلقات کی تعریف کریں۔ نیز اس کی نوعیت اور وسعت تحریر کیجیے۔  |
| II. What is Idealism? Discuss its salient features.                         | ii. عینیت پسندی کیا ہے۔ اس کے بنیادی نکات بیان کیجیے۔                        |
| III. Discuss the peaceful ways to resolve conflicts international politics. | iii. بین الاقوامی سیاست میں تنازعات کے پر امن حل کے طریقوں کو زیر بحث لائیں۔ |



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Introduction to History

Course Code: AHIS-111

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(5x6=30)**

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

i. Definition of History

i. تاریخ کی تعریف

ii. Historiography

ii. تاریخ نگاری

iii. Objectivity in History

iii. تاریخ کی معروضیت

iv. Secondary Documents

iv. ثانوی ذرائع

v. Oral History

v. اول تاریخ

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

**(2x15=30)**

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

i. Explain the relationship of history with social sciences.

i. تاریخ کا سوشل سائنسز کے ساتھ تعلق بیان کریں۔

ii. Discuss the different types of history.

ii. تاریخ کی مختلف اقسام پر بحث کریں۔



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: World History

Course Code: AHIS-122

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

Q.1. Write short note on the following.

(5x6=30)

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

i. Mesopotamian Civilization

i۔ میسوپوٹیمیا تہذیب

ii. Renaissance

ii۔ نشاۃ ثانیہ

iii. What do you know about the Abbasid rule?

iii۔ عباسی حکومت کے بارے میں آپ کیا جانتے ہیں؟

iv. Establishment of Mughal Empire

iv۔ مغلیہ سلطنت کا قیام

v. Colonialism

v۔ استعماریت

Answer the following questions

(2x15=30)

درج ذیل سوالات کے جوابات تحریر کریں۔

Q. No. 2. Highlight the salient features of Mesopotamian Civilization.

سوال نمبر 2۔ میسوپوٹیمیا کی تہذیب کی نمایاں خصوصیات کو اجاگر کریں۔

Q. No. 3. Discuss the causes and impacts of Cold War.

سوال نمبر 3۔ سرد جنگ کے اسباب اور اثرات پر بحث کریں۔



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: History of Revivalist Movements in Islam

Course Code: AHIS-416

Time: 3 Hrs. Marks: 60

## THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Write short note on the following.

(5x6=30)

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

1. Why is Ibn Taimiyah known as a revivalist scholar.

i. ابن تیمیہ کو احیائے علم کا علمبردار سکار کیوں کہا جاتا ہے؟

2. What was the main goal of Sheikh Ahmad Sirhindi's movement.

ii. شیخ احمد سرہندی کی تحریک کا بنیادی مقصد کیا تھا؟

3. How did Shah Wali Ullah help Muslims of India during the 18<sup>th</sup> century?

iii. شاہ ولی اللہ نے اٹھارویں صدی کے دوران ہندوستان کے مسلمانوں کے لئے کیا خدمات سر انجام دیں۔

4. What was the purpose of the Jihaad Movement among Indian Muslims by Syed Ahmad Shaheed.

iv. سید احمد شہید کی تحریک جہاد کے ہندوستانی مسلمانوں کے لئے کیا مقاصد تھے؟

5. Briefly discuss the role of Nadwat ul Ulema in the Awakening of Indian Muslims.

v. ندوۃ العلماء کی ہندوستانی مسلمانوں کی بیداری کے لئے مختصر اجازہ لیں۔

Answer the following questions

(2x15=30)

درج ذیل سوالات کے جوابات تحریر کریں۔

Q. No. 2. Discuss in detail the services of Jamal ud Din Afghani .

i. جمال الدین افغانی کی خدمات کا تفصیلی جائزہ لیں۔

Q. No. 3. Highlight the salient features of the Jihaad Movement.

ii. تحریک جہاد کی نمایاں خصوصیات بیان کریں۔



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Introduction to Punjabi Literature

Course Code: AHPB-112

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔ (5x6=30)

- 1- "بوہل نماز" سیہدی تخلیق اے تے ایہدے وچ کس قسم دے مسئلے بیان کیتے گئے نیں؟
- 2- بابا فریدؒ نے کس صنف وچ شاعری کیتی؟ کوئی شعری مثال وی دیو۔
- 3- وارث شاہؒ کتھوں دے رہن والے سن تے اوہناں دی وجہ شہرت کیہ اے؟
- 4- گھٹوگٹ قدیم تے جدید چھ پنجاہی نثری صنفاں دے ناں دسو۔
- 5- "لوری" کیہ ہوندی اے؟ شعری مثال وی دیو۔

درج ذیل سوالات کے جوابات تحریر کریں۔

- 1- پنجاہی شاعری دیاں صنفاں مثنوی، سی حرفی تے دوہڑے دی وضاحت مثالیں راہیں کرو۔  $5 \times 3 = 15$
- 2- ہیٹھ لکھے سرناویاں وچوں کسے دو اُتے بھرواں نوٹ لکھو۔  $7.5 + 7.5 = 15$
- الف) کافی ب) ناول ج) افسانہ



# UNIVERSITY OF THE PUNJAB

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

Roll No. ....

Paper: Fundamentals of Philosophy (AH)

Course Code: AHPH-100

Time: 3 Hrs. Marks: 60

**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.



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Introduction to the Topics of the Qur'an

Course Code: AISL-100

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

(6x5=30)

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

الف۔ عقیدہ توحید سے متعلق ایک قرآنی آیت مع ترجمہ تحریر کریں۔

ب۔ اسلام میں کون کون سی نمازیں فرض ہیں؟

ج۔ امر بالمعروف اور نہی عن المنکر سے کیا مراد ہے؟

د۔ حج کی فرضیت سے متعلق قرآنی آیت مع ترجمہ تحریر کریں۔

ه۔ روزوں کی اہمیت پر مختصر نوٹ لکھیں؟

و۔ زکوٰۃ کے پانچ فوائد تحریر کریں۔

(3x10=30)

درج ذیل سوالات کے جوابات تحریر کریں۔

سوال نمبر 2: عقیدہ آخرت کے انسانی زندگی پر کیا اثرات مرتب ہوتے ہیں؟

سوال نمبر 3: حج کی اہمیت اور احکام قرآنی آیات کی روشنی میں تحریر کریں۔

سوال نمبر 4: معیشت کا مفہوم اور قرآنی آیات کی روشنی میں اس کی اہمیت بیان کریں۔



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Introduction to Pakistan Studies

Course Code: APAK-111

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(5x6=30)**

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

i. Is Pakistan Studies an art?

i. کیا مطالعہ پاکستان ایک فن ہے؟

ii. Scope of Pakistan Studies

ii. مطالعہ پاکستان کا دائرہ کار

iii. Pakistan Studies' Relation with Sociology

iii. مطالعہ پاکستان کا سوشیالوجی سے تعلق

iv. Objectives of the Pakistan Studies

iv. مطالعہ پاکستان کے مقاصد

v. Ideology of Pakistan

v. نظریہ پاکستان

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

**(2x15=30)**

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

i. Discuss the significance of Two Nation Theory.

i. دو قومی نظریہ کی اہمیت پر بحث کریں۔

ii. Highlight the Problems & Solutions in Promoting the Pakistan Studies.

ii. مطالعہ پاکستان کو فروغ دینے میں مسائل اور ان کے حل کو اجاگر کریں۔





# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Pakistani Society and Culture

Course Code: APAK-122

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

1. Define society and explain its basic patterns of social organization.
2. What is the concept of culture? Explain with examples from Pakistani society.
3. Differentiate between ethnocentrism and cultural relativism.
4. Write a note on the rural and urban society of Pakistan.
5. Explain the role of communication in social change.
6. What are the main social problems in Pakistan?

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

**(3x10=30)**

1. Describe the cultural institutions. Discuss the role of religion as a social institution and its impact on societal values and traditions.
2. Explain how class and caste differences shape social stratification systems in different cultures.
3. Explain the impact of industrialization and technology on Pakistani society.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

1. Compare and contrast the concepts of health and physical education.
2. Identify and explain the five components of physical fitness.
3. What is the impact of poor nutrition on physical health?
4. Describe the basic principles of anatomy and physiology relevant to movement.
5. What is the importance of hydration for active individuals?
6. Mention three lifestyle strategies that promote mental well-being.

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

**(3x10=30)**

1. Critically assess the role of health and physical education in developing lifelong wellness habits.
2. Discuss strategies for managing stress through regular physical activity, providing real-life examples.
3. Analyze the communication techniques that make health promotion initiatives more effective.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

نوٹ: تمام سوالات کے جواب لکھیے

13

درج ذیل نثر پارے کا با محاورہ اردو ترجمہ کیجیے:

سوال نمبر: (1)

سعادت آدمی در معرفت حق است و در بندگی و عبادت اوست؛ اما آنکہ بندگی و عبادت سبب سعادت آدمی است، آنست کہ سرکار آدمی چون بمیرد، با حق خواهد بود و ہر کہ را قرارگاہ با کسی خواهد بود، سعادت وی آن بود کہ دوستدار وی بود و ہر چند دوست تر دارد، سعادت وی بیشتر بود از آنکہ لذت و راحت وی در مشاہدہ محبوب زیادت بود۔ و دوستی حق تعالیٰ بر دل غالب نشود الا بہ معرفت و بسیار ذکر۔

13

درج ذیل نثر پارے کا با محاورہ اردو ترجمہ کیجیے:

سوال نمبر: (2)

چون رابعہ بزرگ شد، پدر و مادرش ہمردند و در بصرہ قحطی عظیم پیدا شد و خواہران متفرق شدند و رابعہ بہ دست ظالمی افتاد۔ او را بہ چند درم بفروخت۔ آن خواجہ او را بہ رنج و مشقت کار می فرمود۔ روزی در راہ از نامحرمی ہگریخت، بیفتاد و دستش بشکست۔ روی ہر خاک نہاد و گفت: الہی! غریبم و بی مادر و پدر، و اسیرم و دست شکستہ، مرا از این ہمہ ہیچ غم نیست، الا رضای تو می باید۔

14

درج ذیل انتخاب کا با محاورہ اردو ترجمہ کیجیے:

سوال نمبر: (3)

دزدی بہ خانہٴ پارسایی در آمد؛ چندان کہ جست چیزی نیافت۔ دلتنگ شد۔ پارسا را خبر شد۔ گلیمی کہ در آن خفتہ بود، برداشت و در راہ دزد انداخت تا محروم نشود۔  
شنیدم کہ مردانِ راہِ خدای  
دلِ دشمنان را نکردند تنگ  
تو را کی میسر شود این مقام  
کہ با دوستانِ خلاف است و جنگ؟

10

امام غزالی کے احوال زندگی درج کیجیے اور ان کے فارسی آثار کا تعارف کروائیے

سوال نمبر: (4)

10

تذکرۃ الاولیاء پر تعارفی مضمون لکھیے

سوال نمبر: (5)



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

1. What is a deductive argument?
2. Define validity and truth in logic.
3. What are quality and quantity in categorical propositions?
4. Write two rules of implication in propositional logic.
5. What is the difference between superstition and scientific reasoning?
6. Define conversion and obversion.

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

**(3x10=30)**

1. Explain how to translate ordinary language statements into logical forms.
2. Draw and explain truth tables for two propositions.
3. Discuss hypothetical reasoning with examples.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q 1) Differentiate the following terms with examples (Marks 5X 4=20)**

- A. Ethics, Morality and Law
- B. Beneficence and Nonmaleficence
- C. Debriefing and Deception
- D. Boundaries of competence and maintaining competence

**Q2) Briefly describe ethical standards in accordance with APA (Marks 5X4=20)**

- A) Human Relations
- B) Privacy and confidentiality
- C) Advertising and other Public Statements
- D) Plagiarism and Confidentiality

**Q 3) Briefly describe the Code of ethics provided by the British Psychological Association along with their application? (Marks 5)**

**Q 4) Write a detail note on Informed consent. (Marks 5)**

**Q 5) What are the ethical guidelines given by APA to be followed in therapy (Marks 10)**



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

1. Write two differences between perception and attention.
2. What is the role of sensory memory?
3. What is pattern recognition? Give an example.
4. Define episodic memory.
5. What is syllogism?
6. What is linguistic determinism?

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

**(3x10=30)**

1. Explain the organization of the brain and its role in cognition.
2. What is depth perception? Describe how we understand distance and size.
3. Describe implicit and explicit memory with daily examples.





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following. (10x3=30)**

- a) What is inventory, and why is it important in financial accounting?
- b) What are the main purposes of inventory holding?
- c) List two limitations of maintaining high inventory levels.
- d) Define cash equivalents with an example.
- e) How does a petty cash system support internal control?
- f) What causes timing differences in bank reconciliation?
- g) Why is a bank reconciliation statement prepared?
- h) Differentiate between the direct write-off method and the allowance method.
- i) Differentiate between provision and reserve.
- j) State two purposes of charging depreciation on fixed assets.

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

**Question No. 02**

Atlas Traders has accounts receivable of Rs. 745,000 as of March 31. An analysis of the accounts provides the following details:

Month of Sale	Balance at March 31
March	Rs. 480,000
February	Rs. 140,800
January	Rs. 68,000
Before January	Rs. 56,200
Total	Rs. 744,200

Credit terms are 2/10, n/30. At March 31, the Allowance for Doubtful Accounts has a credit balance of Rs. 9,600 before adjustment. The company uses the percentage-of-receivables basis to estimate uncollectible accounts. The company's estimate of bad debts by age group is as follows:

Age of Accounts	Estimated Percentage Uncollectible
1–30 days	2%
31–60 days	5%
61–90 days	30%
Over 90 days	50%

**Instructions:**

- a) Determine the total estimated uncollectible accounts.
- b) Prepare the adjusting entry at March 31 to record bad debt expense.

**Question No. 03**

The following data relate to the bank account of Amir Company as of June 30, 2024:

- a) The June bank statement showed a closing balance of Rs. 34,240
- b) The depositor's record showed a balance of on June 30 of Rs. 32,426.
- c) Deposit in transit amounted to Rs. 3,560

d) The four cheques were outstanding cheques as follows:

Cheque #	Amount
#521	Rs.460
#528	356
#530	724
#531	<u>1,700</u>

- e) Also included in the June bank statement was a debit memorandum from the bank for Rs. 356 representing service charges for July.
- f) A credit memorandum enclosed with the June bank statement indicated that a note receivable for Rs.720 collected by bank from a customer and credited to the account of Amir Company.
- g) A Rs. 4,040 cheque that Amir had deposited was return by the bank because it is a bad (NSF) check.
- h) Bank collected a Rs. 8,060 note for Amir, charging a Rs. 100 collection fee.
- i) Amir wrote a cheque of Rs.560 but recorded it in the books as Rs. 650.
- j) Bank had charges a Rs. 2,240 cheque written by Ahmad to the account of Amir company.

**Requirement:**

Prepare a Bank reconciliation statement of Amir Company.

**Question No. 04**

Aurora Merchants is a trading company using a perpetual inventory system. At the beginning of March, the ledger of Aurora Merchants showed Cash Rs. 1,50,000 and R. Ali, Capital Rs. 1,50,000. The company completed the following merchandising transactions during March:

- Mar 2** Purchased merchandise on account from Summit Suppliers for Rs. 98,000, terms 2/10, n/30.
- Mar 4** Sold merchandise on account for Rs. 91,000, terms 2/10, n/30. The cost of the merchandise sold was Rs. 68,500.
- Mar 5** Paid Rs. 4,000 freight charges on the March 4 sale.
- Mar 11** Paid Summit Suppliers in full, less the available discount.
- Mar 13** Received collections in full from customers billed on March 4, less the allowable discount.
- Mar 15** Purchased merchandise for cash Rs. 61,000.
- Mar 24** Sold merchandise for cash Rs. 88,000. The cost of merchandise sold was Rs. 69,000.
- Mar 30** Sold merchandise on account for Rs. 59,500, terms n/30. The cost of the goods sold was Rs. 45,500.

**Requirement:**

Journalize the above transactions for March in the general journal of Aurora Merchants, using the perpetual inventory system.





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

- i. Differentiate between criterion and content validity
- ii. Job specification vs job description
- iii. Strategic HRM
- iv. What is high performance work system
- v. Differentiate among termination, layoff and network employees

**Answer the following questions**

**(3x10=30)**

Question 2: Differentiate between soft and hard HR practices along with their benefits to the today's organizations? Explain with real time examples.

Question 3: Discuss the importance of HR planning. How does it help avoid employee shortages or surpluses? Explain the steps involved in the employee selection process. How do organizations ensure fairness in hiring?

Question 4: What is meant by reliability and validity in the context of employee selection tests? Explain the different types of reliability and validity used in HRM. Why are these concepts critical in evaluating selection tools?



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

- 1) Draw a Punnett square to explain Mendelian Law segregation and explain it.
- 2) Discuss Multiple allelism and provide example.
- 3) Discuss physical map and how it is constructed.
- 4) Describe Hemophilia as X-Linked inheritance?
- 5) Discuss physical mutagens with examples?
- 6) Define the followings:
  - 1) Exons 2) In Complete dominance 3) Genetic drift 4) Methylation 5) Epistasis

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

**(3x10=30)**

1. Describe a genetic map construction procedure.
2. Discuss Bacterial recombination and explain Transduction.
3. Write a detailed note on Prokaryotic Transcription.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

- I. Etching needle
- II. Counter Proof
- III. Bench Hook
- IV. Scraper
- V. Burnisher
- VI. Difference between Dry point and Etching
- VII. Planography
- VIII. Bevelling

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

- I. What is Etching technique in Intaglio Printing?
- II. How do you Identify Aquatint?
- III. Describe the process of Dry Pint.
- IV. What is the difference between wood cut and wood engraving?
- V. What is the importance of preparation of clay before making a head in plaster?



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

1. What is impact of HARMONY in colours and shapes?
2. Define SEMIOTICS? Why they are important in design communication
3. What is of RHYTHM in design? Give examples
4. Describe the ELEMENT OF ART? How they can be used to create CONTRAST?
5. Write about the significance of COLOUR PSYCHOLOGY in Graphic Design?
6. Write about the role of NEGATIVE SPACE in a layout?

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

**(3x10=30)**

1. Describe RULE OF ODDS in composition? Compare with other compositional rules?
2. Describe the RULE OF GOLDEN SECTION? Explain with examples.
3. Discuss the importance of understanding the meanings behind SIGNS AND SYMBOLS, and how cultural and personal experiences can influence their interpretation.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- i. Define the importance of line quality in art?
- ii. What are the primary considerations while handling pen and ink media?
- iii. List three ways light affects the appearance of objects in drawing.
- iv. What does self-expression mean in art?
- v. Define cross-contour drawing with an example.
- vi. What is a wireframe in art?

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

**(3x10=30)**

- i. Discuss the importance of character design in visual storytelling. Explain the key elements to consider while designing a unique character.
- ii. Explain the principles of perspective drawing. Illustrate with diagrams how one-point and two-point perspective work in art composition.
- iii. Describe how light and shadow influence the visual depth and form in drawing. Provide examples of different light source effects.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

1. How did the invention of digital photography transform both the accessibility and quality of image-making?
2. Compare and contrast street photography with heritage and cultural photography in terms of purpose and approach.
3. How do shutter speed and ISO interact in low-light photography? Provide examples.
4. Evaluate the importance of metering in achieving proper exposure in dynamic lighting conditions.
5. How did Richard Avedon revolutionize portrait photography? Give one example of his notable work.
6. Explain the artistic value of photojournalism during times of social or political crisis.

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

**(3x10=30)**

1. Examine how the different genres of photography (e.g., fashion, wildlife, documentary) influence storytelling techniques and audience engagement.
2. Select any three photographers from the course list and analyze how their stylistic approaches reflect changes in photographic trends and technology.
3. Discuss in detail how a photographer plans and executes a shoot—from conceptualization to editing and printing—using both technical and creative considerations.



# UNIVERSITY OF THE PUNJAB

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

Roll No. ....

Paper: Bagawad Geeta

Course Code: BG-001

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۔

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 نمبر 1: مندرجہ ذیل سوالات کے مختصر جواب لکھیں۔

1. بھیم کویدھ گیان کس دیوتا نے دیا؟
2. کوروؤں کی جانب سے جو ناما کس نے کھیا؟
3. پانڈوؤں میں سب سے زیادہ گیانی کون تھا؟
4. ہندو دھرم میں شوجی کو کس نام سے جانا جاتا ہے؟
5. پانڈوؤں کے والد کا کیا نام تھا؟
6. ابھیمنیو کس کے بیٹے ہیں؟
7. ابھیمنیو جنگ کے دوران کہاں پھنسے تھے؟
8. پانچال نریش کس کے والد تھے؟
9. امبانے دوسرا جنم کس نام سے لیا؟
10. کرن کی صبح اٹھ کر کیا کرتے تھے؟

### SECTION – II (2 x 10 = 20 MARKS)

Note: Attempt any *TWO* questions from the following.

نوٹ: مندرجہ ذیل سوالات میں سے کوئی سے دو سوالات کے مختصر جواب لکھیں۔

- Q2. ماہابھارت بچ اور جھوٹ کی جنگ کیوں تھی؟
- Q3. یدھشٹر اور دریودھن کی حکومت کا جائزہ لیں؟
- Q4. شری کرشن ہستناپور میں جنگ سے پہلے کیا پیغام لے کر گئے؟
- Q5. ماہابھارت میں دھرم کا تصور کس طرح بیان کیا گیا ہے؟

### SECTION – III (2 x 10 = 20 MARKS)

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

نوٹ: مندرجہ ذیل سوالات میں سے کوئی سے دو سوالات کے مختصر جواب لکھیں۔ جبکہ سوال نمبر 9 لازمی ہے۔

- Q6. ارجن جنگ سے پہلے کن پریشانیوں سے دوچار تھے؟
- Q7. جنگ سے پہلے ارجن اور دریودھن شری کرشن کے پاس کیا مانگنے گئے تھے؟
- Q8. کرن کی شخصیت پر تفصیلی نوٹ لکھیں؟
- Q9. مندرجہ ذیل ہندی الفاظ کا اردو میں ترجمہ کریں  
شمشان ابھیمان پر ماتا شلوک آکاش





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(10x3=30)**

1. Define plant taxonomy. Give its significance.
2. Write distinctive features of family Poaceae?
3. Define botanical nomenclature and binomial nomenclature.
4. Define inflorescence. Write names of special types of inflorescence.
5. Define compound leaf? Enlist its different types.
6. Write down the vernacular and botanical names of 4 members of family Solanaceae?
7. Draw neat and clean floral diagram of *Cassia fistula* L.?
8. Differentiate between racemose and cymose inflorescence? Give example.
9. Write economic importance of family Solanaceae?
10. What is the difference between habitat and habit.

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

**(3x10=30)**

1. What is Natural System of Classification. Give the Salient features of Benthem & Hooker System of Classification.
2. Define a leaf? Describe the different parts of leaves in plants.
3. Write a detailed note on family Rosaceae? Also give its economic importance. Explain with the help of floral diagram and floral formula?





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(5x6=30)**

- I. Differentiate between habitat and niche.
- II. What are the threats faced by native species due to invasion by alien species?
- III. How can we spread awareness among the general public about the importance of biodiversity and its conservation?
- IV. Write a short note on Habitat fragmentation.
- V. What are the opportunities and challenges to conservation of biodiversity?

**Answer the following questions**

**(3x10=30)**

- Q. 2. Explain in detail the species invasion and its major types.
- Q. 3. Write a comprehensive note on In-situ and Ex-situ conservation of biodiversity.
- Q. 4. What is the National conservation strategy of Pakistan?



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

- 1) Describe Mendelian Law of Independent Assortment.
- 2) What are Lethal Alleles and its types?
- 3) Discuss Extra Nuclear inheritance?
- 4) Discuss the role of mutation in evolution.
- 5) What is a test cross and a back cross?
- 6) Differentiate between Allozymes and Isozymes.

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

**(3x10=30)**

1. Describe Bacterial Transformation through Conjugation.
2. Describe steps wise procedure of transcription in Eukaryotes
3. Discuss how genetic maps are constructed in plants.



**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۔ (5x6=30)

- (i) صحیح/صحیحی الأخطاء في الجمل الآتية. (جملوں میں موجود اغلاط کو درست کریں)
  - (أ) هذه هي مدرسة القديمة. (ب) والدتي طبيبة كبيرة. (ج) عندي ملابس جديدة.
  - (ii) اسم اشاره کی تعریف کریں، اور اسم اشاره بعید لکھیں۔
  - (iii) أجب/أجيب عن الأسئلة التالية بالعربية. (سوالات کا عربی میں جواب دیں)
    1. ما اسمها؟ 2. من معك في السيارة؟ 3. أين بيئكم؟
    - (iv) عرّف/عرّف بالجملة الفعلية، وهات مثالاً واحداً (جملہ فعلیہ کی تعریف کریں اور ایک مثال بھی ذکر کریں)
    - (v) استخدم الأفعال في جملك المفيدة. (ان افعال کو اپنے عربی جملوں میں استعمال کریں)
      - 1: تَلْعَبُ 2: تَجْمَعُ 3: تَبْحَثُ

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

- سوال 2: درج ذیل اشعار کا ترجمہ کریں۔
 

إذا ما كُنْتُ ذا قلبٍ قنوعٍ فَأَنْتَ وَمَالُكَ الدُّنْيَا سَوَاءٌ  
وَمَنْ نَزَلَتْ بِسَاحَتِهِ الْمَنَازِلُ فَلَا أَرْضَ تَقْبِهِ وَلَا سَمَاءَ
- سوال 3: درج ذیل حدیث کا ترجمہ کریں
 

قال الرسول ﷺ: "الْبِرُّ حَسَنُ الْخُلُقِ، وَالْإِثْمُ مَا حَاكَ فِي نَفْسِكَ، وَكَرِهْتَ أَنْ يُطْلَعَ عَلَيْهِ النَّاسُ."
- سوال 4: درج ذیل جملوں کی عربی بنائیں۔
  - 1- دین میں آسانی ہے
  - 2- فاطمہ، دروازہ کھولو۔
  - 3- یہ ایک لمبی دیوار ہے۔
  - 4- ہم کل رات سفر کے لیے نکل پڑے۔
  - 5- میں جوس نہیں، چائے پیتا ہوں۔



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

**السؤال الأول: اِمْلَأِ الْفَرَاعَ مِمَّا بَيْنَ الْقَوْسَيْنِ (٥)**

١. تَقْضِي أَيَّامَ الْعِيدِ ؟ ( أَيْنَ ، مَاذَا )
٢. تَقْضِي الْغُطْلَةَ ؟ ( هَلْ ، كَيْفَ )
٣. الْغُطْلَةُ ؟ ( مَتَى ، هَلْ )
٤. فَعَلْتَ فِي الْمَبَقَاتِ ؟ ( مَاذَا ، أَيْنَ )
٥. شَوَّطًا طَفْتُ ؟ ( لِمَاذَا ، كَمْ )

**السؤال الثاني: رَتِّبِ الْكَلِمَاتِ لِتَصْبِحَ جُمْلَةً (٥)**

١. الْخُرُوجُ ، أَيْنَ ، تَأْشِيرَةٌ
٢. سَعِيدٌ ، اِئْتَدُونِي سَيَا ، مِنْ
٣. كَثْمِيرِي ، أَنَا ، لَا
٤. لِلزَّيَاةِ ، قَائِمٌ ، أَنَا
٥. سَأَقِيمُ ، فَنَذِي ، فِي ، قَرِيبٍ

**السؤال الثالث: اكْمِلِ الْحَوَارَ (٥)**

ط ١ : _____	ط ١ : _____
ط ٢ : بالطَّائِرَةِ السُّعُودِيَّةِ.	ط ٢ : سَأَقْضِي غُطْلَةَ الرَّبِيعِ فِي تَنْزَانِيَا.
ط ١ : _____	ط ١ : _____
ط ٢ : فِي الثَّامِنَةِ مَسَاءً.	ط ٢ : ثَلَاثَةَ أَسَابِيعٍ قَرِيبًا.
ط ١ : _____	ط ١ : _____
ط ٢ : غَدًا ، إِنْ شَاءَ اللَّهُ.	ط ٢ : غَدًا ، إِنْ شَاءَ اللَّهُ.

**السؤال الرابع: صِلْ بَيْنَ السُّؤَالِ وَالْجَوَابِ (٥)**

١. أَيْنَ التَّذَاكُرُ؟	ا. خَمْسَةَ أَيَّامٍ .
٢. مَاذَا فِي الْحَقِيقَةِ؟	ب. سَبْعَةُ أَشْوَاطٍ .
٣. مَتَى الْغُطْلَةُ؟	ج. هَذِهِ هِيَ التَّذَاكُرُ.
٤. كَمْ يَوْمًا سَتَقِيمُ هُنَا؟	د. فِي الْحَقِيقَةِ تَذَاكُرُ.
٥. كَمْ شَوَّطًا طَفْتُ؟	هـ . فِي شَهْرِ رَمَضَانَ.

السؤال الخامس: ضغ علامة (X) على الكلمة الغريبة. (٥)

١. أنف، أسنان، أذن، زُمام
٢. المُحَرَّم، صَفَر، شَهَر، رَجَب
٣. الأول، تَسْعُون، مئة، ألف
٤. السَفَر، البَحْر، البَر، الجَو
٥. أهل، أصدقاء، متاجف، فقراء

السؤال السادس: رتب الشهور العربية. (٥)

ذو الحجة، رمضان، ربيع الآخر، شوال، جمادى الأولى، صفر، شعبان، رجب، ربيع الأول، جمادى الآخرة، ذو القعدة، المحرم

السؤال السابع: ترجم الجمل الآتية إلى اللغة الأردنية. (١٠)

النفس الإنسانية تمثل من الجذ والعقل، ويدخلها السام من كثرة العمل؛ لذلك تُجبرُ تعاليم الإسلام للإنسان أن يزوح عن نفسه، من وقت لآخر باللهو المباح، ويُمارس من الأنشطة الترويجية المباحة ما يعود عليه بالفوائد الجسمية والزوجية والعقلية ويجدد نشاطه في الحياة ويدفعه إلى مزيد من العمل والعبادة. وأجاز الإسلام من الأنشطة الترويجية ما يتفق مع قيمه وأخلاقه وأدابه.

السؤال الثامن: أجب عن الأسئلة التالية - (١٠)

١. لماذا يُمارس الناس بغض الأنشطة؟
٢. متى يطلب الناس الترويح؟
٣. ما الهدف من الترويح؟
٤. من الطالب الذي يحتاج إلى ترويح؟
٥. إلى أي شيء يدعو الإسلام؟

السؤال التاسع: أكتب عشر جمل حول الموضوع "الترويح عن النفس" أو "الحياة في المدينة". (١٠)



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

- I. Para Language Communication.
- II. Physical Barrier of Listening.
- III. Enlist Components of Communication.
- IV. Decoding and Encoding in the Communication Process.
- V. Organizational Culture.
- VI. Haptic Communication.

**Answer the following questions**

**(3x10=30)**

**Q.No.2:** What is electronic communication? Please explain in detail its types.

**Q.No.3:** Communication is the lifeblood of an Organization. Explain this statement.

**Q.No.4:** Write a Sales Letter of your own choice and highlight the important points of the letter.



## THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

**Q.1. Differentiate the following with the help of examples. (5x6=30)**

- i) Primary and Secondary Data
- ii) Correlation and Regression
- iii) Binomial Probability Distribution and Hypergeometric Probability Distribution
- iv) Standard Deviation and Standard Error
- v) Sampling with Replacement and Sampling without Replacement

**Answer the following questions. Use of Scientific Calculator and the Statistical Tables is allowed. (5x6=30)**

**Q2.** A study investigates whether household income level (high or low) is associated with renewable energy adoption (adopted or not adopted). The observed data from 500 households are given in the following 2x2 contingency table:

Income Level	Renewable Energy	
	Adopted	Not Adopted
High	150	50
Low	100	200

At the  $\alpha = 0.05$  significance level, test whether income level and renewable energy adoption are associated?

**Q3.** The following table records the daily exercise time (X; in minutes) and calories burned (Y) for 10 individuals.

Exercise Time (X)	20	30	40	50	60	70	80	90	100	110
Calories Burned (Y)	80	110	150	190	220	270	300	340	380	400

- a) Compute the Pearson's Correlation Coefficient between Exercise Time and the Calories Burned.
- b) Estimate a Simple Linear Regression Model that predicts the Calories Burned from the Exercise Time.

**Q4.** A company advertises that food preparation time can be significantly reduced with the Handy Dandy Slicer. A sample of 12 individuals prepared the ingredients for a meal with and without the slicer. You are given the preparation times below. Test the company claim by assuming that the difference between two timings does not follow a normal distribution.

Person	1	2	3	4	5	6	7	8	9	10	11	12
Preparation Times												
With Slicer	20	12	20	14	19	20	19	15	22	19	21	23
Without Slicer	22	18	18	22	19	21	18	12	18	25	26	20

**Q5.** Compute the following weighted Price Index Numbers for 2020 from the following data:

Commodity/Year	2010		2020	
	Price	Qty.	Price	Qty.
A	600	100	1200	150
B	400	80	700	100
C	180	60	430	70
D	450	30	360	30

- i) Laspeyre's Index Number ii) Paasche's Index Number iii) Fisher's Ideal Index Number.

**Q6.** The following are the annual returns (%) on two different investment plans:

Real Estate	10.2	11.5	15.0	8.7	13.5	14.0	15.5	20.5	12.5	14.5
Stock Exchange	2.5	8.5	30.5	10.5	17.5	6.5	1.5	15.0	10.0	5.0

- a) Which plan is better as an average return? b) Which plan is consistent with respect to return?





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- i. Define price elasticity of demand. How is it calculated?
- ii. State and explain the stages of the law of variable proportions.?
- iii. Differentiate between explicit cost and implicit cost.?
- iv. What is market equilibrium? Explain with a diagram?
- v. Differentiate between monopoly and monopolistic competition.
- vi. What is factor pricing? Why is it important in economics?

**Answer the following questions.**

**(3x10=30)**

- Q2.** What is the budget line? How do changes in income and prices affect the budget line? Explain with diagrams.?
- Q3.** Explain the Marginal Productivity Theory of factor pricing. How does it determine the wage rate?
- Q4.** Discuss the determination of price and output under perfect competition in the short run. Use diagrams to illustrate your answer.?





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following. (10x3=30)**

- i. Is routine maintenance of equipment a capital or revenue expenditure?
- ii. How are capital expenditures treated in financial statements?
- iii. How are revenue expenditures recorded in the income statement?
- iv. Which type of assets are subject to depletion?
- v. How does amortization differ from depreciation?
- vi. What does aging accounts receivable mean?
- vii. What is the allowance method for bad debts?
- viii. What is bad debt expense?
- ix. Define and differentiate between capital and revenue expenditures.
- x. How is revenue expenditure classified in the financial statements, and what effect does it have on profitability?

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

**Q. 2** Patel Traders uses the allowance method to estimate uncollectible accounts receivable. The company produced the following aging schedule for accounts receivable at year-end, December 31, 2024:

Age Groups	Accounts Receivable (Rs.)	Estimated % Uncollectible
0–30	450,000	2%
31–60	280,000	5%
61–90	120,000	15%
Over 90	50,000	25%

**Instructions:**

- a) Calculate the total estimated bad debts based on the above information.
- b) Prepare the year-end adjusting journal entry to record the bad debts using the aged uncollectible accounts receivable determined in (a). Assume the current balance in Allowance for Doubtful Accounts is a Rs. 10,000 debit.
- c) Of the above accounts, Rs. 12,000 is determined to be specifically uncollectible. Prepare the journal entry to write off the uncollectible account.
- d) The company collects Rs. 12,000 subsequently on a specific account that had previously been determined to be uncollectible in (c). Prepare the journal entry(ies) necessary to restore the account and record the cash collection.
- e) Comment on how your answers to (a)–(d) would change if Patel Traders used 4% of total accounts receivable, rather than aging the accounts receivable. What are the advantages to the company of aging accounts receivable rather than applying a percentage to total accounts receivable?

**Q. 3** AA Enterprises is a partnership firm with a history of profitable operations. At the end of the current year, the capital accounts of the three partners and their agreed profit-sharing ratios are as follows:

Partner	Capital (Rs.)	Profit-Sharing Ratio
Shahzad	900,000	50%
Ali	600,000	30%
Ahmad	500,000	20%

It is agreed that a new partner, shahid will be admitted to the firm at this date.

**Required:**

For each of the following situations regarding the admission of shahid to the partnership, provide the necessary journal entry to record his admission.

- a. Shahid purchases one-half of Ali interest in the firm by paying him personally Rs. 400,000.
- b. Shahid buys a one-fourth interest in the firm for Rs. 560,000 by purchasing one-fourth of each of the three partners' present interest. Shahid pays the three individuals directly.
- c. Shahid invests Rs. 560,000 in the firm and receives a one-fourth interest in the capital and profits of the business. In addition to the journal entry to record shahid's admission, compute the equity interest received and determine if a bonus is given to either the old partners or Shahid.
- d. Shahid invests Rs. 500,000 in the firm and receives a one-fourth interest in the capital and profits of the business. In addition to the journal entry to record shahid's admission, compute the equity interest received and determine if a bonus is given to either the old partners or Shahid.

**Q. 4** During a routine audit, the following errors were discovered in the books of accounts of the company:

1. Rs. 800 purchase of store supplies for cash was recorded as a purchase of office supplies for cash.
2. Store supplies of Rs. 1000 were purchased on credit but were wrongly credited to the cash.
3. The owner of the business, used a company check to pay a personal utility bill of Rs. 2,295. The payment had been recorded correctly but posted as a debit to Utilities Expense.
4. Equipment of Rs. 1,500 purchased on credit, however, recorded as Rs. 15,000 in both accounts affected.
5. A collection of Rs. 500 from credit customers was recorded as a debit to the Cash account and a credit to the Fees Earned account.
6. A Rs. 300 paid for the purchase of office equipment was not recorded in the books of accounts.
7. A Rs. 10,000 paid rent for the month was correctly journalized but post as debit to rent expense account by Rs. 1,000; however cash account was correctly credited.
8. Purchase of office equipment for Rs. 22,150 cash was posted as debit to office equipment by Rs. 22,150 and credit to the cash account by Rs. 22,105.
9. The total of purchase journal Rs. 35,300, was carried forward as Rs. 33500.
10. The cash account had been understated by Rs.18,000.

**Requirement:** Journalize the entries to rectify the above errors.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- I. Leadership.
- II. Organizing.
- III. Staffing.
- IV. Diversity.
- V. Organizational Culture.
- VI. Green Management.

**Answer the following questions.**

**(3x10=30)**

**Q.No.2:** Write a detailed note on Organizational Structure and its types.

**Q.No.3:** Define the process of Controlling? Explain the various Techniques of Controlling.

**Q.No.4:** Define the process of change?. Explain the various reasons of resistance to change.



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Pakistan Studies

Course Code: BSC-116

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

Q.1. Write short note on the following.

(5x6=30)

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

I. Two Nation Theory

I۔ دو قومی نظریہ

II. Simon Commission

II۔ سائمن کمیشن

III. Pirpur Report

III۔ پیر پور رپورٹ

IV. Bogra Formula

V۔ بوگرہ فارمولا

V. 8<sup>th</sup> Constitutional Amendment

V۔ آٹھویں آئینی ترمیم

Answer the following questions

(2x15=30)

درج ذیل سوالات کے جوابات تحریر کریں۔

Q. No. 2. Explain the educational services of Sir Syed Ahmad Khan.

سر سید احمد خان کی تعلیمی خدمات بیان کریں۔

Q. No. 3. Write a note on 1962 constitution.

1962 کے آئین پر نوٹ لکھیں۔



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Communication Skills

Course Code: BSCS-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)**

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

- Enlist the essential elements of a well-structured paragraph?  
i. ایک اچھے مربوط پیراگراف کئے لیے ضروری عناصر کی فہرست بنائیں۔
- Pen down the steps to write an effective essay?  
ii. ایک موثر مضمون لکھنے کے لئے مراحل کو قلمبند کیجئے۔
- What key information should be included in a professional CV?  
iii. پیشہ وارانہ CV میں کن اہم عناصر کو شامل کیا جانا چاہیئے؟
- What techniques can help to improve concentration during study sessions?  
iv. کون سے طریقے مطالعہ کے دوران توجہ کو بہتر بنانے میں مددگار ثابت ہو سکتے ہیں؟
- How can body language impact the effectiveness of a presentation?  
v. آپ کی باڈی لینگویج پریزینٹیشن کو کیسے موثر بنا سکتی ہے؟
- What is the difference between narrative and argumentative essays?  
vi. بیانہ اور دلیل کے ساتھ لکھے گئے مضامین میں کیا فرق ہے؟

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

**(2x15=30)**

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

- Why are Minutes of Meetings important in an organization? Debate on it.  
i. کسی آرگنائزیشن میں میٹنگز کے منٹس کیوں اہم ہیں؟ بحث کیجئے۔
- Discuss in detail the challenges that are commonly faced when translating from one language to another?  
ii. ایک زبان سے دوسری زبان میں ترجمہ کرتے وقت عام طور پر درپیش چیلنجز پر تفصیل سے بحث کیجئے۔





# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Media Ethics and Laws

Course Code: BSCS-104

Time: 3 Hrs. Marks: 60

## THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Write short explanations of the following.

(6x5=30)

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

A - Major Sources of Media Ethics in Pakistan

پاکستان میں میڈیا اخلاقیات کے اہم ذرائع

B - Media Regulation

میڈیا کا ضابطہ کاری نظام

C - PEMRA Ordinance

پیمر آرڈیننس

D - Article 19 of UN Human Rights Charter

اقوام متحدہ کے انسانی حقوق کے چارٹر کا آرٹیکل 19

E - Hutchinson Commission Report

ہچنسن کمیشن کی رپورٹ

F - Internal Pressures on Media Practices

میڈیا کے طرز عمل پر داخلی دباؤ

Q.2. Answer the following questions

(3x10=30)

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

A - What is meant by media regulation? Discuss the role of PEMRA as media regulator in Pakistan?

میڈیا کی ضابطہ کاری سے کیا مراد ہے؟ پاکستان میں میڈیا ریگولیٹر کے طور پر پیمر کے کردار پر روشنی ڈالیں۔

B - What are major principles of the Hutchinson Commission Report and their relevance to media ethics?

ہچنسن کمیشن رپورٹ کے اہم اصول کیا ہیں اور ان کا میڈیا اخلاقیات سے کیا تعلق ہے؟

C - Discuss how media laws are affecting freedom of the media in Pakistan?

پاکستان میں میڈیا قوانین کس طرح میڈیا کی آزادی کو متاثر کر رہے ہیں؟



## THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

### Q.1. Answer the following short questions.

(15x2=30)

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

- (1) قبل از اسلام ایرانی قوم کن چیزوں کی پرستش کرتی تھی؟
- (2) قبل از اسلام عربوں کے اعتقاتی اوصاف تحریر کیجیے۔ (صرف عنوانات)
- (3) عرب کے قدیم ترین بتوں کے نام بیان کیجیے۔
- (4) چار ازواج مطہرات کے نام تحریر کیجیے۔
- (5) حرب الفجار سے کیا مراد ہے؟
- (6) پہلی وحی کے نزول کے بعد حضرت خدیجہ نے نبی ﷺ کو تسلی کن الفاظ میں دی؟
- (7) عام الحزن سے کیا مراد ہے؟
- (8) ہجرت حبشہ کی دو وجوہات تحریر کیجیے۔
- (9) بیت عقبہ الاوائل کے دو اہم نکات لکھیے۔
- (10) ہجرت مدینہ میں نبی ﷺ کے ساتھی کون سے صحابی تھے؟ نیز انھوں نے کس غار میں پناہ لی؟
- (11) دعوت نبوی ﷺ کے اہم نکات لکھیے۔ (صرف عنوانات)
- (12) یوم الفرقان کس غزوہ کو کہا جاتا ہے؟
- (13) غزوہ سے کیا مراد ہے؟ غزوات کی تعداد بیان کیجیے۔
- (14) عہد نبوی کے معاشی نظام کی دو خصوصیات تحریر کیجیے۔
- (15) سیرۃ النبی ﷺ پر دو اردو کتب کے نام مع مصنفین کے اسلام گرامی تحریر کیجیے۔

### Q.2. Answer the following questions

(2x15=30)

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

- 1: نبی ﷺ کے مکی حالات زندگی اجمالاً بیان کیجیے۔
- 2: پہلی اور دوسری ہجرت حبشہ کے واقعات تفصیلاً تحریر کیجیے۔
- 3: فتح مکہ کی وجوہات، واقعات اور نتائج پر تفصیلاً بحث کیجیے۔
3. Discuss the causes, events and consequences of conquer of Makkah in detail.





## 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)

- درج ذیل الفاظ میں سے اسم، فعل اور حرف کی نشان دہی کریں:  
هُوَ، ضَرَبَ، بَلَدٌ، مِنْ، يَذْهَبُ
- اسم نکرہ اور اسم معرفہ میں کیا فرق ہے؟ مثالوں کے ذریعے سے تحریر کریں۔
- تعداد ظاہر کرنے کے لیے عربی میں اسم کی تین اقسام مثالوں کے ساتھ تحریر کریں۔
- مؤنث سماعی سے کیا مراد ہے؟ اس کی دو مثالیں تحریر کریں۔
- جملہ اسمیہ اور جملہ فعلیہ کے درمیان فرق لکھیں اور جملہ اسمیہ بنانے کے دو قواعد لکھیں۔
- "دَخَلَ" سے فعل ماضی معروف کی گردان تحریر کریں۔

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

سوال نمبر 2: درج ذیل عبارت کا سلیس اردو میں ترجمہ کریں۔

وَأَخَذَ إِبْرَاهِيمُ إِسْمَاعِيلَ مَعَهُ وَآخَذَ سَكِينًا، وَلَمَّا بَلَغَ إِبْرَاهِيمُ مَنًى، أَرَادَ أَنْ يَذْبَحَ إِسْمَاعِيلَ، وَاضْطَجَعَ إِسْمَاعِيلُ عَلَى الْأَرْضِ، وَأَرَادَ إِبْرَاهِيمُ أَنْ يَذْبَحَ، فَوَضَعَ السَّكِينَةَ عَلَى خُلْفِهِ إِسْمَاعِيلَ، وَلَكِنَّ اللَّهَ يُحِبُّ أَنْ يَرَى هَلْ يَفْعَلُ خَلِيلُهُ مَا يَأْمُرُهُ، وَهَلْ يُحِبُّ اللَّهُ أَكْثَرَ أَمِ ابْنُهُ أَكْثَرَ، وَنَجَّى إِبْرَاهِيمَ فِي الْإِمْتِحَانِ، فَأَرْسَلَ اللَّهُ جِبْرِيلَ بِكَتَبٍ مِنَ الْجَنَّةِ وَقَالَ: "ادْبَحْ هَذَا وَلَا تَذْبَحْ إِسْمَاعِيلَ" وَأَحَبَّ اللَّهُ عَمَلُ إِبْرَاهِيمَ فَأَمَرَ الْمُسْلِمِينَ بِالذَّبْحِ فِي عِيدِ الْأَضْحَى.

سوال نمبر 3: درج ذیل جملوں کو درست مبتدایا خیر کے ذریعے مکمل کریں۔ (5x2=10)

- الذَّار.....
- كسلانة.....
- أنا.....
- إن..... مجتهد.
- الفيل..... ضخم.

سوال نمبر 4: "التحية والتعارف" کے عنوان پر ایک عربی حوار (مکالمہ) تحریر کریں جو کم از کم دس جملوں پر مشتمل ہو۔



**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۔

۱۔ کتب الموضوعات کی وضاحت کریں

۲۔ مستشرقین کے حدیث پر دو اعتراضات لکھیں

۳۔ جامع ترمذی کی دو شروحات کے نام مع مولفین تحریر کریں

۴۔ حدیث کی لغوی و اصطلاحی تعریف کریں

۵۔ سنن ابن ماجہ کی دو خصوصیات تحریر کریں

۶۔ عہد صحابہ میں حدیث کے دو تحریری نسخوں کے نام لکھیں

(3x10=30)

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

۱۔ حدیث کی ضرورت و اہمیت کے عقلی و نقلی دلائل تحریر کریں

۲۔ عہد تابعین میں تدوین حدیث پر نوٹ لکھیں

۳۔ حجیت حدیث پر اعتراضات اور ان کے جوابات تحریر کریں



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Punjabi Akhan ty Muhawray

Course Code: BSPB-201

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

- 1۔ اکھان دی تعریف کرو۔
- 2۔ کلیشے تے محاورے وچ کیہ فرق اے؟
- 3۔ ”دب کے واہ تے رَج کے کھا“ دے موضوع نوں اپنے لفظاں وچ بیانو۔
- 4۔ ”آب آب کرمویں پچڑا فارسیاں گھر گالے“ دے مفہوم تے پچھو کڑنوں اپنے لفظاں وچ لکھو۔
- 5۔ پنجابی زبان دے کلاسیکی شاعراں کول محاوریاں دی ورتوں بارے مختصر نوٹ لکھو۔
- 6۔ محاوریاں دی ورتوں نال کلام وچ کیہ تبدیلی آندی اے؟

(3x10=30)

درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔

- سوال نمبر 2۔ پنجابی اکھاناں وچ رختل دے کہڑے کہڑے رُوپ بیان ہوندے نیں، ویردا کرو۔
- سوال نمبر 3۔ تھلے لکھے ہوئے محاوریاں دا مطلب لکھو اُتے جملیاں وچ ورتوں کرو۔
- راہٹ مارن۔ ڈھائی اکھر پڑھن۔ دُودھ وچ آکت رلاون۔ جندڑی ہلکان ہوون۔ خون دے گھٹ پیون
- سوال نمبر 4۔ ڈاکٹر شہباز ملک ہوراں دی کتاب ’سیانے کہندے نیں‘ موجب ”بھاء کس وگاڑیا؟ رات دیاں بھکھیاں“ وچ مت دیاں گلاں نوں تفصیلی بیان کرو۔



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Punjabi Zuban o Adab da Taaruf

Course Code: BSPB-202

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۔

(5x6=30)

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

- i داستان تے ناول وچ مدھلا فرق کیہ اے؟
- ii بولی، مپہ تے ماہیا وچ کار کیہ فرق اے؟ مختصر دسو۔
- iii لوک گیتاں دی اک قسم سٹھنی تے چانن پاؤ۔
- iv حضرت سلطان باہو ہوراں دی وجہ شہرت کیہ اے؟
- v ڈومنگھیاں شاماں کس دی تصنیف اے تے ایہدی صنف کیہ اے؟

(2x15=30)

درج ذیل سوالات کے تفصیلی جواب تحریر کریں۔

سوال 2: بابا بلھے شاہ دی کافی ”اُنھ جاگ گھراڑے مارناہیں“ دا فکری تجزیہ کرو۔

سوال 3: پیٹھ دتیاں صنفاں بارے تفصیل نال لکھو۔

غزل - کہانی



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Prose Genres - Introduction and Understanding

Course Code: BSU-103N

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

- 1۔ روزنامچے کے کہتے ہیں؟ اپنی پسند کے کسی ایک روزنامچے کا تعارف کروائیے۔
- 2۔ کالم کی تعریف کیجیے۔ نیر کی ایک ادبی کالم نگار کا تعارف لکھیے۔
- 3۔ ادبی خطوط کی اہمیت پر مختصر نوٹ لکھیے۔
- 4۔ انشائیہ کے کہتے ہیں۔ اردو کے کسی ایک معروف انشائیہ نگار کا تعارف کروائیں۔
- 5۔ افسانہ کے کہتے ہیں نیز اپنے پسندیدہ کسی ایک افسانے کا تعارف کروائیے۔
- 6۔ خاکہ کے کہتے ہیں؟ اپنے پسندیدہ خاکے پر مختصر نوٹ لکھیے۔

(3x10=30)

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

- 1۔ داستان کے کہتے ہیں؟ اردو کی کسی ایک داستان کا تفصیلی تعارف کروائیے۔
- 2۔ ناول اور افسانے میں کیا فرق ہے؟ اپنے پسندیدہ ناول کا کرداری جائزہ لیجیے۔
- 3۔ آپ بیتی اور سوانح عمری میں کیا فرق ہے؟ مثالوں سے وضاحت کریں۔



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Literary Terms

Course Code: BSU-104N

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)

درج ذیل ادبی اصطلاحات پر مختصر نوٹ لکھئے۔

سوال نمبر 1:

ابہام، آورد، نرگسیت، خراجیت، حقیقت نگاری، علاقیت

(3x10=30)

درج ذیل ادبی اصطلاحات پر مختصر نوٹ لکھئے۔

سوال نمبر 2:

اساطیر، نرگسیت، داخلیت



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

1. Define *biochemistry* and name two historical milestones in its development.
2. List two hormones that regulate glycogen metabolism.
3. Differentiate between amylose and amylopectin.
4. Why is cellulose indigestible by humans?
5. Explain the role of *lipopolysaccharides* in bacterial cell walls.
6. Differentiate between saturated and unsaturated fatty acids.
7. What is the function of *liposomes* in drug delivery?
8. Differentiate between amylose and amylopectin.
9. How many NADH molecules are produced per glucose in the Krebs cycle?
10. What is the significance of the *pentose phosphate pathway* in RBCs?
11. How does *cyanide* inhibit the electron transport chain?
12. Describe the role of *glycogen phosphorylase*.
13. What causes *medium-chain acyl-CoA dehydrogenase (MCAD) deficiency*?
14. How do ketone bodies form during starvation?
15. Why is vitamin C essential for collagen synthesis?

**Q.2. Answer the following questions. (6x5=30)**

1. Compare the structure and function of triglycerides and phospholipids.
2. Glycolysis, Outline the pathway, highlighting regulatory steps and ATP yield.
3. Compare the structure and biological roles of starch and chitin.
4. Explain *beta-oxidation* of palmitic acid (C16) and calculate net ATP yield.
5. How do glucagon and cortisol regulate blood glucose during fasting?
6. Explain chemiosmotic coupling and ATP synthesis.





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

**i. Explain the following terms: (2x3=6)**

**a. Bioethics**

**b. GMOs**

**ii. What are genetically modified plants? Discuss how genetically modified plants can have impact on the environment?**

**iii. Discuss the importance of personal protective equipments in laboratory settings.**

**iv. How are regulatory bodies playing their role in ensuring adherence to bioethics principles in biomedical research?**

**v. What emergency procedures can be taken to ensure biosafety if an accidental incident occurs in the laboratory?**

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

**i. Describe biosafety level 4 (BSL-4), its corresponding risk assessment and containment measures. Provide examples of pathogens that can be handled at this level.**

**ii. Name different types of biohazards. What threats are posed by biohazards to the researchers working in a biomedical laboratory? What precautions can be taken by them?**

**iii. What are the bioethical aspects of genetic engineering and medical genetics, and how can they be addressed?**



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- Convert the equation  $(342)_x = (142)_8$  to decimal number system, and then find base x.
- Draw the diagram of XOR gate, and prove that  $x' \oplus y = x \oplus y' = (x \oplus y)'$
- Determine the truth table for  $F(A,B,C) = (A'+B) \cdot (A+C) \cdot (A'+B+C')$ . Also, express F as sum of minterms.
- Given the following output equations for half adder, and full adder. Transform the equations of full adder using the output equations of half adder.  
 $S_h = X \oplus Y$   
 $C_h = XY$   
 $S_f = X'Y'Z + X'YZ' + XY'Z' + XYZ$   
 $C_f = X'YZ + XY'Z + XYZ' + XYZ$
- Obtain the simplified expression in SOP form for the following function using K-Map.  
 $F(A,B,C,D) = A'B'D + AB'D + BC'D + BCD' + AC'$
- Implement  $F(A, B, C) = \sum(0, 2, 4, 5, 7)$  using 4x1 MUX. Keep two variables A and B as selection lines to the multiplexer. You must clearly label the diagram to get the full credit.

**Answer the following questions.**

**(3x10=30)**

**Question#2:**

Perform the following tasks for a Boolean function  $F(w,x,y,z) = (x'y + z)' + xyz + wy'z$ .

- Draw truth table.
- Express F as "sum of minterms" and "product of maxterms".
- Simplify F to minimum number of literals.
- Draw the logic circuit diagram of the simplified expression using NAND gates only.

**Question#3:**

Design a combinational circuit for a parking place that has four parking lanes (A, B, C, D) for parking four cars. Each parking lane may either be occupied (1) or available (0). The status of each parking lane is detected by a sensor, and it is fed to a combinational circuit that generates an output F, such that  $F = 1$ , if the count of available parking lanes is equal to or greater than the count of occupied parking lanes.

**Question#4:**

Draw the logic circuit diagram, characteristic table, excitation table of JK flip flop. Show step-by-step construction of 2-bit DOWN counter using JK flip flops.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

**1) Provide a brief description of each of the following, supported by an example:**

- A.** What is a binary operator?
- B.** What is a posttest loop?
- C.** How would a static local variable be useful?

**2) Write the output of each of the following programs:**

**Note:** You may write the output as produced by either **C** or **C++** — both are acceptable.

**Program 1**

```
bool s = true, t = true;
s = !s || !t;
s = s && t || s && !t;
t = !(s || t) && (s && t);
printf("%d \t %d \n", s, t);    // OR: cout << s << "\t" << t << endl;
```

**Program 2**

```
for (int i = 0; i < 7; i++)
{
    if (i % 2 == 0)
        printf("%d \t", 2 * i - 1);    // OR: cout << 2 * i - 1 << "\t";
    else if (i % 3 == 0)
        printf("%d \t", i * i);        // OR: cout << i * i << "\t";
    else if (i % 5 == 0)
        printf("%d \t", i + 1);        // OR: cout << i + 1 << "\t";
    else
        printf("%d \t", i);            // OR: cout << i << "\t";
}
```

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

- 1)** Write a program that calculates the average score of a student for five exams, displaying the result in decimal notation with one decimal place. The program should prompt the user to enter the score (out of 100) for each exam.
- 2)** The area of a parallelogram is the parallelogram's base times its height. Write a program that asks the user to enter the base and height of two parallelograms. The program should then determine and display which parallelogram has the greater area, or state if both areas are the same.
- 3)** Write a program that calculates and displays a table showing the distance traveled by a river flowing at a rate of 2.3 meters per second. The table should include the distance traveled for each second up to 25 seconds.







**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(9x2=18 + 4x3=12)**

- 1) Which component of the microprocessor performed the task of fetching the instruction from memory?
- 2) Which two operations are performed in the assembly Language “LOOP” instruction?
- 3) What is the minimum signed (negative) value stored in 8-bits (using 2’s complement notation)?
- 4) What is the new value of register IP, after executing a 4-byte instruction residing at offset address 01E0?
- 5) A memory has a physical address 4A37Bh. Compute the offset address if the segment number is 40FFh
- 6) Write an instruction to clear a register BX using an XOR logical instruction?
- 7) How does a signed value in the DX register multiply by 8, using a shift instruction?
- 8) Which stack operation is performed by the ‘RET’ instruction, used in Procedure?
- 9) What are the two operations, performed in the assembly Language stack instruction “PUSH source”?
- 10) What would be in BL and in carry flag after the execution of the last instruction “RCL BL,1” in the following code given below (STC instruction set the carry flag)?

```
STC
MOV BL,47H
RCL BL,1
```

- 11) Assume AX=7FFFh; BX=FFFFh; What will be in CX when the following code fragment terminates:

```
CMP AX, BX
JG aa
MOV CX,10
JMP exit
aa: MOV CX,20
exit: MOV AH,4Ch
INT 21h
```

- 12) Convert the following into Assembly Language Code (using conditional jumps)

(Suppose DL contains the ASCII code of a character.)

```
(IF DL>=" A") AND (DL<=" Z")
THEN
DISPLAY DL
END-IF
```

- 13) What will be the values of the destination register ‘CL’ and flags (carry, zero, sign, overflow) after the execution of the given instruction? (Let all flags be set before the execution of this instruction)

```
SUB CL, 0B5H          where CL = 0A5H
```

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

**(8+8+6+8=30)**

- 1) Write a program that prompts the user to enter a character, and on subsequent lines prints its ASCII code in binary and the number of 1 bits in its ASCII code. (Hint: use shift/rotate instructions), Sample execution:

```
TYPE A CHARACTER: A
THE ASCII CODE OF A IN BINARY IS 01000001
THE NUMBER OF 1 BITS IS
```

- 2) Assume SP=0100h before the start of the very first instruction "CALL 0107" in the following program. Give the Answers to the following questions:

177F:0100	E80400	CALL 0107
177F:0103	B44C	MOV AH, 4Ch
177F:0105	CD21	INT 21
177F:0107	50	PUSH AX
177F:0108	53	PUSH BX
177F:0109	D1E0	SHL AX, 1
177F:010B	B0A1	MOV AL, A1
177F:010D	5B	POP BX
177F:010E	58	POP AX
177F:010F	C3	RET

- i) What is the value of IP after the execution of instruction CALL 0107?
  - ii) What would be in SP after the execution of the "CALL 0107" instruction?
  - iii) What is in SP after the execution of the RET instruction?
  - iv) What is in IP after the execution of the RET instruction?
- 3) What will be the values of registers CX, SI, DI and variable ARRAY2 after the execution of the given program? (Assume ARRAY1 is stored at address 0100)

```
.DATA
ARRAY1 DB 35h,45h,25h,75h,50h,90h,50h,55h
ARRAY2 DB 8 DUP (0)
.CODE
MOV SI, OFFSET ARRAY1
MOV DI, OFFSET ARRAY2
MOV CX, 08
LBL1:
MOV AL, [SI]
CMP AL, 40h
JB LBL2
ADD AL, 10h
LBL2:
MOV [DI], AL
INC SI
INC DI
DEC CX
JNZ LBL1
```

- 4) The content of PC in the basic computer is 3AF (all numbers are in hexadecimal). The content of AC is 7EC3. The content of memory at address 3AF is 932E. The content of memory at address 32E is 09AC. The content of memory at address 9AC is 8B9F.

- i) What is the instruction that will be executed?
- ii) Give the contents of registers PC, AR, DR, AC, and IR in hexadecimal and the values of E, I, and the sequence counter SC in binary at the end of the instruction cycle.



## THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

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

1. Explain how access specifiers (public, private, protected) in C++ support encapsulation.
2. When defining an array of class objects, how do you pass arguments to the constructor for each object in the array? Explain with an example.
3. How can the compiler determine if a constructor is a copy constructor? Describe a situation where member-wise assignment is not desirable.
4. Complete the following table by filling in private, protected, public, or inaccessible in the right column:

In a private base class, this base class MEMBER access specification...	...becomes this access specification in the derived class.
Private	
Protected	
Public	

5. Determine the output of the following C++ programs. Make sure to indicate if any errors are present.

```
class A{
public:
    A(){ cout<<"1"; }
    ~A(){ cout<<"2"; }
};
int main(){
    A *a = new A[3];
    delete a;
}
```

6. Determine the output of the following C++ programs. Make sure to indicate if any errors are present.

```
class Test{
public:
    int x;
    Test(int x = 0) { this->x = x; }
    void change(Test *t) { t = this; }
    void print() { cout << x << endl; }
};
int main(){
    Test obj(5);
    Test *ptr = new Test (10);
    obj.change(ptr);
    obj.print();
    return 0;
}
```

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

1. Design a C++ class hierarchy with a base class **Shape** and derived classes **Circle** and **Rectangle**. Include data members like radius for Circle and length and width for Rectangle. Include a virtual function `calculateArea()` in Shape class. Implement this function in the derived classes (Circle and Rectangle) to calculate and return their respective areas. Write a program that creates an array of Shape pointers, stores Circle and Rectangle objects, and uses polymorphism to call the correct `calculateArea()` function for each object.
2. Design a C++ class named as **Counter**. Overload the prefix ++ and postfix ++ operators to increment the counter value. Demonstrate the difference between prefix and postfix increment.
3. Write a C++ program to create a sequential file named "data.txt" and store student records (roll number, name, and marks) in it. Your program should allow the user to input a roll number, search for the corresponding record, and modify the student's marks.





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

1. Define 'Software' in the context of "Software Engineering"?
2. Enlist the phases of "software requirement engineering"? Explain any two phases in details?
3. Define "software quality assurance" with example?
4. Explain relationships of 'entity' with respect to "entity relationship diagram (ERD)"?
5. Explain relationships of use-cases with examples?
6. Explain Project's life cycle shortly?

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

**(3x10=30)**

1. Explain "Agile team" in details with example?
2. What are the main heads to maintain use case description? Explain these in details?
3. Define "design pattern" with example? Explain one type of "design pattern" in details?



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

1. What is HTTP and HTTPS? How do they differ in terms of security?
2. Define FTP. What is it used for?
3. What is the function of a firewall in a network?
4. Explain what is meant by network congestion.
5. What are wireless communication standards (e.g., Wi-Fi, Bluetooth)?
6. Define and differentiate between unicast, multicast, and broadcast.

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

**Question#2.**

Explain the TCP/IP model in detail. Compare it with the OSI model.

**Question#3.**

Describe the concept of VPN (Virtual Private Network) and how it ensures secure communication.

**Question#4.**

Analyze the impact of network protocols on communication efficiency and reliability.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- Discuss the major factors behind the disadvantages of file processing system.
- Briefly explain the difference between logical data independence and logical data independence.
- Explain surrogate key, candidate keys and secondary keys with help of examples.
- Briefly explain data integrity, entity integrity, and referential integrity.
- Explain the lost update problem, and dirty read problem of concurrent transactions.
- Explain the difference between join operation and subquery with the help of an example.

**Answer the following questions.**

**(3x10=30)**

**Question#2: Draw ER diagram of the following system:**

A hospital keeps information of patients, physicians and hospital rooms. The hospital maintains the medical history of every patient. Some patients are resident patients (they spend at least one night in the hospital) and others are outpatients (they are treated and released). Resident patients are assigned to a room. Each room is identified by a room number. The system also stores the room type (private or semiprivate) and room fee. Over time, each room will have many patients who stay in it. Each resident patient will stay in only one room. Every room must have had a patient, and every resident patient must have a room.

Attributes of PHYSICIAN include Physician ID (the identifier) and Specialty. A patient is admitted in the hospital by exactly one physician called admitting physician. A physician may admit any number of patients. Once admitted, a given patient is treated by one or more physician. A particular physician may treat any number of patients. Whenever a patient is treated by a physician, the hospital maintains the details of the treatment such as treatment date, prescription, the advised lab tests etc.

**Question#3:**

Normalize the following PROJECT relation up to 3NF. You must specify the definition of the normal form and set of relations obtained after each Normal form.

PR#, PNAME, BUDGET, STARTDATE (SD), PROJMGR (PM), EMPNO, ENAME, SAL, DEPTNO, DEPTNAME, HOURS, RATING

- Each project has a unique number identified by PR#.
- Each project has one manager specified by PROJMGR (PM).
- One employee can work on many projects and vice versa.
- HOURS describes the no. of hours per week that a particular employee is assigned to work on a particular project.
- RATING shows the performance of an employee on a given project.

**Question # 4**

a) Create the following tables for a Sales Invoice.

(5)

Table Name: <b>Invoice</b>		
Col Name	Data Type	Constraints
invoice#	NUMBER(5)	Primary Key
inv_date	DATE	DEFAULT sysdate
cust_name	NUMBER(5)	Foreign Key references Customer
payment	CHAR(12)	Cash, Cheque, Credit Card

Table Name: <b>invoice_details</b>		
Col Name	Data Type	Constraints
invoice#	NUMBER(5)	Primary Key, Foreign Key references Invoice
prod#	NUMBER(5)	Primary Key
qty_ordered	NUMBER(4)	
price	NUMBER(5)	Above 5

b) Write the following queries using the above tables:

- i. List all the products whose price is between 100 and 500. (1)
- ii. Write a query to display invoice#, inv\_date, *s\_inv\_total*, and cust\_name. The attribute *s\_inv\_total* is a derived attribute. (2)
- iii. Find the name of the most expensive product. (2)



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- I. Write down the Stirling approximation. Also, mention its importance?
- II. Write down three entropy properties and what is the effect of temperature on entropy change.
- III. Give a mathematical relation between Gibbs energy, entropy and enthalpy of the process?
- IV. Differentiate between Classical and Statistical Thermodynamics with an example?
- V. What is relationship between the standard free energy and the equilibrium constant?
- VI. Explain the third law of thermodynamics and explain its relation with entropy.

**Answer the following questions.**

**(3x10=30)**

**Q.2:** Derive the Vant's Hoff equation and what is its importance

**Q.3:** Derive the expression for the Sterling approximation?

**Q.4 (a):** Prove that  $Q = Q_t.Q_r.Q_v.Q_e$

**(b):** Describe and derive the Clausius-Clapeyron equation



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED****Q.1. Answer the following short questions.****(15x2=30)**

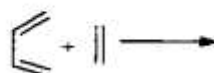
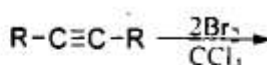
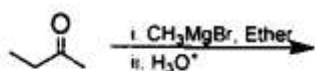
- Why alkyl amines are more basic than ammonia?
- What is meant by steric inhibition of resonance?
- Why tertiary carbocations are more stable than secondary and primary carbocations?
- What is the difference between tautomerism and resonance?
- How alkanes are prepared from ketone?
- Classify the following compounds as aromatic and anti-aromatic:



- Give the major product of reaction of 1-butene with HBr in the presence of peroxide.
- Differentiate between inductive and resonance effect.
- What is the criteria for aromaticity?
- Briefly explain simmon smith reaction?
- Trichloroacetic acid is more acidic or trifluoroacetic acid. Justify.
- Why halogens are deactivating but ortho-para directing groups?
- Nitration of phenol is  $10^3$  times faster than benzene. Explain.
- N, N-dimethylaniline is less basic than 2,6-dimethylaniline. Justify.
- Why carboxylate ion is more stable than alkoxide ion?

**Answer the following questions.**

- Q.2** (a) Write down the preparation of phenol from any two routes? (5)  
(b) Write a note on hydrogen bonding and its effect on various properties of organic compounds. (5)
- Q.3** (a) Differentiate between hyper conjugation and inductive effect?  
Draw all the hyperconjugating structures of tertiary carbocation. (5)  
(b) What is nucleophilic substitution reaction?  
Discuss unimolecular substitution reaction in detail. (5)
- Q.4** Complete the following reaction with mechanisms? (2.5x4)





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- i. Explain the difference between Exogenous and Endogenous variables with examples.
- ii. Discuss the Tobin's Q Theory of Investment.
- iii. What is the Relative Income Hypothesis and how does it differ from the Absolute version?
- iv. Explain Autonomous and Induced Investment with examples.
- v. Explain the concept of Money Multiplier and its role in the banking system.
- vi. Define and differentiate between Marginal and Average Propensity to Consume.

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

**(3x10=30)**

- i. Discuss the causes and types of inflation. Evaluate the monetary vs. structural approaches to inflation control.
- ii. Discuss the different types of unemployment and their causes, with special reference to Pakistan.
- iii. Discuss the Quantity Theory of Money. Compare it with the Liquidity Preference and Portfolio Balance approaches.





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

- i. Illustrate the theoretical contribution of Ibn-e-Khuldun in Islamic economics.
- ii. Discuss the concept of insurance in Islam.
- iii. What is the significance of 'Ijtihad' in Islam?
- iv. Discuss different aspects of hoarding in Islam.
- v. Define the concept of "Bai Salam".
- vi. Discuss the role of state in an Islamic economy.

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

- i. Define Islamic economics. Illustrate different sources of Islamic economics.
- ii. Write down different measures taken by a Muslim state against the accumulation of personal wealth.
- iii. Define "Makaas" and "Al-Makaas" in Islamic taxation system and also write down some Islamic canons of taxation.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- 1) What is the main contention of *Paradise Lost* book 9?
- 2) Which religious reference does Donne use in “The Good Morrow”?
- 3) What is John Donne’s main contention in the Holy Sonnet “Thou Hast Made Me, and Shall Thy Work Decay”?
- 4) What are some of the impossibilities Donne mentions in the beginning of “Song: Go and Catch a Falling Star”?
- 5) How does Shakespeare make a comparison with a summer’s day in Sonnet 18?
- 6) What is a Mock Epic?

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

**(3x10=30)**

- 1) Discuss Epic characteristics in Milton’s *Paradise Lost* Book 1.
- 2) How does Pope critique aristocracy in *Rape of the Lock*?
- 3) Critically analyze John Donne’s poem, “Valediction: Forbidding Mourning”.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

- i. Explain the difference between phoneme and allophone with the help of example.
- ii. What is the difference between language acquisition and language learning?
- iii. What is affixation? Provide at least two examples.
- iv. Write the difference between monothong and diphthong. Give examples.
- v. What are diachronic and synchronic linguistics?
- vi. What are dependent and independent clauses?

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

- i. What are the places of articulation? Support your answer with examples.
- ii. What is a morpheme? Explain inflectional and derivational morphemes with the help of examples.
- iii. Write a short note on the importance of linguistics.



# UNIVERSITY OF THE PUNJAB

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

Roll No. ....

Paper: Civics and Community Engagement

Course Code: GCCE-101

Time: 3 Hrs. Marks: 60

**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.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

1. How many different license plates can be made if each plate contains a sequence of three uppercase English letters followed by three digits (and no sequences of letters are prohibited, even if they are obscene)?
2. What is the difference between Influence Graphs and Collaboration Graphs?
3. Suppose that the function  $f$  from  $A$  to  $B$  is a one-to-one correspondence. Let  $R$  be the relation that equals the graph of  $f$ . That is,  $R = \{(a, f(a)) \mid a \in A\}$ . What is the inverse relation  $R^{-1}$ ?
4. Find the integer  $a$  such that

$$a \equiv 99 \pmod{41} \text{ and } 100 \leq a \leq 140.$$

5. What is the Cartesian product  $A \times B \times C$ , where  $A = \{0, 1\}$ ,  $B = \{1, 2\}$ , and  $C = \{0, 1, 2\}$ ?
6. Evaluate the following summation:

$$\sum_{i=1}^4 \sum_{j=1}^3 ij$$

**Answer the following questions.**

**(3x10=30)**

**Question 2.** For which values of  $n$  do these graphs have an Euler circuit? Explain your answer.

- a)  $K_n$
- b)  $C_n$
- c)  $W_n$
- d)  $Q_n$

**Question 3.** Translate each of these statements into logical expressions in three different ways by varying the domain and by using predicates with one and with two variables.

- a) Someone in your school has visited Uzbekistan.
- b) Everyone in your class has studied calculus and C++.
- c) No one in your school owns both a bicycle and a motorcycle.
- d) There is a person in your school who is not happy.
- e) Everyone in your school was born in the twentieth century.

**Question 4.** a) Prove that if  $n$  is a positive integer, then  $n$  is even if and only if  $7n + 4$  is even.

b) Determine whether each of these functions is a bijection from  $\mathbf{R}$  to  $\mathbf{R}$ .

i.  $f(x) = -3x^2 + 7$

ii.  $f(x) = x^5 + 1$



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- i. Why is it important to use simple and precise language?
- ii. How do visuals or examples help engage a specific audience?
- iii. How can a writer maintain integrity in their work?
- iv. How can you make an introduction clear and engaging?
- v. How can plagiarism affect the credibility of your writing?
- vi. How can setting goals improve your writing process?

**Answer the following questions.**

**(3x10=30)**

- Q2.** What strategies can a writer use in the introduction to engage the reader's interest without inserting personal opinions or arguments?
- Q3.** Why is it important for writers to maintain honesty and accuracy when presenting information in expository writing, and what are the consequences of failing to do so?
- Q4.** What strategies can writers use during the revising stage to improve the content, structure, and clarity of their writing, and how does this step enhance the overall quality of the text?





**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 an entrepreneur and businessman?
- b: Why is resilience important for entrepreneurs?
- c; What is a SWOT analysis?
- d:What is market segmentation?
- e: why is cash flow important for a business?
- f:What is conflict resolution in a team?

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

- a: Define entrepreneurship. Write down its key concepts.
- b:What is Branding? Elaborate its importance in business.
- c:Write a detailed note on the concepts of assets and liabilities in finance.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(15x2=30)**

- i. Enlist major types of rock?
- ii. Explain Big Bang Theory?
- iii. Differentiate between endogenic and exogenic processes?
- iv. Define neap tides?
- v. Explain temperature inversion?
- vi. Explain the difference between the star and moon?
- vii. Define volcanic activity?
- viii. What is the economic importance of Atlantic Ocean?
- ix. Explain the role of ozone layer?
- x. What is air masses?
- xi. Differentiate between rotation and revolution?
- xii. What are arenaceous rocks?
- xiii. Define evaporation?
- xiv. Explain Ocean salinity?
- xv. Enlist different layers of atmosphere?

**Answer the following questions.**

**(3x10=30)**

**Q2: Define Rock? Explain different types of Rocks?**

**Q3: Explain the structure of atmosphere with the help of diagram?**

**Q4: Explain the configuration of ocean floor with the help of diagram?**





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(15x2=30)**

- i. Define Cartography.
- ii. Give two examples of Datum.
- iii. What is the difference between a coordinate system and a reference system?
- iv. Name principles of map design.
- v. What is proofing in map production?
- vi. Define Hue.
- vii. Write two advantages of Cartographic symbology.
- viii. What do you know about typography?
- ix. List the principles of symbolization.
- x. How are the ellipsoidal and geoidal Earth different?
- xi. What is map scale?
- xii. What is the chromatic model?
- xiii. List types of maps.
- xiv. Give two examples of thematic maps.
- xv. What is texture in maps?

**Answer the following questions.**

**(3x10=30)**

**Q.2. Describe in detail the relationship between Cartography and Geography, and how the nature and scope of cartography have been modified over the years.**

**Q.3. Discuss cartographic symbols and their importance in detail..**

**Q.4. Explain the importance of cognitive, social, and ethical issues in Cartography.**



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Ethics (For Non-Muslims)

Course Code: GETH-101

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following questions in detail.**

**(6x10=60)**

سوال نمبر 1: درج ذیل سوالات کے تفصیلی جواب دیں۔

1. What is the role of Ethics in individual life?
2. Mention five good Ethics.
3. What are the Ethical values in Christianity?
4. Describe the importance of Justice in Islam.
5. Write a note on the concept of virtue and evil.
6. What do you know about the concept of "Falah"?

- ۱۔ انفرادی زندگی میں اخلاقیات کا کیا کردار ہے؟
- ۲۔ اخلاقیات میں سے پانچ اچھی اخلاقیات کی وضاحت کیجئے۔
- ۳۔ عیسائیت میں اخلاقی اقدار کیا ہیں؟
- ۴۔ اسلام میں "انصاف" کی اہمیت واضح کیجئے۔
- ۵۔ اچھائی اور برائی کے تصور پر مضمون لکھئے۔
- ۶۔ تصور "فلاح" کے بارے میں آپ کیا جانتے ہیں؟



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Guru Granth Sahib Ji

Course Code: GG-001 (RE-CONDUCT)

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

(6x5=30)

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

- 1: ونڈ چھلنا (تقسیم کر کے کھانا) کو گوربانی کی روشنی میں بیان کریں۔
- 2: گورونانک صاحب کے "بابربانی" کے کسی ایک شبد کو تحریر کریں۔
- 3: رہت مریدہ کے مطابق چار گریہوں کے نام تحریر کریں۔
- 4: اکال تخت صاحب کہاں واقع ہے۔ مختصر بیان کریں۔
- 5: ننکانہ صاحب میں گورونانک صاحب کے استھانوں کے نام تحریر کریں۔
- 6: بی بی نانکی کا جنم کہاں ہوا ہے؟ نوٹ لکھیں۔

(3x10=30)

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

- 1: گورو گرنتھ صاحب جی کی پہلی پوڑی اور اس کا ترجمہ تحریر کریں۔
- 2: سکھ دھرم میں پانچ باتوں کی کیا اہمیت ہے؟ نوٹ لکھیں۔
- 3: سکھ مذہب کی فلاسفی کو اپنے الفاظ میں بیان کریں۔



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Ideology and Constitution of Pakistan

Course Code: GICP-101

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(5x6=30)**

سوال نمبر 1: درج ذیل سوالات کے تفصیلی جواب دیں۔

i. Sir Sayid Ahmad Khan

i. سر سید احمد خان

ii. Partition of Bengal 1905

ii. تقسیم بنگال 1905

iii. Objectives Resolution 1949

iii. قرارداد مقاصد 1949

iv. One Unit

iv. ون یونٹ

v. What is Constitution?

v. آئین کیا ہے؟

**Answer the following questions in detail.**

**(2x15=30)**

درج ذیل سوالات کے تفصیلی جواب دیں۔

**Q. No. 2. Discuss the Role of women in the Pakistan Movement.**

سوال نمبر 2۔ تحریک پاکستان میں خواتین کے کردار پر بحث کریں۔

**Q. No. 3. Explain the impacts of 18<sup>th</sup> Constitutional amendment, on the federation of Pakistan.**

سوال نمبر 3۔ اٹھارویں آئینی ترمیم کے وفاق پاکستان پر اثرات کی وضاحت کریں۔



# UNIVERSITY OF THE PUNJAB

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

Roll No. ....

Paper: Islamic Studies / Ethics (For Non-Muslims)

Course Code: GISL-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۔

- Describe three virtues of the Holy Quran.
- Write a blessed hadith with translation on protection of hadith.
- Which person is said to be poor in the hadith.
- Write the names of the Prophet's (ﷺ) daughters.
- When did the Battle of Uhud take place and explain two reasons for it?
- Write only the names of the five main sources of Islamic jurisprudence.

- الف۔ قرآن مجید کے تین فضائل بیان کریں۔
- ب۔ حفاظت حدیث پر ایک حدیث مبارکہ مع ترجمہ تحریر کریں۔
- ج۔ حدیث میں غریب کس شخص کو کہا گیا ہے؟
- د۔ نبی کریم ﷺ کی بیٹیوں کے نام لکھیے۔
- ه۔ غزوہ احد کب پیش آیا اور اس کے دو اسباب بیان کریں؟
- 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 اللَّهُ عَلَيْهِ وَسَلَّمَ قَالَ: «التَّاجِرُ الصَّدُوقُ الْأَمِينُ 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. 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:  
 $A = \{1,2,3, \dots, 10\}$ ,  $B = \{2,3,5,7\}$ ,  $C = \{4,6,8,9,10\}$ .
- (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. (15x2=30)**

- i) Determine with reasoning whether the sentence “The sun rises in the east” is a proposition or a non-proposition.
- ii) Are the following propositions logically equivalent?  
Proposition 1:  $\forall x \in N, x^2 > x$ . Proposition 2:  $\forall x \in N, x > 1 \Rightarrow x^2 > x$ .  
Explain why or why not?
- iii) The statement “The government has introduced new traffic rules to improve road safety” is followed by two conclusions numbered I and II.  
Conclusion I: Accidents will reduce due to stricter traffic rules.  
Conclusion II: People will follow traffic rules out of fear of penalties.  
Decide which of the given conclusions logically follow the statement and choose the appropriate answer:  
(a) If only conclusion I follows.  
(b) If only conclusion II follows.  
(c) If either conclusion I or II follows.  
(d) If neither conclusion I nor II follows.  
(e) If both conclusions I and II follow.
- iv) How do you determine whether a System of Linear Equations has a unique solution or infinitely many solutions?
- v) Explain the concept of the Slope of a Curve and how Derivatives are related to it.
- vi) What is the difference between Linear Decay and Exponential Decay?
- vii) Explain the characteristics of a Binomial Probability Experiment.
- viii) What are the key properties of the Correlation Coefficient?
- ix) Explain the concept of Regression Analysis and its importance.
- x) Explain the purpose of using the Chi-square Test of Independence.
- xi) A patient is diagnosed with a specific illness if:  
 $p$ : “The patient has a fever”       $q$ : “The patient has a sore throat”.  
Construct the Truth Table for the compound statement  $p \wedge q$ .
- xii) Draw the possible inferences from the following premises through a Venn-diagram:  
Premise 1: All apples are fruits. Premise 2: All fruits are healthy.
- xiii) What is Statistical Inference? Explain.
- xiv) What is Scatter Plot/Diagram? Explain.
- xv) What is System of Linear Equations?

Answer the following questions. Use of Scientific Calculator and the Statistical Tables is allowed.

- Q2.** A study investigates whether household income level (high or low) is associated with renewable energy adoption (adopted or not adopted). The observed data from 500 households are given in the following 2x2 contingency table: (08)

Income Level	Renewable Energy	
	Adopted	Not Adopted
High	150	50
Low	100	200

At the  $\alpha = 0.05$  significance level, test whether income level and renewable energy adoption are associated?

- Q3.** The following table records the daily exercise time (X) and calories burned (Y) for 10 individuals. (10)

Exercise Time (X: in minutes)	20	30	40	50	60	70	80	90	100	110
Calories Burned (Y)	80	110	150	190	220	270	300	340	380	400

- Compute the Pearson's Correlation Coefficient between Exercise Time and the Calories Burned.
- Estimate a Simple Linear Regression Model that predicts the Calories Burned from the Exercise Time.

- Q4.** A social media influencer has 10,000 followers at the start of the year. His follower count grows exponentially at a rate of 15% per month. How many followers will he have at the end of 6 months? (06)

- Q5.** A population  $P(t)$  of a species is modeled by the function: (06)

$$P(t) = 1000 e^{0.05t}$$

where  $P(t)$  represents the population at time  $t$  in years.

- Find the rate of change of the population at any time  $t$ .
- What is the rate of change of the population after 10 years?



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

1. What is the definition of culture? Difference in material and non-material culture.

1. ثقافت کی تعریف کیا ہے؟ مادی اور غیر مادی ثقافت میں کیا فرق ہے؟

2. How does society influence individual behavior?

2. سماج کس طرح فرد کے رویے پر اثر انداز ہوتا ہے؟

3. What is the social construction of gender?

3. صنف (جینڈر) کی سماجی تشکیل کیا ہے؟

4. How do gender relations change in modern times?

4. جدید دور میں صنفی تعلقات کس طرح تبدیل ہوتے ہیں؟

5. What are the roles and responsibilities within a family?

5. خاندان میں کردار اور ذمہ داریاں کیا ہیں؟

6. How can education promote gender equality?

6. تعلیم صنفی مساوات کو کس طرح فروغ دے سکتی ہے؟

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

**(3x10=30)**

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

1. How do cultural norms and values shape individual behavior and societal structures?

Provide examples from Pakistani society.

1. ثقافتی اقدار اور اصول کس طرح فرد کے رویے اور سماجی ڈھانچے کو تشکیل دیتے ہیں؟ پاکستانی معاشرے کی مثالوں کے ساتھ وضاحت کریں۔

2. Discuss the major socio-cultural issues faced by Pakistan, such as poverty, illiteracy, and gender inequality.

2. پاکستان کو درپیش بڑے سماجی و ثقافتی مسائل پر بحث کریں، جیسے غربت، ناخواندگی اور صنفی عدم مساوات۔

3. How does patriarchy influence the social construction of gender, and what are its implications for women's empowerment

3. جس نسواں (Patriarchy) صنف کی سماجی تشکیل پر کس طرح اثر انداز ہوتا ہے، اور اس کے خواتین کے با اختیار ہونے پر کیا

اثرات مرتب ہوتے ہیں؟



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Women's History in Pakistan

Course Code: GS-105N

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

(5x6=30)

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

i. Write a new few poets under Mughals rule.

i. مغلوں کے دور حکومت میں کچھ نامور شاعروں کے نام لکھیں۔

ii. Who was Bi Amma

ii. بی اماں کون تھیں

iii. Who started the journal of Tazib-Niswan

iii. تہذیب عنوان رسالہ کس نے شروع کیا

iv. Comment on the service of Fatima Jinnah.

iv. فاطمہ جناح کی خدمات پر تبصرہ کریں۔

v. Who wrote the book from Purdah to Parliament?

v. پردہ ٹو پارلیمنٹ کتاب کس نے لکھی؟

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

(2x15=30)

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

i. Discuss the struggle of women for their rights in colonial period in India.

i. ہندوستان میں برطانوی حکومت میں عورتوں نے اپنے حقوق کے لئے جو جدوجہد کی اس پر بحث کریں۔

ii. Discuss family law ordinance of 1961 critically.

ii. مسلم فیملی لاء آرڈیننس 1961 پر تنقیدی بحث کریں۔





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

1. What was the Scientific Revolution, and how did it shape social inquiry?
2. Define ideology and distinguish between capitalism and socialism.
3. Explain cultural integration.
4. What is ecology in the context of society?
5. Define socialization of the individual.
6. Name two functions of education.

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

**(3x10=30)**

1. Define ideology and critically compare capitalism, socialism, and Islamic perspectives on social justice.
2. Explain how geography, demography, and ecology interact to produce patterns of environmental change.
3. Explain the functions and challenges of the education system in a rapidly changing society.



## THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

### SECTION—I (20 marks)

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

- 1 What guided the Israelites during their journey? اسرائیلیوں کی ان کے سفر کے دوران کس نے راہنمائی کی؟
- 2 What is the significance of the Passover? فصح کی کیا اہمیت ہے؟
- 3 What is the central theme of Psalm 16? زبور 16 کی مرکزی خیال کیا ہے؟
- 4 What is the Protoevangelium (Protoevangelion)? پروٹو ایوانجیلیون کیا ہے / سے کیا مراد ہے؟
- 5 Which term is used for first three gospels on the basis of their similarity? مماثلت کی بنیاد پر پہلی تین اناجیل کے لئے کوئی اصطلاح استعمال ہوتی ہے؟
- 6 What role did faith play in the Israelites' journey? بنی اسرائیل کے سفر میں ایمان کا کیا کردار تھا؟
- 7 What sound are produced by χ ξ ψ φ? χ ξ ψ φ سے کیا آوازیں پیدا ہوتی ہیں؟
- 8 What is gamma(γ)-nasal? گاما سے ادا ہونے والا گاما (γ) سے کیا مراد ہے؟
- 9 Which syllable is called ultima? کس سلیبل کو ایشیا کہتے ہیں؟
- 10 Which accent can be placed on last syllable? صرف آخری سلیبل پر کون سا لہجہ آتا ہے؟

### 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

- Q2 How did Jesus challenge the traditions of Judaism? یسوع نے کیسے یہودی روایات کو چیلنج کیا؟
- Q3 What role does the theme of forgiveness play in the Synoptic Gospels, and how does Jesus teach and demonstrate it? ہم آہنگ اناجیل میں معافی کا موضوع کیا کردار ادا کرتا ہے، اور خداوند یسوع اسے کیسے سکھاتے اور ظاہر کرتے ہیں؟
- Q4 Explain the following verse: Father, if thou be willing, remove this cup from me; nevertheless not my will, but thine, be done. Luke 22:42 دی گئی آیت کی تشریح کریں: اے باپ اگر تو چاہے تو یہ پیالہ مجھ سے ہٹا لے تو بھی میری مرضی نہیں بلکہ تیری مرضی پوری ہو۔ (لو 22:42)
- Q5 Explain the following verse: Why do the nations rage, And the peoples meditate a vain thing? <sup>2</sup>The kings of the earth set themselves, And the rulers take counsel together, Against Jehovah, and against his anointed, saying Let us break their bonds asunder, And cast away their cords from us. Psalm 2:1-2 دی گئی آیت کی تشریح کریں: اقوامیں کس لئے غیظ میں ہیں اور لوگ کیوں باطل خیال باندھتے ہیں؟ <sup>2</sup>خداوند اور اس کے مسیح کے خلاف زمین کے بادشاہ صف آرائی کر کے اور حاکم آپس میں مشورہ کر کے کہتے ہیں آؤ ہم ان کے بندھن توڑ ڈالیں اور ان کی ریشیاں اپنے آپ سے اُتار پھینکیں۔ زبور 2:1-3

### SECTION—III (10+10=20 Marks)

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

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

- Q6 Write appropriate articles before the given nouns:   
λογους, κορων, βιβλια, ανθρωπου, Ιησους. دیے گئے اسموں سے پہلے یونانی کے آرٹیکلز لکھیں۔
- Q7 Write all the endings/inflections of 2<sup>nd</sup> Declension Masculine Nouns in Koine Greek. کوئنے یونانی میں دوسری انکی گران مذکر اسماء کی تمام تصریفیں لکھیں۔
- Q8 Conjugate the verb λυω in Future Indicative Active. یونانی فعل λυω کی زمانہ مستقبل کی ساری گراؤں تحریر کریں۔
- Q9 Translate the following verses from Greek to English or Urdu:   
1. ἰδοὺ ἡ παρθένος ἐν γαστρὶ ἔξει καὶ τέξεται υἱόν, καὶ καλέσουσιν τὸ ὄνομα αὐτοῦ Ἑμμανουὴλ,   
2. καὶ φωνὴ ἐγένετο ἐκ τῶν οὐρανῶν. σὺ εἶ ὁ υἱός μου ὁ ἀγαπητός, ἐν σοὶ εὐδόκησα.   
3. φωνὴ βοῶντος ἐν τῇ ἐρήμῳ· ἐτοιμάσατε τὴν ὁδὸν κυρίου, εὐθείας ποιεῖτε τὰς τρίβους αὐτοῦ.





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

1. Discuss characteristics of an ABSTRACT DESIGN.
2. Discuss applications of Decorative Design in the field of Home Economics.
3. What is STRUCTURAL DESIGN?
4. What is CHARACTER in Design?
5. What does STRUCTURAL ELEMENTS in FURNITURE involve?
6. Explain NATURALISTIC DESIGN.

**Answer the following questions.**

**(3x10=30)**

1. How is DECORATIVE DESIGN classified?
  2. What are the requirements of a Good Structural Design
  3. Write a note on EGYPTIAN ART with any one example
-



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

- i. What are the different causes of poor fitting?
- ii. What are the basic elements of design that may limit a designer in any field of fashion?
- iii. Write about different types of sleeves.
- iv. Discuss different types of tools used in the patternmaking.
- v. Explain general Principles of Collar.
- vi. How fullness can be created in a garment.

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

**(3x10=30)**

- i. What problems can occur while handling Napped Fabric suggest solutions for them?
- ii. What to look for in deciding whether a garment fits well or not. Discuss in detail.
- iii. Explain with the help of illustrations any one method of pattern alteration.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(6x5=30)**

- 1 Define Human Growth and Development.
- 2 Define Defense Mechanisms.
- 3 What is Freud's Psychoanalytic Theory?
- 4 What is Erikson's Psychosocial Theory?
- 5 Define Nature vs Nurture in Human Growth and Development.
- 6 Define Human Behavior.

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

**(3x10=30)**

- 1 Describe how Psychology helps Social Workers in their practice.
- 2 Explain Erikson's theory of Psychosocial Development and its stages.
- 3 Differentiate between Neurosis and Psychosis with examples



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Research Methodology

Course Code: HIS-103N

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(5x6=30)**

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

i. Research Gap

i۔ ریسرچ گپ

ii. Hypothesis

ii۔ ہائپو تھیسز

iii. Historical context

iii۔ تاریخی پس منظر

iv. Term Paper

iv۔ ٹرم پیپر

v. Historiographical Context

v۔ تاریخ نگاری کا سیاق و سباق

**Answer the following questions**

**(2x15=30)**

درج ذیل سوالات کے جوابات تحریر کریں۔

**Q. No. 2. What do you know about the external criticism?**

سوال نمبر 2۔ آپ بیرونی تنقید کے بارے میں کیا جانتے ہیں؟

**Q. No. 3. What is the Importance of Auxiliary Sciences in History writing? Comment**

سوال نمبر 3۔ تاریخ لکھنے میں امدادی علوم کی کیا اہمیت ہے؟ تبصرہ کریں



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Ancient Civilizations (Early Life to 600 A.D)

Course Code: HIS-104N

Time: 3 Hrs. Marks: 60

## THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Write short note on the following.

(6x5=30)

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

1. Discuss the religious beliefs of the Indus Valley people.

وادی سندھ کے مذہبی عقائد پر تبصرہ کریں

2. Discuss Ashoka's religious policy.

اشوک کی مذہبی پالیسی پر تبصرہ کریں۔

3. What was the significance of Hammurabi's Code?

حمورابی کے قوانین کی اہمیت بیان کریں۔

4. What are the basic features of Egyptian civilization?

مصری تہذیب کی بنیادی خصوصیات بیان کریں۔

5. What were the teachings of Confucius?

کنفیوشس کی تعلیمات بیان کریں۔

6. What led to the rise of Hellenistic civilization?

ہیلینسٹک تہذیب کے ظہور کی وجوہات بیان کریں۔

Q.2. Answer the following questions

(3x10=30)

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

1. Explain the contributions of Mesopotamian civilization in law, writing, and astronomy.

میسوپوٹیمیا کی تہذیب کی قانون، تحریر اور فلکیات کے میدان میں خدمات بیان کریں۔

2. Discuss the causes behind the rise and fall of the Roman Empire.

رومی سلطنت کے عروج و زوال کی وجوہات پر تفصیل سے روشنی ڈالیں۔

3. Discuss the influence of ancient civilizations on modern society.

قدیم تہذیبوں کے جدید معاشرے پر اثرات پر تفصیل سے روشنی ڈالیں۔



# UNIVERSITY OF THE PUNJAB

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

Roll No. ....

Paper: Tarjuma-e-Quran

Course Code: HQ-002

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

سوال نمبر 1: مندرجہ ذیل آیات مبارکہ کا اردو/انگریزی میں ترجمہ کریں۔

1. قُلِ اللَّهُمَّ مَلِكُ الْمَلِكِ تُؤْتِي الْمَلِكَ مِنْ تَشَاءُ وَتَنْزِعُ الْمَلِكَ مِنْ تَشَاءُ وَتُعِزُّ مَنْ تَشَاءُ وَتُذِلُّ مَنْ تَشَاءُ-بِيَدِكَ الْخَيْرُ-إِنَّكَ عَلَى كُلِّ شَيْءٍ قَدِيرٌ ۝
2. قُلْ إِنْ كُنْتُمْ تُحِبُّونَ اللَّهَ فَاتَّبِعُونِي يُحْبِبْكُمُ اللَّهُ وَيَغْفِرْ لَكُمْ ذُنُوبَكُمْ-وَاللَّهُ غَفُورٌ رَحِيمٌ ۝
3. قَوْلِ الَّذِينَ يَكْتُمُونَ الْكِتَابَ بِأَيْدِيهِمْ-ثُمَّ يَقُولُونَ هَذَا مِنْ عِنْدِ اللَّهِ لِيَشْتَرُوا بِهِ ثَمَنًا قَلِيلًا-قَوْلِ لَهُمْ مِمَّا كَتَبْتُ أَيْدِيهِمْ وَوَيْلٌ لَهُمْ مِمَّا يَكْسِبُونَ ۝
4. وَإِذَا قِيلَ لَهُمْ آمِنُوا بِمَا أَنْزَلَ اللَّهُ قَالُوا نُوْمِنُ بِمَا أَنْزَلَ عَلَيْنَا وَيُكْفَرُونَ بِمَا وَرَاءَهُ وَهُوَ الْحَقُّ مُصَدِّقًا لِمَا مَعَهُمْ قُلْ قَلِيلٌ تَقْتُلُونَ أَنْبِيَاءَ اللَّهِ مِنْ قَبْلُ إِنْ كُنْتُمْ مُؤْمِنِينَ ۝
5. وَلَمَّا جَاءَهُمْ رَسُولٌ مِنْ عِنْدِ اللَّهِ مُصَدِّقٌ لِمَا مَعَهُمْ نَبَذَ فَرِيقٌ مِنَ الَّذِينَ أُوتُوا الْكِتَابَ-كِتَابَ اللَّهِ وَرَأَوْا ظُهُورِهِمْ كَانَهُمْ لَا يَعْلَمُونَ ۝
6. وَإِذْ قَالَ إِبْرَاهِيمُ رَبِّ اجْعَلْ هَذَا بَلَدًا آمِنًا وَارْزُقْ أَهْلَهُ مِنَ الثَّمَرَاتِ مَنْ آمَنَ مِنْهُمْ بِاللَّهِ وَالْيَوْمِ الْآخِرِ قَالَ وَمَنْ كَفَرَ فَأُمَتِّعُهُ قَلِيلًا ثُمَّ أَضْطَرُّهُ إِلَى عَذَابِ النَّارِ-وَبَلَسَ الْمَصِی ۝
7. فَتَقَبَّلَهَا رَبُّهَا بِقَبُولٍ حَسَنٍ وَأَنْبَتَهَا نَبَاتًا حَسَنًا-وَوَكَّلْنَاهَا زَكْرِيَّا-كَلَّمَآ دَخَلَ عَلَيْهَا زَكَرِيَّا الْمِحْرَابَ-وَوَجَدَ عِنْدَهَا رِزْقًا-قَالَ يَمْرُؤُا أَنَّى لَكَ هَذَا-قَالَتْ هُوَ مِنْ عِنْدِ اللَّهِ-إِنَّ اللَّهَ يَرْزُقُ مَنْ يَشَاءُ بِغَيْرِ حِسَابٍ ۝
8. رَبَّنَا إِنَّكَ جَامِعُ النَّاسِ لِيَوْمٍ لَا رَيْبَ فِيهِ-إِنَّ اللَّهَ لَا يُخْلِفُ الْمِيعَادَ ۝
9. شَهِدَ اللَّهُ أَنَّهُ لَا إِلَهَ إِلَّا هُوَ-وَالْمَلَكَةُ وَأُولُوا الْعِلْمِ قَابًا بِالْقِسْطِ-لَا إِلَهَ إِلَّا هُوَ الْعَزِيزُ الْحَكِيمُ ۝
10. رَبَّنَا آمَنَّا بِمَا أَنْزَلْتَ وَاتَّبَعْنَا الرَّسُولَ فَاكْتُبْنَا مَعَ الشَّاهِدِينَ ۝

Q.2. Use attached pronouns with "دين" and give their meanings. (1x10=10)

سوال نمبر 2: "دين" کے ساتھ ضمائر متصلہ لگائیں اور ان کے معانی لکھیں۔

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

سوال نمبر 3: مندرجہ ذیل قرآنی الفاظ کے اردو میں معانی لکھیں۔

(1) سبیل (2) صلاة (3) سمیع (4) علیم (5) یوم (6) لیل (7) نهار (8) خاسرین (9) ذلک (10) هم

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

سوال نمبر 4: مندرجہ ذیل الفاظ کی مدد سے واحد کی جمع لکھیں۔

مَوْتٌ - الَّذِي - صَالِحٌ - يَدٌ - رَسُولٌ - أَنَا - غَافِلٌ - شَيْطَانٌ - يُؤْمِنُ - يُفْسِدُ-





# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Information Services and Sources

Course Code: INF-206

Time: 3 Hrs. Marks: 60

**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Write short note on the following.**

**(5x6=30)**

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

i. Virtual reference services

i. ورجوئل حوالہ جاتی خدمت

ii. Reference Librarian

ii. حوالہ جاتی لائبریرین

iii. Bibliographies

iii. کتابیات

iv. Roving reference

iv. گھوم پھر کر حوالہ جاتی خدمت کی فراہمی

v. Styles of reference service

v. حوالہ جاتی خدمات کے سٹائلز

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

**(3x10=30)**

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

i. Describe the types of reference services in libraries.

i. لائبریریوں میں حوالہ جاتی خدمات کی اقسام بیان کریں۔

ii. What is the meaning of information sources and services and why are they important?

ii. معلومات کے ذرائع اور خدمات کا کیا مطلب ہے اور وہ کیوں اہم ہیں؟

iii. What do you know about future of reference service? Discuss.

iii. آپ ریفرنس سروس کے مستقبل کے بارے میں کیا جانتے ہیں؟ بحث کریں۔



## THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Answer the following short questions.

(15x2=30)

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

1. What things did Iranian people worship before the Islam?  
(1) قبل از اسلام ایرانی قوم کن چیزوں کی پرستش کرتی تھی؟
2. Describe the moral characteristics of pre-Islamic Arab. (Only titles)  
(2) قبل از اسلام عربوں کے اخلاقی اوصاف تحریر کیجیے۔ (صرف عنوانات)
3. Enlist the names of oldest idols of Arab.  
(3) عرب کے قدیم ترین بتوں کے نام بیان کیجیے۔
4. Narrate the four names of Wives of Holy Prophet (SAW).  
(4) چار ازواج مطہرات کے نام تحریر کیجیے۔
5. What is meant by Harb-ul-Fijar?  
(5) حرب الفجار سے کیا مراد ہے؟
6. After the first revelation, what were the words of Hazrat Khadija (RA) to encourage Holy Prophet (SAW)?  
(6) پہلی وحی کے نزول کے بعد حضرت خدیجہ نے نبی ﷺ کو قتل کن الفاظ میں دی؟
7. What is meant by the Year of Sorrow?  
(7) عام الحزن سے کیا مراد ہے؟
8. Narrate the two reasons for migration to Abyssinia?  
(8) ہجرت حبشہ کی دو وجوہات تحریر کیجیے۔
9. Describe two important points of Bait-e-Uqba Oala.  
(9) بیت عقبہ الاوی کے دو اہم نکات لکھیے۔
10. Who was the companion of Holy Prophet (SAW) in migration to Madinah? Also in which cave they took shelter?  
(10) ہجرت مدینہ میں نبی ﷺ کے ساتھی کون سے صحابی تھے؟ نیز انھوں نے کس غار میں پناہ لی؟
11. Write down the important points of preaching of Holy Prophet (SAW).  
(11) دعوت نبوی ﷺ کے اہم نکات لکھیے۔ (صرف عنوانات)
12. Which battle is called Yūm al-Fūrqān?  
(12) یوم الفرقان کس غزوہ کو کہا جاتا ہے؟
13. What is meant by Ghazawa? State the numbers of Ghazawat.  
(13) غزوہ سے کیا مراد ہے؟ غزوات کی تعداد بیان کیجیے۔
14. Describe the two salient features of economic system of the era of Holy Prophet (SAW).  
(14) عہد نبوی کے معاشی نظام کی دو خصوصیات تحریر کیجیے۔
15. Write down the two Urdu books with the names of authors on the topic of Seerat –un- Nabi (SAW).  
(15) سیرۃ النبی ﷺ پر دو اردو کتب کے نام مع مصنفین کے اسماء گرامی تحریر کیجیے۔

Q.2. Answer the following questions in detail.

(3x10=30)

سوال نمبر 2: درج ذیل سوالات کے تفصیلی جواب دیں۔

1: نبی ﷺ کے مکی حالات زندگی اجمالاً بیان کیجیے۔

1. Briefly describes the Meccan life of Holy Prophet (SAW).

2: پہلی اور دوسری ہجرت حبشہ کے واقعات تفصیلاً تحریر کیجیے۔

2. Describe the happenings of the first and second migration of Abyssinia in detail.

3: فتح مکہ کی وجوہات، واقعات اور نتائج پر تفصیلاً بحث کیجیے۔

3. Discuss the causes, events and consequences of conquer of Makkah in detail.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following questions.**

**(3x10=30)**

1. Give a brief description of the philosophical foundations of social work.
2. Describe professional and voluntary principles of social work.
3. Briefly describe Islamic perspective on social work.

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

**(2x15=30)**

1. Critically analyze contemporary challenges and opportunities in social work.
2. Give a detailed description of 'social case work' as method of social work.



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Management of Libraries and Information Centers

Course Code: MAN-205

Time: 3 Hrs. Marks: 60

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**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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**Q.1. Answer the following short questions.**

**(6x5=30)**

1. How to evaluate a new employee in libraries?
2. Difference between public and special libraries?
3. How to motivate information professionals?
4. Why is the effective management of public libraries important?
5. Describe the role of the interview during the hiring process.
6. Strategies to retain an employee.

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

**(2x15=30)**

1. What is management? Why functions of management in libraries and information centers important? 15
2. Discuss the historical paradigm of management. 15



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Solve the following questions.**

**(6x5=30)**

- 1) Find the standard equation of the circle with center at  $(1, -2)$  and passing through the point  $(7, 4)$ .
- 2) Find an equation of the normal line to the curve  $x = a\cos^4\theta, y = a\sin^4\theta$  at  $\theta = \frac{\pi}{4}$ .
- 3) Find cylindrical coordinates for the point with rectangular coordinates  $(2, 2\sqrt{3}, 8)$ .
- 4) Find the point on the  $y$ -axis equidistant from  $(2, 5, 3)$  and  $(3, 6, 1)$ .
- 5) Find rational and trigonometric parametric representations of the circle,  $x^2 + (y - 2)^2 = 25$ .
- 6) Identify and sketch the quadric surface,  $x^2 + y^2 + 4z^2 = 10$ .

**Solve the following questions.**

**(4x7.5=30)**

**Q2).** Find a vector parallel to the line of intersection of the planes  $3x - 6y - 2z = 15$  and  $2x + y - 2z = 5$ .

**Q3).** Let  $E$  be the eccentricity of the ellipse and semi-major axis is  $a$ , then its equation in polar coordinates is given  $r = \frac{a(1-E^2)}{1+E\cos\theta}$ .

**Q4) a)** Draw a graph of the function  $f(x) = \frac{x}{x^2-1}$  (3)

**b)** Find formula for the angle between any two space vectors using dot product. Also find the condition of perpendicularity. (4.5)

**Q5).** Find pedal equation of the curve,  $r = 8(1 - \cos\theta)$ .





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Solve the following questions.**

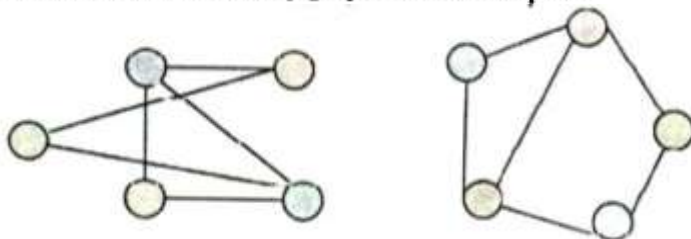
**(6x5=30)**

- Define regular graphs. Use handshaking lemma to find the size of these graphs
- Given the adjacency matrix of a graph,  $I = \begin{bmatrix} 0 & 1 & 0 & 1 \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 \\ 1 & 1 & 1 & 0 \end{bmatrix}$ . Determine the degree of each vertex, order of graph, size of graph using adjacency matrix? Also draw the corresponding graph and then write its incidence matrix.
- Define bipartite graph, wheel graph and k-cube with examples. Also prove that the length of a cycle in a bipartite is always even.
- For which values of  $n$  is the wheel  $W_n$  Eulerian and Hamiltonian. Explain the reason. Also compute the edge connectivity  $\lambda(W_6)$ , vertex connectivity  $\kappa(W_6)$ .
- If  $G$  is a simple graph with at least two vertices then prove that  $G$  must contain two or more vertices of the same degree.
- Write a note on chromatic number. Also prove that chromatic number of tree is 2.

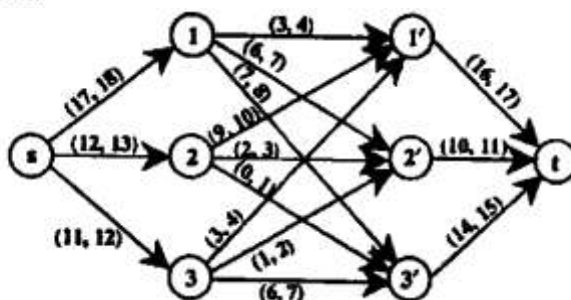
**Q.2. Solve the following questions.**

**(5x6=30)**

- Prove that a tree on  $n$  vertices has  $n-1$  edges.
- Determine all spanning trees of the graph  $G$  with vertex set  $V(G) = \{a, b, c, d, e\}$  and edge set  $E(G) = \{ad, ae, de, be, bc, ce\}$ . Moreover if edges are weighted as  $\{ad: 2, ae: 3, de: 5, be: 1, bc: 7, ce: 2\}$ , determine the minimal spanning tree.
- Let  $G$  be a planar drawing of a connected planar graph with  $n$  vertices,  $m$  edges and  $f$  faces. Then prove that  $n - m + f = 2$ . Also by using this, prove that  $K_5$  is non-planar
- Prove that the following graphs are isomorphic.



- Find the maximum flow from source vertex  $s$  to sink vertex  $t$  and minimum cut of the following capacitated network:





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Solve the following questions.**

**(6x5=30)**

- a) Discuss the logical equivalence of the two statements  $\neg(p \vee (p \wedge q))$  and  $\neg p \wedge \neg q$  by developing a series of logical equivalences.
- b) Prove that Set of positive rationals is countable.
- c) Find a formula for the sequence 0, 0, 0, 0, 1, 1, 1, 1, 2, 2, 2, 2, ...
- d) Let us assume that we have a hotel with an infinite many rooms, each occupied by a person. Is it possible to adjust 5 new guests keeping in mind that each room can accommodate a single guest and no old guest will be asked to leave. How?
- e) In how many different orders can five runners finish a race if no ties are allowed?
- f) What is Inclusion- Exclusion principle? Also find how many bits of string of length 8 start with a 1 bit and end with two bits 00 are possible?

**Solve the following questions.**

**(3x10=30)**

**Q2). Use Mathematical induction to prove that,**  
a)  $1 + 2 + 2^2 + \dots + 2^n = 2^{n+1} - 1$  (4)

b) Prove that  $\sqrt{3}$  is irrational (3.5)

**Q3) Each user on a computer has a password, which is six to eight characters long, where each character is an uppercase letter or a digit. Each password must contain at least one digit. How many passwords are possible. Also find the probability of choosing such password. (7.5)**

**Q4). What is Bayes Rule for Probability. Prove this rule. Explain it with two examples. (7.5)**

**Q5).a) Find a simple formula for  $a_n$  if the first six terms of the sequence are 1, 7, 25, 79, 241, 727, ... (4)**

b) Without using truth table, Show that  $(p \wedge q) \rightarrow (p \vee q)$  is a tautology (3.5).



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Islamic System of Education

Course Code: MCED-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)**

سوال نمبر 1: درج ذیل پر مختصر نوٹ تحریر کریں۔

i. Write the meaning and definitions of education.

i. تعلیم کے معنی و مفہوم اور تعریفات تحریر کریں۔

ii. Write a note on the sources of education in Islam.

ii. اسلام میں تعلیم کے مآخذ پر نوٹ لکھیں۔

iii. Write a note on the importance of examination in education system.

iii. نظام تعلیم میں امتحانات کی اہمیت پر نوٹ لکھیں۔

iv. Write Quranic verses on the importance of education.

iv. تعلیم کی اہمیت پر قرآنی آیات تحریر کریں۔

v. Write the features of the Islamic Curriculum.

v. اسلامی نصاب تعلیم کی خصوصیات مختصراً بیان کریں۔

vi. Write the characteristics of Teacher.

v. معلم کے اوصاف تحریر کریں۔

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

**(3x10=30)**

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

i. Write a note on the importance and necessity of women's education in the Islamic System of Education.

i. اسلامی نظام تعلیم میں خواتین کی تعلیم کی اہمیت و ضرورت پر نوٹ لکھیں۔

ii. Write the objectives of education in Islamic System of Education in detail.

ii. اسلامی نظام تعلیم میں مقاصد تعلیم تفصیلاً تحریر کریں۔

iii. Write the characteristics of Islamic Education System.

iii. اسلامی نظام تعلیم کی خصوصیات تحریر کریں۔



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- 1. Define System?**
- 2. What are essential competencies for sustainable development?**
- 3. Explain academic curriculum?**
- 4. What are forms of curriculum evaluation?**
- 5. What is interdisciplinary approach?**
- 6. What are techniques of evaluation?**

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

**(3x10=30)**

- 1. Discuss Eisner model of curriculum?**
- 2. What are types of curriculum, discuss?**
- 3. What is system design in curriculum?**



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Solve the following questions.**

**(6x5=30)**

(i)	Evaluate $\int \frac{x^4}{x^2-1} dx$
(ii)	Find the Derivative of the function $e^{\sqrt{x+1}}$
(iii)	The height $s$ of a rocket $t$ sec after its launching is given by $s(t) = -t^3 + 2t^2 + 3$ . Find the instantaneous velocity of the rocket at $t = 2$ sec
(iv)	Find $\lim_{x \rightarrow 2} \frac{x-2}{\sqrt{2+x}}$
(v)	What is the magnitude of the complex number $-1 - i\sqrt{3}$
(vi)	Evaluate the integral $\int_0^{2\pi} \sin 2x dx$

**Solve the following questions.**

**(3x10=30)**

<b>Q.2</b>	Find the total area between the region and x-axis $y = x^4 - 2x^3 + 2x, 0 \leq x \leq 2$
<b>Q.3</b>	. Evaluate the following integral (a) $y = \int_1^2 \frac{5 \ln x}{5x} dx$ (b) $y = \int_0^{\frac{\pi}{6}} \tan 2x dx$
<b>Q.4</b>	(i) Find the value of $n$ when $11P_n = 11.10.9$ (ii) If $x$ is so small that its square and higher powers can be neglected, show that $\frac{1-x}{\sqrt{1+x}} \approx 1 - \frac{3}{2}x$



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED****Q.1. Solve the following questions.****(5x6=30)**

1.	Find $f_x, f_y, f_z$ of the function $f(x, y, z) = 1 + xy^2 - 2z^2$ .
2.	Find the angle between $u = \hat{i} - 2\hat{j} - 2\hat{k}$ and $v = 6\hat{i} + 3\hat{j} + 2\hat{k}$ .
3.	Find the acute angle of intersection between two planes $2x - 4y + 4z = 6$ and $6x + 2y - 3z = 4$ .
4.	Find equation of paraboloid $z = x^2 + y^2$ in cylindrical and spherical coordinate systems.
5.	Find the curvature and radius of curvature for vector $r(t) = e^t\hat{i} + e^{-t}\hat{j} + t\hat{k}$ at $t = 0$ .

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

1.	Evaluate the integral and sketch the region of integration $\int_1^{\ln 8} \int_0^{\ln y} e^{x+y} dx dy$
2.	Find the local maxima, local minima and saddle points of the function $f(x, y) = 4xy - x^4 - y^4$ .
3.	Sketch the graph of the hyperbolic paraboloid $z = \frac{y^2}{4} - \frac{x^2}{9}$ .





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- a) Show that total mechanical energy in SHM is constant. Also calculate velocity  $v_x$  at the displacement  $x = 0, \pm A/2$ .
- b) Discuss vertical simple harmonic motion.
- c) What is a physical pendulum? Derive expressions for the period and angular frequency.
- d) Discuss and graphically express the mechanism behind the formation of Beats.
- e) What is dispersion of light? How rainbows form? Differentiate primary and secondary rainbows.
- f) Differentiate Fresnel (near-field) and Fraunhofer (far-field) diffractions. Also derive a mathematical condition and locate the dark fringes in a photograph of the Fraunhofer diffraction pattern of a single horizontal slit.

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

**(3x10=30)**

- a) Show that oscillations of molecules bound by the van der Waals interaction can be simple harmonic motion.
- b) Find the expression for intensity in two-source interference. Also derive a condition for maximum intensity
- c) (i) What is the role of interference in Holography? Also explain the method to record and view a Hologram.  
(ii) How do the circular apertures affect resolving power? Also describe the role of diffraction for image resolution.



### THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

**Q.1. Answer the following short questions.**

**(10x3=30)**

- I. Differentiate between sample and sampling.
- II. Define random sampling and non-random sampling
- III. Differentiate between statistic and statistics.
- IV. Define sample space when 3 coins are tossed.
- V. What is the probability of drawing a FACE card from a pack of cards?
- VI. How many permutations can be made from the word PAKISTAN?
- VII. Define mutually exclusive events also write addition law for mutually exclusive events.
- VIII. Differentiate between Null and alternative hypothesis with examples.
- IX. What is the probability of the sum of a two-dice roll equal to 4?
- X. Write formulas for mean and variance of discrete random variable.

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

**(3x10=30)**

- I. For the following are the final grades obtained by 12 students in Statistics(X) and Accounting(Y)

Statistics	74	93	55	41	23	92	64	40	71	33	30	71
Accounting	81	86	67	35	30	100	55	52	76	24	48	87

Find the equation of line of regression which will enables us to predict the grade in Accounting on the basis of grades in Statistics.

- II. A discrete random variable X has the following probability distribution

X	3	4	5	6	7	8	9
P(X)	0.04	0.10	0.26	0.31	0.22	0.05	K

- a. Find the value of K and then find the following probabilities
- b.  $P(5 \leq X \leq 9)$  c.  $P(3 \leq X \leq 6)$  d. Mean of the distribution

- III. Let X be a continuous random variable with PDF given by

$$f(x) = \begin{cases} x^2(2x + \frac{3}{2}) & 0 \leq x \leq 1 \\ 0 & \text{otherwise} \end{cases}$$

- a. Show that  $f(x)$  is a valid density.
- b. Find  $\text{Var}(X)$  and  $\text{S.D.}(X)$
- c. Find  $P(X < 0.5)$



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

i.	Let $A = \begin{bmatrix} 1 & 1 & -2 \\ 4 & 3 & 1 \\ 2 & -6 & 3 \end{bmatrix}$ , $B = \begin{bmatrix} 3 & 4 & -4 \\ 2 & 4 & 1 \\ 0 & 1 & 9 \end{bmatrix}$ . Calculate $A^2 - 3AB$ .
ii.	Show that $\begin{vmatrix} bc & ca & ab \\ 1/a & 1/b & 1/c \\ a^2 & b^2 & c^2 \end{vmatrix} = 0$ .
iii.	Let $u, v \in \mathbb{R}^2$ , $u = (x_1, x_2)$ , $v = (y_1, y_2)$ . Determine if $\langle u, v \rangle = 2x_1y_1 - 3x_1y_2 - x_2y_1 + y_2$ is an inner product on $\mathbb{R}^2$ .
iv.	Find an equation defining the subspace $W$ of $\mathbb{R}^3$ spanned by $v_1 = (1, -3, 2)$ , $v_2 = (-2, 1, 2)$ , $v_3 = (-3, -1, 6)$ .
v.	Determine whether the transformation $T: \mathbb{R}^2 \rightarrow \mathbb{R}^2$ defined by $T(x_1, x_2) = (x_1 + 1, x_2 + 2)$ is linear or nonlinear.
vi.	Find the inverse of the matrix $\begin{bmatrix} -4 & -3 & 7 \\ 2 & 0 & 9 \\ 1 & 4 & -5 \end{bmatrix}$ if exists.

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

**(3x10=30)**

i.	Show that $\{(1,1,1), (0,1,1), (0,0,1)\}$ is a basis of $\mathbb{R}^3$ . Use the Gram-Schmidt process to transform this basis into an orthonormal basis.
ii.	Find the optimal solution of the following linear programming problem using simplex method. Minimize $z = 3x_1 - 5x_2$ subject to $\begin{aligned} x_1 + x_2 &\leq 6 \\ 3x_1 + 2x_2 &\leq 5 \\ x_1, x_2 &\geq 0 \end{aligned}$
iii.	Find the eigenvalues and eigenvectors of the matrix $A = \begin{bmatrix} 3 & 1 & 1 \\ 2 & 4 & 2 \\ 1 & 1 & 3 \end{bmatrix}$ .



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

1. Briefly explain the evolution of tennis and its major rule changes.
2. Describe the correct grip and stance for a basic forehand stroke in tennis.
3. What are the primary roles of the Goal Shooter and Goal Attack in Netball?
4. List and describe three basic stick-handling techniques used in hockey.
5. Explain the significance of teamwork and positioning in Netball strategy.
6. Compare singles and doubles strategies in tennis with reference to court coverage.

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

**(3x10=30)**

1. Discuss the coaching approaches for teaching foundational skills in tennis, netball, and hockey, highlighting similarities and differences.
2. Analyze the importance of defensive strategies in netball and hockey, providing examples of how teams adapt to different opponents.
3. Design a week-long integrated practice schedule that incorporates drills and gameplay for tennis, netball, and hockey, focusing on skill transfer and physical conditioning.





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

1. Describe the principle of pace judgment and its importance in middle-distance races.
2. How does aerobic capacity impact performance in long-distance races?
3. What are the benefits of incorporating speed development drills into a middle-distance training program?
4. Explain the role of recovery techniques such as foam rolling and active rest in training cycles.
5. What tactics should a runner consider when racing in different weather or terrain conditions?
6. Highlight the differences in training focus between a 3000m and a 10,000m athlete.

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

**(3x10=30)**

1. Compare various endurance training methods for races over 5000m, citing the advantages and limitations of each.
2. Critically discuss the interplay between biomechanics and physiology in distance running performance.
3. Propose a comprehensive pre-competition plan for a middle-distance athlete, including tapering, mental prep, and race-day strategy.



# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: Rhetoric

Course Code: PER-103

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۔

نوٹ: تمام سوالات کے جواب لکھیے

- |    |   |
|----|---|
| 12 | (1) قصرو حصر کی تعریف کیجیے اور فارسی اشعار کی مثالوں سے وضاحت کیجیے          |
| 12 | (2) مساوات سے کیا مراد ہے؟ فارسی اشعار کی مثالوں سے وضاحت کیجیے               |
| 12 | (3) مجاز کی تعریف کیجیے۔ اس کی اقسام درج کیجیے اور مثالیں دیجیے               |
| 12 | (4) صنعت تضاد کی وضاحت کیجیے اور مثالیں لکھیے                                 |
| 12 | (5) صنعت حسن تعلیل کے بارے میں آپ کیا جانتے ہیں، وضاحت کیجیے اور مثالیں دیجیے |





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

نوٹ: تمام سوالات کے جواب لکھیے

15

سوال نمبر: (1) درج ذیل اشعار کا اردو ترجمہ اور تشریح کیجیے:

ہم نشین از نغمہ ام ناآشناست  
رسم و آئین فلک نادیدہ ام  
ہست ناآشفته سیمابم ہنوز

بسکہ عود فطرتم نادر نواست  
در جہان خورشید نوزائیدہ ام  
رم ندیدہ انجم از تابم ہنوز

15

سوال نمبر: (2) درج ذیل اشعار کا اردو ترجمہ اور تشریح کیجیے:

فاختہ شاہین شود از تپش زیر دام  
خیز چو سرو بلند ای بعمل نرم گام  
گیر ز مینای تاک بادہ آئینہ فام

زندگی سوز و ساز بہ ز سکون دوام  
ہیچ نیاید ز تو غیر سجود نیاز  
کوثر و تسنیم برد، از تو نشاط عمل

15

سوال نمبر: (3) درج ذیل اشعار کا اردو ترجمہ اور تشریح کیجیے:

فریاد! ز شیرینی و پرویزی افرنگ  
معمارِ حرم! باز بہ تعمیرِ جہان خیز  
از خوابِ گران خیز

فریاد! ز افرنگ و دلاویزی افرنگ  
عالمِ ہمہ ویرانہ ز چنگیزی افرنگ  
از خوابِ گران خوابِ گران خیز

10

سوال نمبر: (4) علامہ اقبال کے تصور خودی کی وضاحت کیجیے

5

سوال نمبر: (5) علامہ اقبال کی نظم "لیارہ" کا مرکزی خیال تحریر کیجیے



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**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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**Q.1. Answer the following short questions.**

**(6x5=30)**

- 1) Explain Plato's idea of Philosopher King/ ideal ruler.
- 2) How does Cicero define civic virtue, and why is it important for the survival of the republic?
- 3) John Lock's Idea of Representative Government
- 4) What is the connection between the Enlightenment and the development of constitutional government?
- 5) What is the role of the public sphere in Jürgen Habermas' theory of deliberative democracy?
- 6) How does globalization impact the functioning of democracy in both developed and developing countries?

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

**(3x10=30)**

- 1) In *Politics*, Aristotle outlines the concept of a mixed government. How does Aristotle combine elements of democracy and oligarchy in a polity, and what are the benefits of such a system?
  - 2) How did Enlightenment philosophy influence the American and French Revolutions and their democratic ideals?
  - 3) How do the rise of populism and anti-globalization movements pose challenges to the principles of liberal democracy?
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# UNIVERSITY OF THE PUNJAB

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

Roll No.

Paper: The Science of Politics: Statecraft and Institutional Framework

Course Code: PS-112N

Time: 3 Hrs. Marks: 60

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**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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**Q.1. Answer the following short questions.**

**(6x5=30)**

1. Write a note on Electoral Constituencies.
2. Explain the Islamic concept of State.
3. Differentiate between Interest Groups and Pressure Groups.
4. What is the role of Technocratic leadership in a political system?
5. Explain the functions of Executive.
6. What are the key tools of Diplomacy?

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

**(3x10=30)**

1. Describe Hobbes, John Locke and Rousseau's theory of Social Contract.
2. Explain in detail the merits and demerits of Bicameral Legislation.
3. Define Political Parties and what are their kinds and functions.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

1. What is cognition?
2. Briefly explain the binocular and monocular cues.
3. Define and explain social facilitation with an example.
4. Describe any two types of emotions.
5. What is the role of the endocrine system in behavior?
6. What are Gestalt principles in perception?

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

**(3x10=30)**

1. Explain the types of senses and their functions.
2. Discuss problem-solving and decision-making processes.
3. Explain physiological changes and theories related to emotions.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- I. Discuss Sommerfeld's modification to Bohr's atomic model.
- II. Derive formula of total energy of an electron in first orbit by using Bohr Theory.
- III. Define polarizability. Discuss different factors affecting polarizability.
- IV. Write postulates of VSPR theory.
- V. What are the hazards of soap industry.
- VI. Define 'ELECTRONEGATIVITY'. Discuss trends in periodic table.

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

**(3x10=30)**

1. Define and explain Modern periodic table in detail.
2. Discuss relative strength of acid and base based on pKa value.
3. Define Ligand. Explain its types with examples.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Solve the following questions.**

**(6x5=30)**

1. Find the angle between  $\vec{A} = 2\hat{i} + 2\hat{j} - \hat{k}$  and  $\vec{B} = 6\hat{i} - 3\hat{j} + 2\hat{k}$ .
2. If  $\vec{A} = x^2y\hat{i} - 2xz\hat{j} + 2yz\hat{k}$ , then find  $\nabla \times \vec{A}$ , where  $\nabla = \hat{i}\frac{\partial}{\partial x} + \hat{j}\frac{\partial}{\partial y} + \hat{k}\frac{\partial}{\partial z}$ .
3. If  $\mathbf{A}$  and  $\mathbf{B}$  are irrotational, prove that  $\mathbf{A} \times \mathbf{B}$  is solenoidal.
4. Show that the effect of a couple upon a rigid body is unaltered if it is replaced by any other couple of the same moment lying in the same plane.
5. Evaluate  $\nabla \cdot (\vec{A} \times \vec{r})$  if  $\nabla \times \vec{A} = \mathbf{0}$ .
6. Three forces act perpendicularly to the sides of a triangle at their middle points and are proportional to the sides. Prove that they are in equilibrium.

**Q.2. Solve the following questions.**

**(3x10=30)**

1. If  $\psi(x, y, z) = x^2y^4z$  and  $\vec{A} = xz\hat{i} - xy^2\hat{j} + yz^2\hat{k}$ , find  $\frac{\partial^2}{\partial x^2 \partial z}(\psi\vec{A})$  at the point  $(2, -1, 1)$ .
2. Six equal uniform rods  $\mathbf{AB}, \mathbf{BC}, \mathbf{CD}, \mathbf{DE}, \mathbf{EF}, \mathbf{FA}$  each of weight " $w$ " are freely jointed to form a regular hexagon. The rod  $\mathbf{AB}$  is fixed in horizontal position and the shape of the hexagon is maintained by a light rod joining  $C$  and  $F$ . Show that the thrust in this rod is  $\sqrt{3}w$ .
3. Prove that any system of forces in a plane is equivalent to three suitably chosen forces  $\mathbf{X}, \mathbf{Y}, \mathbf{Z}$  acting along the sides  $\overline{BC}, \overline{CA}, \overline{AB}$  of a given triangle in the plane. Prove that if the system is equivalent to a couple  $G$ , then  $\frac{X}{BC} = \frac{Y}{CA} = \frac{Z}{AB} = \frac{G}{2\Delta}$ .





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**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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**Q.1. Answer the following short questions.**

**(6x5=30)**

- i. Differentiate between acoelomate, pseudocoelomate, and coelomate body plans.
- ii. Describe the locomotion methods in protozoa.
- iii. State three key features of Phylum Mollusca and give examples.
- iv. Explain the significance of segmentation in annelids.
- v. Write a short note on the water vascular system of echinoderms.
- vi. List the differences between open and closed circulatory systems with examples.

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

**(3x10=30)**

- 1 Explain the evolutionary importance of the metameric body form using examples from Annelida and Arthropoda.
- 2 Describe the general characteristics of the Phylum Arthropoda and explain why it is considered the most successful animal phylum.
- 3 Discuss the diversity and classification of protozoans.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- 1) Identify the graph of the equation  $xy - 10 = 0$ .
- 2) Show that the lines  $L_1 : x = x_0 + at, y = y_0 + bt, z = z_0 + ct$  and  $L_2 : x = x_1 + At, y = y_1 + Bt, z = z_1 + Ct$  are perpendicular if and only if  $aA + bB + cC = 0$
- 3) Find cylindrical coordinates for the point with rectangular coordinates  $(2, 2\sqrt{3}, 8)$ .
- 4) Find the point on the  $y$ -axis equidistant from  $(2, 5, 3)$  and  $(3, 6, 1)$ .
- 5) Find rational and trigonometric parametric representations of the circle,  $4x^2 + 2y^2 = 20$ .
- 6) Identify and sketch the quadric surface,  $18x^2 - 2y^2 + 32z^2 = 288$ .

**Answer the following questions.**

**(4x7.5=30)**

- Q2). Find an equation of the plane containing the point  $P(1, 3, 1)$  and the line  $L : x = t, y = t, z = t + 2$ .
- Q3). Find polar form of a general conics. Find the conditions for parabola and hyperbola.
- Q4) a) Find the slope of  $r = 2 + \sin\theta$  when  $\theta = \frac{\pi}{6}$ . (3)
- b) Find an equation of the Ellipse in the standard form. (4.5)
- Q5). Find Formula for the angle between any two space vectors in terms of dot product. Also find the condition of perpendicularity.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

i) If  $T: \mathbb{R}^2 \rightarrow \mathbb{R}$  is a linear transformation such that  $T(1,1) = 3$  and  $T(0,1) = -2$  then find  $T(x_1, x_2)$ .

ii) Solve the system of linear equations

$$2x - y - z = 4, \quad 3x + 4y - 2z = 5, \quad 3x - 2y + 4z = 7$$

iii) Define adjoint of a matrix. Find adjoint of given matrix

$$\begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 1 \\ 3 & 1 & 2 \end{bmatrix}$$

iv) Prove that any finite dimensional vector space contains a basis.

v) Find eigen values and eigen vectors of matrix A where  $A = \begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

vi) Show that the vectors  $\{(1,2,3), (0,1,2), (0,0,1)\}$  spans  $\mathbb{R}^3$ .

**Answer the following questions**

**(3x10=30)**

**Q.2.** Find the eigenvalues and eigenvectors of the matrix  $A = \begin{bmatrix} 8 & -6 & 2 \\ -6 & 7 & -4 \\ 2 & -4 & 3 \end{bmatrix}$ .

**Q. 3.** Determine whether or not the set  $\{(2, 4, -3), (0, 1, 1), (0, 1, -1)\}$  of vectors is a basis for  $\mathbb{R}^3$ .

**Q. 4.** Show that the vectors  $(2, 1, 1), (3, 0, -3), (-1, 1, 2)$  and  $(4, 2, -2)$  are linearly dependent.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

1. Define social stratification and its main characteristics.
2. What are the different systems of stratification?
3. Explain the concept of poverty.
4. What is the function of religion in social life?
5. What is demographic change?
6. Briefly explain the concept of social movements.

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

**(3x10=30)**

1. Explain the concept of culture and discuss its impact on social organization and individual behavior.
2. Describe the functions and importance of the institution of family and education in society.
3. Describe the demographic and environmental aspects of social change.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

- (a) Differentiate between social thought and sociological theory.
- (b) Write a note on the Imam Ghazali's theory of social justice.
- (c) What are the major propositions of Indian social thought? Explain with examples.
- (d) Differentiate between structuralism and poststructuralism.
- (e) Write a short note on the theory of rise and fall by Ibn-e-Khaldun.

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

- Q2. What are the major pillars of Chinese social thought?
- Q3. Write a note on the theory of social morbidity by Shah Wali Ullah.
- Q4. Elaborate Abu Zar Ghafari's theory of wealth.





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(5x6=30)**

- i. Define
  - a) Independent event
  - b) Complementary event
  - c) Collectively exhaustive events
- ii. A card is drawn from an ordinary deck of 52 playing cards. Find the Probability that
  - a) Card is a jack of heart
  - b) Card is a ten or a spade
- iii. For continuous random variable
 
$$f(x) = \begin{cases} x^2/3 & -1 < x < 2 \\ 0 & \text{otherwise} \end{cases}$$
  - a) Verify that  $f(x)$  is a density function.
  - b) Find  $P(0 < x < 1)$ .
- iv. Suppose that A and B are mutually exclusive events for which  $P(A) = 0.3$  and  $P(B) = 0.5$ . What is the probability that
  - a) either A or B occurs
  - b) A occur but B does not
  - c) both A and B occur
- v. Determine the value c so that the following function can serve as a probability distribution of the discrete random variable X:

$$f(x) = c \binom{2}{x} \binom{3}{3-x} \text{ for } x = 0, 1, 2.$$

**Answer the following questions.**

- Q2a) In a certain assembly plant three machines, A, B & C make 30%, 45% and 25% respectively, of the products. It is known from the past experience that 2%, 3% and 2% of the products made by each machine, respectively are defective. If a product were chosen randomly and found to be defective. What is the probability that it was made by the machine C? (6+4)
- b) In a certain town, 40% of the eligible voters prefer candidate A, 10% prefer candidate B, and the remaining 50% have no preference. You randomly sample 10 eligible voters. What is the probability that 4 will prefer candidate A, 1 will prefer candidate B, and the remaining 5 will have no preference?
- Q3 Let  $X$  and  $Y$  be two discrete random variables with the following joint p.d. (10)

$Y \backslash X$	1	3	5	$g(x)$
2	0.10	0.20	0.10	0.40
4	0.15	0.30	0.15	0.60
$h(y)$	0.25	0.50	0.25	1

Find  $E(X)$ ,  $E(Y)$ ,  $E(XY)$ ,  $E(2X-3Y)$ .

- Q4.a) If  $X$  follows binomial distribution with  $n=20$  and  $p=0.45$ . Calculate (6)
- i)  $P(X = 10)$
  - ii)  $P(5 \leq X \leq 9)$
- b) Define the normal distribution and list its key properties. (4)





**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

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

- 1. Explain the significance of Front Office Department in hotel.**
- 2. List any four major classifications of hotels based on ownership.**
- 3. What are the key elements of effective communication in the front office?**
- 4. Mention two ways to handle a dissatisfied guest professionally.**
- 5. What is yield management?**
- 6. Differentiate between guaranteed and non-guaranteed reservations.**
- 7. Define rack rate and corporate rate.**
- 8. State Cost Rate Formula.**
- 9. List two common methods of guest payment at check-out.**
- 10. What is the role of upselling in front office operations?**

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

- 1. Discuss the evolution of the hotel industry and explain the major hotel categories with suitable examples.**
- 2. Describe the reservation process step-by-step and explain how technology has enhanced this process.**
- 3. Explain guest accounting procedures in detail and describe how various payment methods are processed during check-out.**



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(10x3=30)**

1. Which sector is most related to tourism?
2. Name two main types of tourism.
3. How does cultural tourism help local people?
4. Name key principles of eco-tourism.
5. Give features of community-based tourism.
6. What is community-based tourism?
7. Mention main goals of sustainable tourism.
8. Give one example of a sustainable tourism practice.
9. What is the concept of responsible tourism?
10. What is public-private partnership (PPP) in tourism?

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

**(3x10=30)**

1. Define tourism. Explain the different concepts of tourism with suitable examples.
2. What is cultural tourism? Describe its importance and how it helps preserve local culture.
3. Explain the concept of eco-tourism. How does eco-tourism benefit the environment and local communities?



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- I. Direct and online marketing in promotion?
- II. Market Targeting and Product Posting.
- III. Consumer Markets
- IV. Psychological pricing
- V. Packaging and labeling.
- VI. Product Development Stages.

**Answer the following questions.**

**Q.No.2:** Write a detailed note on the Pricing Products: Pricing Consideration and Approaches.

**Q.No.3:** Write a detailed note on the Distribution Channel and Logistics Management.

**Q.No.4:** Write a detailed note on the Consumer Buyer Behavior.



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- A. What are the general characteristics of Echinoderms?
- B. Name the main classes within Echinoderms.
- C. How are Enteropneusta characterized?
- D. Explain the function of the water vascular system in Echinoderms.
- E. Define Protochordates and name the two main subgroups.
- F. Define Hemichordates and name their two main classes.

**Answer the following questions.**

**(3x10=30)**

**Questions: 2.** Discuss the evolutionary history and classification of Echinoderms, highlighting their diversity and significance in marine ecosystems.

**Questions: 3.** Discuss the ecological roles of Protochordates in marine ecosystems.

**Questions: 4.** Evaluate the importance of Deuterostomes (Echinoderms, Protochordates, and Hemichordates) in understanding the evolutionary history of life on Earth. How do their unique features contribute to biodiversity in marine ecosystems?



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions.**

**(6x5=30)**

- i. Transverse and Longitudinal Section
- ii. Paper Chromatography
- iii. Normality and Molality
- iv. Dark field Microscopy
- v. Wet mount
- vi. Filtration

**Answer the following questions.**

**(3x10=30)**

**Q.2 Discuss phase contrast and confocal microscopy in detail. Support your answer with suitable sketches**

**Q.3 Write detail note on UV-Visible spectrophotometer.**

**Q.4 Give comprehensive note on Polymerase chain reaction.**