Subject: English-III (Communication Skills)
PAPER CODE: ENG-003

TIME ALLOWED: 2 hrs. & 30 mins.
MAX. MARKS: 50

Subjective

ATTEMPT THIS PAPER ON THE SEPARATE ANSWER SHEET PROVIDED

NOTE: ATTEPMT ALL QUESTION

Q.2. Attempt any FIVE of the following questions: (15)

1. What do purpose and audience mean for writers?
2. Describe the qualities of a good writing.
3. What are the qualities of a good oral presentation?
4. *Power Point Presentations can hinder rather than help communication.* Give your opinion about this statement.
5. Write a note on non-verbal communication.
6. Define communication. Write a short note on different modes of communication.

Q.3. Read the paragraph and answer the questions. (10)

The scientist is more interested in doing scientific work rather than defining it. He sometimes says that a piece of work or a book is unscientific, and what he usually means by the phrase is that it is inexact ;that it is badly arranged; that it jumps on the conclusion without sufficiently evidence, or that the authority has allowed his personal prejudices to influence his report. By scientific work, then, we mean that which is as exact as possible, orderly in arrangement, and based on sound and sufficient evidence. Moreover, it must have no object except to find out the truth.

A) Give a suitable title to the passage.
B) How does a "scientific" work differ from the "unscientific" one?
C) What is meant by the word "unscientific"?
D) Why are the scientists more interested in doing scientific work rather than defining it?

Q.4. Write a letter to the EDITOR of a NEWSPAPER on ONE of the following topics: (15)

1. Misuse of internet among students
2. Street crimes in your city

Q.5. Write THREE CONNECTED PARAGRAPHS on ONE of the following topics: (10)

1. Terrorism
2. An Ideal Student
3. Importance of English

UNIVERSITY OF THE PUNJAB

Roll No. ....

3rd Semester - 2018
Examination:- B.S.Ed. (Hons.) 4 Years Degree Program
(Session: 2016-2020)

Subject: English-III (Communication Skills)
PAPER CODE: ENG-003

TIME ALLOWED: 30 Mins.
MAX. MARKS: 10

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY
SECTION-A (MCQs) (1x10=10)

Objective

Encircle the best possible answer: (10)

Choose the word that is near most OPPOSITE in meaning to the capitalized words.

1) DISTEND
A) Deteriorate
B) Weaken
C) Constrict
D) Concentrate

2) SCOTCH
A) Renovate
B) Entrust
C) Unfasten
D) Encourage

3) ACUITY
A) Quality
B) Certainty
C) Plenitude
D) Stability

4) ANIMOSITY
A) Parody
B) Retardation
C) Sincerity
D) Refutation

5) CUPIDITY
A) Generosity
B) Love
C) Anxiety
D) Entertainment

Choose the word that is near most SIMILAR in meaning to the capitalized words.

1) FLAGRANT
E) Concede
F) Vivid
G) Glaring
H) Habit

2) LETHARGY
E) Uneducated
F) Passive
G) Immeasurable
H) Lassitude

3) DIMINISH
E) Lessen
F) Covetous
G) Seditious
H) Aim

4) CAPTION
E) Title
F) Conclusion
G) Withdraw
H) Frail

5) ABHORRENT
E) Practice
F) Celerity
G) Detestable
H) Allegiance

UNIVERSITY OF THE PUNJAB

3rd Semester - 2018

<u>Examination:- B.S.Ed. (Hons.) 4 Years Degree Program</u>
(Session: 2016-2020)

Roll No. ....

Subject: Critical Thinking & Reflective Practices
PAPER CODE: EDU-004

TIME ALLOWED: 2 hrs. & 30 mins.
MAX. MARKS: 50

ATTEMPT THIS PAPER ON THE SEPARATE ANSWER SHEET PROVIDED

نوٹ: تمام سوالات حل کریں۔

SECTION II

Answer the following questions. Please be brief and specific while answering to the following questions.

Maximum Marks: 20

Q.1. Enlist the types of Socratic questions given by R.W. Paul. (5)

آر۔ ڈبلیو پال کے دیئے گئے سقراط کے سوالات کے اقسام بیان کریں۔

Q.2. Differentiate between Venn diagram and concept mapping. How these techniques help in critical thinking? (5)

وین ڈایاگرام اور کنسیبٹ میپنگ کے درمیان فرق کریں۔ یہ ٹیکنیک کریٹیکل تھنکنگ میں کس طرح مددگار ہیں؟

Q.3. Differentiate between primary and secondary source of information. Give at least two examples of each. (5)

بنیادی اور ثانوی ذرائع معلومات کے درمیان فرق کریں۔ دونوں کی دو مثالیں دیں۔

Q.4. enlist five issues in becoming a reflective practitioner. (5)

ریفلیکٹو پریکٹیشنر بننے کے لیے پانچ مشاہدات بیان کریں۔

SECTION III

Be expressive and comprehensive in answering the following questions.

Maximum Marks: 30

Q.1. Define the term 'critical thinking'. What are the fundamentals of critical thinking? Highlight its importance with a major focus in teacher development. (10)

کریٹیکل تھنکنگ کی اصطلاح کی تعریف بیان کریں۔ اس کے بنیادی اصول کیا ہیں؟ نیز اس کی اہمیت استاد کی تشو ونما میں واضح کریں۔

Q.2. Reveal your understanding by the term 'reflection'. Explain the process of reflection in detail. (10)

اصطلاح 'ریفلیکشن' کے بارے میں اپنی فہم کا اظہار کریں۔ نیز اس کے عمل کو تفصیل بیان کریں۔

Q3. Write note on the following. (05, 05)

مندرجہ ذیل پر نوٹ لکھیں۔

i. Characteristics of academic texts

علمی ادب کی خصوصیات

ii. Significance of reflection for a teacher

استاد کے لیے 'ریفلیکشن' کی اہمیت

UNIVERSITY OF THE PUNJAB

Roll No. ....

3rd Semester - 2018
Examination:- B.S.Ed. (Hons.) 4 Years Degree Program
(Session: 2016-2020)

Subject: Critical Thinking & Reflective Practices

PAPER CODE: EDU-004

TIME ALLOWED: 30 Mins.

MAX. MARKS: 10

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY
SECTION-A   (MCQs)   (1x10=10)

Q.1. Encircle the letter against the best response.
Cutting and overwriting is not allowed.   Maximum Marks: 10

1) Critical thinking is basically:
   a. Cognitive activity
   b. Social interaction
   c. Technical skill
   d. Emotional behavior

2) Statement without any supporting evidence is called:
   a. Argument
   b. Assertion
   c. Position
   d. Conclusion

3) Critical thinking can best be considered as:
   a. Set of methods
   b. Personality trait
   c. Inherent Quality
   d. Type of intelligence

4) Critical thinking as a process involves all of the following EXCEPT:
   a. Identifying other people's positions
   b. Criticizing other people's opinions
   c. Weighing up opposing arguments
   d. Recognizing techniques.

5) Identify the Primary source of information
   a. Archival material
   b. Scholarly journal articles
   c. Interpretive newspapers
   d. Blog posts

6) Our education system does not support the critical thinking. The basic reason is:
   a. it does not provide latest curriculum
   b. it does not offer practice of critique
   c. it does not cater individual needs
   d. it does not support practical activities

7) A point of view, supported by reasoning is termed as:
   a. Argument
   b. Assertion
   c. Position
   d. Conclusion

8) The attitude to remain un-biased in order to get accurate information while in the process of critical thinking is termed as:
   a. Creativity
   b. Objectivity
   c. Skepticism
   d. Perseverance

9) Reasoning where true promises develop a true and valid conclusion is:
   a. Inductive reasoning
   b. Deductive reasoning
   c. Abductive reasoning
   d. Both a & c

10) Teacher is considered as researcher by:
   a. John Dewey
   b. Socrates
   c. Schon
   d. Stenhouse

Attempt this paper on the Separate Answer Sheet Provided

Note. All questions are compulsory. Draw diagrams where necessary.

SECTION B (MARKS 4X5=20)

Q.2. Give brief answer of the following questions.

i. State back cross with example.

ii. What is mutation? Give its uses.

iii. Throw light on sex linked inheritance.

iv. What do you know about Plastids.

v. Differentiate between Translation and transcription.

SECTION C (MARKS 10X3=30)

Q.3.- What are nucleic acids? Give their types and importance.　　　10

Q.4.- Describe the Mendel's Law of Independent Assortment with examples.　　10

Q.5.- Write brief notes on the following.　　　(5+5)

(a) Cell cycle

(b) Theory of Natural Selection

UNIVERSITY OF THE PUNJAB

Roll No. ....

3rd Semester - 2018
Examination:- B.S.Ed. (Hons.) 4 Years Degree Program
(Session: 2016-2020)

Subject: Botany- III (Cell Biology, Evolution & Genetics)
PAPER CODE: BOT-005

TIME ALLOWED: 30 Mins.
MAX. MARKS: 10

Attempt this Paper on this Question sheet only.
Attempt all the MCQ's. Change of answer is not allowed.

SECTION- A (Marks 1x10=10)

Q.1. Choose the best answer.

i. ATP is required for the transport of material by the process of
   (a) Diffusion (b) Imbibition (c) Active transpor (d) Osmosis

ii. RNA that reads message and transfer specific amino acid to the ribosome.
   (a) DNA (b) mRNA (c) rRNA (d) tRNA

iii. The L shaped chromosome with unequal arms.
   (a) Acrocentric (b) Metacentric (c) Submetacentric (d) Telocentric

iv. The exchange of parts between non-homologous chromosomes.
   (a) Duplication (b) Deletion (c) Inversion (d) Translocation

v. The chromosomes pull apart by further shortening and condensation of Chromatids.
   (a) Diakinesis (b) Diplotene (c) Pachyatene (d) Zygotene

vi. The phenomenon in which genes are present on the same chromosone.
   (a) Assortment (b) Linkage (c) Cross over (d) Segregation

vii. The genetic material of one bacterial cell is transformed into another cell by a third party.
   (a) Conjugation (b) Transcription (c) Transduction (d) Transformation

viii. The process of cleaning up the hazardous substances into non toxic compounds with the help of living organisms.
   (a) Biomarker (b) Bioenergy (c) Biotransformation (d) Bioremediation

ix. If the test cross gives all dominant characters, the parent is.-
   (a) Homozygous dominant (b) Homozygous recessive (c) Heterozygous (d) None

x. Theory of inheritance of acquired characters was proposed by
   (a) Darwin (b) Lamarck (c) Hardy (d) Wallace

UNIVERSITY OF THE PUNJAB

Subject: Physics-III (Electricity & Magnetism)
PAPER CODE: PHY-005

TIME ALLOWED: 2 hrs. & 30 mins.
MAX. MARKS: 50

ATTEMPT THIS PAPER ON THE SEPARATE ANSWER SHEET PROVIDED

Section–B (Marks 4×5 = 20)

Q.2 Give brief answers of the following questions.

a) Briefly explain the effect of dielectric on capacitance of a capacitor.

b) Give a comparison of electrostatic and magnetic fields.

c) Briefly describe para, dia and ferro magnetic materials.

d) Calculate the torque on current carrying coil.

e) What is difference between *emf* and potential difference?

Section–C (Marks 10×3 = 30)

Q.3 Give detailed answers of the following questions.

i. Calculate the magnetic force on a charge inside the external magnetic field.

ii. State and derive Biot-Savart law.

iii. What is a dielectric? Show that dielectric medium inserted between capacitor plates increases capacitance of the capacitor.

Subject: Physics-III (Electricity & Magnetism) **TIME ALLOWED: 30 Mins.**
PAPER CODE: PHY-005 **MAX. MARKS: 10**

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY

Section–A (Marks 1×10 = 10)

Q.1 Attempt all the MCQ's within 30 Minutes. Change of answer is not allowed.

I. The electric flux will be zero when E and A are ---------------------.

    a) perpendicular   b) parallel   c) antiparallel   d) a) and b)

II. Which of the following cannot be the units of electric intensity?

    a) N/C   b) V/m   c) J/C-m   d) J/C

III. If a charged particle is moving parallel to magnetic field with velocity 'V' then magnetic force acting one the particle will be ---------------------.

    a) qvB b) 0   c) qE d) maximum

IV. Electric field lines and equipotential surfaces are

    a) always orthogonal   b) always parallel   c) zero magnitude   d) none of above

V. If $C_1 = 8 \mu F$, $C_2 = 4 \mu F$, $C_3 = 7 \mu F$ are connected in parallel combination then resultant capacitance of the circuit will be ------------------- μF.

    a) 2.21   b) 3   c) 10.67   d) 19

VI. Separation between the electric lines of force give the ------------------- of the field.

    a) direction   b) position   c) a) and b)   d) strength

VII. An electromagnetic field satisfies

    a) Faraday's law   b) Ampere's law   c) Gauss's law   d) all of above

VIII. The SI unit of magnetic flux is

    a) coulomb   b) weber   c) newton-meter   d) none of above

IX. The direction of a magnetic field within a bar magnet is from --------------- to ---------------.

    a) North to South   b) Back to Front   c) Front to Back   d) South to North

X. Two parallel metal plates have charges q_1 and q_2. Is this an example of a capacitor?

    a) yes   b) only if $q_1 = -q_2$ c) only if q_1 and $-q_2$ are different   d) impossible

UNIVERSITY OF THE PUNJAB

Roll No. ....

3rd Semester - 2018
Examination:- B.S.Ed. (Hons.) 4 Years Degree Program
(Session: 2016-2020)

Subject: Chemistry-III (Organic Chemistry **TIME ALLOWED: 30 Mins.**
PAPER CODE: CHEM-005 **MAX. MARKS: 10**

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY
Objective Part -I
Q#1: Chose the correct answer of the following. Cutting and over writing is not allowed.
(1*10=10)

1. The test solution (a mixture of $AgNO_3$ and NH_3 in H_2O which forms the complex ion $Ag(NH_3)^{2+}$) reacts specifically with alkanals to form silver metal - which is deposited as a silver mirror around the inside of a test tube in which the reaction is contained is called as

a) Tollen's Test b) Fehling's test

c) Resonance test c) pH test

2. What is the total number of pi bonds found in the following compound?

$$H-C\equiv C-CH_2-NO_2$$

a) 1 b) 2

c) 3 c) 4

3. What is the IUPAC name for the following compound?

$$CH_3-C\equiv C-\overset{\overset{\displaystyle CH_3}{|}}{CH}-CH=CH_2$$

a) 4-vinyl-2-pentyne b) 4-methylhex-2-yn-5-ene
c) 3-methylhex-4-yn-1-ene d) 3 methylhex-1-en-4-yne

4. _____ is a special case of structural isomerism and can play an important role in non-canonical base pairing in DNA and especially RNA molecules.

a) Merotropy b) Tautomersim c) Desmotropism d) All of the above

5. The conversion of a **keto** form into **enol** form is known as _____

a) Enolisation b) keto-enol tautomerism c) Krypomerism d) Both a and b

6. Most readily sulphonated trend is present in

a) Benzene b) cholobenzene c) toluene d) nitrobenzene

7. _____ usually have much _____ boiling points than might be expected from their molecular weights.

a) Alkanes, higher b) Alkynes, lower c) Alkanones, lower d) Alkanols, higher

8. The most likely to undergo a **nucleophilic aromatic substitution** with hydroxide ion in normal conditions is

a) Benzene b) Chlorobenzene c) Benzoic acid d) p-Chlorotoluene

9. Alkyl halides that undergo SN2 reaction most rapidly is

a) CH3CH2-Br b) CH3CH2- Cl c) CH3CH2-I d) CH3CH2-F

10. The purpose of using $FeBr_3$ catalyst in an electrophilic aromatic substitution halogenations is

a) It serves as a radical initiator

b) It destabilizes the carbocation intermediate.

c) It acts as a Lewis acid to activate Br_2

d) It dose not make any difference

Subject: Chemistry-III (Organic Chemistry
PAPER CODE: CHEM-005

TIME ALLOWED: 2 hrs. & 30 mins.
MAX. MARKS: 50

ATTEMPT THIS PAPER ON THE SEPARATE ANSWER SHEET PROVIDED

SECTION B
Descriptive Part-II

Attempt this paper on separate Answer sheet provided

Q#2: Explain the short questions (5*4= 20)

1. Explain hybridization of methan?

2. Write down mechanism equation of addition reaction hydrocarbons ?

3. Differentiate between alkanes and akynes, give two examples of each?

4. Define geometric isomerism, give examples?

5. Enlist all important functional groups and also write down basic formula of each functional group?

SECTION C
Subjective Part-III

Q#3: Essay type Question (Long Questions) (3*10=30)

1. Explain in details the preparation and mechanism of alkenes from elimination reaction of alkyl halides and alcohol and give examples , also describe dehalogenation of vicinal dihalides with mechanism and examples?

2.

a) How would you distinguish between primary, secondary and tertiary alcohols?

b) Explain the effect of the following on the nucleophilic substitution reactions of alkyl halides.

    I. Nature of substrate
    II. Nature of leaving group
    III. Attacking nucleophile
    IV. Solvent

3.

a) Draw the different resonance hybrid forms of Naphthalene, explain why the electrophilic substitiution takes place at ∞ (alpha) position.

b) What happens when ?

    I. Naphthalene is treated with conc. H_2SO_4 at 65 oC
    II. Naphthalene is treated with oxygen in the presence of V_2O_5

UNIVERSITY OF THE PUNJAB

Roll No. ....

3rd Semester - 2018
Examination:- B.S.Ed. (Hons.) 4 Years Degree Program
(Session: 2016-2020)

Subject: A Course of Mathematics A-III (Liner Algebra)

PAPER CODE: MATH-005

TIME ALLOWED: 30 Mins.

MAX. MARKS: 10

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY

Section-I (1×10=10)

Q.1 Select an appropriate option A/B/C/D. Deleting/overwriting is not allowed.

I.   If A is any square matrix, then $rank(A) =$ – – – –

A) $rank(A^T)$ B)   Nullity A C)   Nullity (A^T) D)   None of them

II. A linear transformation $T : U \to V$ is one to one iff

A) $N(T) = \{1\}$ B) $N(T) = \phi$ C) $N(T) = \{0\}$ D) $N(T) = \{0,1\}$

III. If $A = \begin{bmatrix} 1 & -1 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$, then A is -------matrix

A) Periodic   B)   Nilpotent   C)   Involutory   D)   Idempotent

IV. If A is a square matrix with two proportional rows then $\det(A) =$ – – – – –

A) -1   B) 1   C) 0   D)   None of them

V.   If A and B are square matrices and if $\det(A) = \dfrac{1}{4}$ and $\det(B) = \dfrac{1}{2}$, then

$\det(AB) =$ – – – – – –

A) $\dfrac{1}{4}$ B) $\dfrac{1}{8}$ C) $\dfrac{1}{2}$ D) $\dfrac{3}{4}$

VI. If A is a 4×4 matrix for which $\det(A) = -2$, then $\det(A^{-1}) =$ – – – – –

A) –2   B) $\dfrac{-1}{2}$ C) 2   D) $\dfrac{1}{2}$

VII. Give that $u = (1,0,0,0)$, $u \perp v$ if

A) $v = (0,1,0,0)$ B) $v = (0,0,1,0)$ C) $v = (0,0,0,1)$ D)   All A, B, C

VIII. For an $n \times n$ matrix A whose rows from a linearly independent set of n vectors in R^n. Which of the following statement is true?

A) $rank(A) < n$ B) $\det(A) = 0$ C)   Both (A and B)   D) None of them

IX. Let $L : V \to W$ be a linear transformation and let $\dim V = \dim W$ and L is onto, which of the following statement is false?

A) L is one to one   B) L is bijection   C)   Both (A and B)   D) None of them

X.   Which of the following is subspace of R^3?

A) The set of all vectors of the form $(a,b,2)$

B) The set of all vectors of the form (a,b,c) where $c = a + b$

C) Both (A and B)   D) None of them

UNIVERSITY OF THE PUNJAB

3ʳᵈ Semester - 2018

Examination:- B.S.Ed. (Hons.) 4 Years Degree Program

(Session: 2016-2020)

Roll No. ....

Subject: A Course of Mathematics A-III (Liner Algebra)

PAPER CODE: MATH-005

TIME ALLOWED: 2 hrs. & 30 mins.

MAX. MARKS: 50

ATTEMPT THIS PAPER ON THE SEPARATE ANSWER SHEET PROVIDED

Section-II (4×5=20)

Q.2   Solve the following questions.

I.   Find all the real numbers λ of $A = \begin{bmatrix} 1 & 5 \\ 3 & -1 \end{bmatrix}$

II.   If $A = \begin{bmatrix} 1 & 1 & 4 & 1 \\ 0 & 1 & 2 & 1 \\ 0 & 0 & 0 & 1 \\ 1 & -1 & 0 & 0 \end{bmatrix}$ then find nullity of A.

III.   Let $V : R^3 \to R^2$ be a linear transformation for which we know that

$L (1, 0, 0) = (2, -1)$, $L (0, 1, 0) = (3, 1)$ and $L (0, 0, 1) = (-1, 2)$

Find $L (3, 4, 2)$

IV.   Check that the transformation from R^3 to R^2

$T(u_1, u_2, u_3) = (u_1 - u_2, u_1 - u_3)$ is linear.

V.   Consider the vectors $u = (1, 2, -1)$ and $v = (6, 4, 2)$ in R^3. Check whether $w = (9, 2, 7)$ is a linear combination of u and v

Section-III (10×3=30)

Q.3   **a.**   Solve by Cramer's Rule   (4+6)

$$-x_1 + 3x_2 + x_3 = 1$$
$$x_1 + 2x_2 - 3x_3 = -9$$
$$2x_1 + x_2 - 2x_3 = -3$$

   b.   Verify that $rank(A) = rank(A^T)$ if $A = \begin{bmatrix} 1 & 2 & 4 & 0 \\ -3 & 1 & 5 & 2 \\ -2 & 3 & 9 & 2 \end{bmatrix}$

Q.4   **a.**   Find a basis for the null space of the following matrix   (6+4)

$$A = \begin{bmatrix} 1 & 3 & -2 & 0 & 2 & 0 \\ 2 & 6 & -5 & -2 & 4 & -3 \\ 0 & 0 & 5 & 10 & 0 & 15 \\ 2 & 6 & 0 & 8 & 4 & 18 \end{bmatrix}$$

   b.   Determine whether the polynomials

$$p_1 = 1 - x, \quad p_2 = 5 + 3x - 2x^2, \quad p_3 = 1 + 3x - x^2$$

are linearly dependent or linearly independent in p_2.

Q.5   **a.**   Find the Eigen vectors of the following matrix   (6+4)

$$A = \begin{bmatrix} 1 & 0 & 0 \\ 1 & 2 & 0 \\ -3 & 5 & 2 \end{bmatrix}$$

   b.   Determine whether $v_1 = (1, 1, 2)$, $v_2 = (1, 0, 1)$, and $v_3 = (2, 1, 3)$ span the vector space R^3.

اس پرچے کو علیحدہ سے مہیا کی گئی جوابی کاپی پر حل کریں

حصہ دوم

[4x5=20]

مندرجہ ذیل میں سے چار سوالات کے مختصر جواب لکھیں۔ (چار سطروں میں)

Write down any four Questions (Four lines)

(i) **Define Ideology of Pakistan.**

(i) نظریہ پاکستان کی وضاحت کریں۔

(ii) **What were the objectives of Faraizi Movement.**

(ii) فرائضی تحریک کے مقاصد کیا تھے؟

(iii) **Write down the names of Four books written by Sir Syed.**

(iii) سرسید کی تحریر کردہ چار کتابوں کے نام لکھیں۔

(iv) **Write down the Four points of Objective resolution.**

(iv) قرارداد مقاصد کے چار نکات لکھیں۔

(v) **Define Foreign Policy.**

(v) خارجہ پالیسی کی وضاحت کریں۔

حصہ سوم

مندرجہ ذیل سوالات کے جواب لکھیں۔

Write down the answers of the following Questions.

Q1. Write down the Educational services of Sir Syed Ahmad Khan. [10]

سوال 1۔ سرسید احمد خان کی تعلیمی خدمات لکھیں۔

Q2. Write a note on Lahore Resolution. [10]

سوال 2۔ قرارداد لاہور پر نوٹ لکھیں۔

Q3. Write down the basic Principles of Foreign Policy of Pakistan. [10]

سوال 3۔ پاکستان کی خارجہ پالیسی کے بنیادی اصول لکھیں۔

UNIVERSITY OF THE PUNJAB

Roll No. ....

3rd Semester - 2018
Examination:- B.S.Ed. (Hons.) 4 Years Degree Program
(Session: 2016-2020)

Subject: Pakistan Studies
PAPER CODE: PST-001

TIME ALLOWED: 30 Mins.
MAX. MARKS: 10

اس سے کو اسی سوالیہ کاپی پر حل کریں

حصہ اول

درج ذیل میں سے درست جواب کا انتخاب کیجیے۔

(i) Hazrat Mujadid Alf Sani was born in .

(i) حضرت مجدد الف ثانی پیدا ہوئے۔

(a) 1564ء (b) 1565ء (c) 1640ء (d) 1664ء

(ii) Who called the pioneer of Two Nation Theory.

(a) Shah Wali ullah (b) Sir Syed Ahmad Khan
(c) Allama Iqbal (d) Quaid-e-Azam

(ii) دو قومی نظریہ کا بانی کون کہلاتا ہے۔
(الف) شاہ ولی اللہ (ب) سر سید احمد خان (ج) علامہ اقبال (د) قائد اعظم

(iii) Sir Syed Ahmad Khan established a schoool in Ghazi pur.

(iii) سر سید احمد خان نے غازی پور میں مدرسہ قائم کیا۔

(a) 1859ء (b) 1862ء (c) 1875ء (d) 1877ء

(iv) The writer of Khutabat-e-Ahmadia.

(a) Allama Iqbal (b) Sir Syed (c) Halli (d) Deputy Nazir Ahmed

(iv) خطبات احمدیہ تحریر کی۔
(الف) علامہ اقبال (ب) سر سید (ج) حالی (د) ڈپٹی نذیر احمد

(v) The First world war started.

(v) پہلی جنگ عظیم شروع ہوئی۔

(a) 1914ء (b) 1916ء (c) 1945ء (d) 1919ء

(vi) Indian National congress formed in

(vi) انڈین نیشنل کانگرس تشکیل دی گئی۔

(a) 1860ء (b) 1885ء (c) 1906ء (d) 1911ء

(vii) When was the Govt. of Muhammad Khan Junejo dissolved.

(vii) محمد خان جونیجو کی حکومت کب ختم کی گئی۔

(a) 1985ء (b) 1988ء (c) 1999ء (d) 1999ء

(viii) Who dissolved the Ist constitutional Assembly of Pakistan.

(a) Ghulam Muhammad (b) Quaid-e-Azam
(c) Liaqat Ali Khan (d) Zia ul Haq

(viii) پاکستان کی پہلی دستور ساز اسمبلی کس نے برخاست کی۔
(الف) غلام محمد (ب) قائد اعظم (ج) ضیاء الحق (د) لیاقت علی خان

(ix) Indus Basin Treaty was signed in

(ix) سندھ طاس کا معاہدہ طے پایا

(a) 1948ء (b) 1949ء (c) 1960ء (d) 1965ء

(x) Which mountain range is located betwen Pakistan and China.

(a) Shiwalak (b) Gawadar (c) Karakoram (d) Himalaya

(x) پاکستان اور چین کے درمیان کونسا پہاڑی سلسلہ ہے۔
(الف) شوالک (ب) ہمالیہ (ج) قراقرم (د) گوادر

UNIVERSITY OF THE PUNJAB

3rd Semester - 2018
Examination:- B.S.Ed. (Hons.) 4 Years Degree Program
(Session: 2016-2020)

Roll No. ....

Subject: Zoology-III (Animal Form & Function I: A Comparative Perspective)

PAPER CODE: ZOOL-005

TIME ALLOWED: 2 hrs. & 30 mins.
MAX. MARKS: 50

ATTEMPT THIS PAPER ON THE SEPARATE ANSWER SHEET PROVIDED

Section B

(Note: Attempt all questions, each question carries 4 marks)

Q2. Differentiate between artery and vein

Q3. What are the hormones of adenohypophysis in man? Explain.

Q4. What are the functions of mammalian skin?

Q5. Write short note on chemoreceptors in invertebrate.

Q6. Briefly explain types of respiratory pigments.

Section C

(Note: Attempt all questions, each question carries 10 marks)

Q7. Describe the structure of human eye and explain its working.

Q8. Give four assumptions of the Hardy Weinberg Theorem and explain factors that upset the gene frequency.

Q9. Discuss the mechanism of muscle contraction.

UNIVERSITY OF THE PUNJAB

Roll No. ....

3rd Semester - 2018
Examination:- B.S.Ed. (Hons.) 4 Years Degree Program
(Session: 2016-2020)

Subject: Zoology-III (Animal Form & Function I: A Comparative Perspective)

PAPER CODE: ZOOL-005

TIME ALLOWED: 30 Mins.

MAX. MARKS: 10

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY

Q1.Choose the most suitable answer.

(i)   In muscle contraction calcium ion binds with
a) Troponin   b) Tropomyosin   c) Actin   d) Myosin

(ii)   In arthropods the chemorecptors are usually on
a) Antennae   b) Mouthparts   c) Legs in the form of hollow hairs d) All of these

(iii)   Pellicle is present in
a) Amoeba   b) Plasmodium   c) Paramecium   d) Rotifera

(iv)   Reproductive migrations in fishes is stimulated by
a) Neuropeptide   b) Melatonin   c) Prolaction   d) Thyroxine'

(v)   Study of the genetic, neural and hormonal bases of animal behavior is called
a) Ethology   b) Comparative Physiology

c) Comparative psychology   d) Behavioral ecology

(vi) Fluid part of blood after removing corpuscles, fibrinogen and clotting factors is called

a) Plasma   b) serum   c) Lymph   d) None of These

(vii)   Which one of the following respiratory pigments is green color?
a) Hemoglobin   b) Hemocyanine   c) hemoerythrin   d) Chlorocruorin

(viii)   Vagus nerve is
a) Motor   b) Sensory   c) Mixed   d) None of These

(ix)   New species evolve by sudden and distinct heritable changes called mutations and not by natural selection idea was put forward by:
a) Herbert Spencer   b) Muller   c) De Vries   d) Wallace

(x)   The hormone acdysiotropin is secreted by
a) Corpora Cardiaca   b) Corpora allata   c) Prothoracic   d) Brain

UNIVERSITY OF THE PUNJAB

Subject: Mathematics B-III (Calculus-II)

PAPER CODE: MATH-006

TIME ALLOWED: 2 hrs. & 30 mins.

MAX. MARKS: 50

ATTEMPT THIS PAPER ON THE SEPARATE ANSWER SHEET PROVIDED

SECTION I

Q.2. Solve the following short questions. All questions carry EQUAL marks. (5×4=20)

i) If $u = \sin^{-1}(\frac{x^2+y^2}{x+y})$, show that $x.\frac{\partial u}{\partial x} + y.\frac{\partial u}{\partial y} = \tan u$

ii) The nth term of a sequence is $\sqrt{n}(\sqrt{n+1} - \sqrt{n})$. Determine whether the sequence converges or diverges. If converges then find the limit.

ii) Use ratio test to determine whether the series $\sum_1^\infty \frac{2^n}{n(n+2)}$ converges or diverges.

iii) Use limit comparison test to determine the convergence or divergence of the series $\sum_1^\infty \frac{\ln(n+1)}{n^2}$.

iv) Find the extrema (Minima or Maxima) of given function $f(x,y) = e^{-(x^2+y^2+2x)}$.

v) Use Cauchy's root test to determine the convergence or divergence of the series $\sum_1^\infty (1 + \frac{1}{\sqrt{n}})^{-n^{3/2}}$

SECTION II

Solve the following short questions. All questions carry EQUAL marks. (3×10=30)

Q.3. (a) Evaluate by using spherical coordinates $\iiint \frac{dx\,dy\,dz}{x^2 + y^2 + z^2}$ where S is the region above Z=(bounded by the cone $z=\sqrt{3x^2 + 3y^2}$ and the sphere $x^2 + y^2 + z^2 = 9$ and $x^2 + y^2 + z^2 = 25$

Q.4. Evaluate the integral $\int_0^2 \int_{y^2}^4 y\cos x^2 \, dx \, dy$

Q.5. Test whether the series $\sum_1^\infty (-1)^{n+1} \frac{3n^2-3n+5}{n^3+n^2+n+1}$ converges absolutely, converges conditionally or diverges?

UNIVERSITY OF THE PUNJAB

Roll No. ....

3ʳᵈ Semester - 2018
Examination:- B.S.Ed. (Hons.) 4 Years Degree Program
(Session: 2016-2020)

Subject: Mathematics B-III (Calculus-II)

PAPER CODE: MATH-006

TIME ALLOWED: 30 Mins.

MAX. MARKS: 10

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY

Q.1. Choose the correct answer and encircle it. Cutting and overwriting is not allowed. (10)

i) Which of the following is equal to $\sum_{k=1}^{5}(2k+1)$?

A. 2(1+2+3+4+5)+1   B. 3+11   C. 3+5+7+9+11   D. 4+6+8+10

ii) Find the first order partial derivative with respect to x of $f(x,y) = e^{3x} \text{Cosy}$

A. $f_x = 3e^{3x} \text{Cosy} + e^{3x} \text{Siny}$ B. $f_x = 3e^{3x} \text{Cosy} + e^{3x} \text{Cosy}$ C. $f_x = -e^{3x} \text{Siny}$ D. $f_x = 3e^{3x} \text{Cosy}$

iii) The function $f(x,y) = \frac{\sqrt{x}+\sqrt{y}}{x+y}$ is a homogeneous function with degree _____.

A. $\frac{1}{2}$ B. $-\frac{1}{2}$ C. 2   D. -2

iv) If U = f(x,y) is a homogeneous function of degree n then which of the following is known as the Euler's theorem.

A. $x.\frac{\partial U}{\partial y} + y.\frac{\partial U}{\partial x} = nU$ B. $\frac{\partial U}{\partial x}dx + \frac{\partial U}{\partial y}dy = nU$

C. $x.\frac{\partial U}{\partial x} + y.\frac{\partial U}{\partial y} = nU$ D. $\frac{\partial U}{\partial y}dx + \frac{\partial U}{\partial x}dy = nU$

v) Let U=f(x,y) then which of the following is correct for dU.

A. $dU = \frac{\partial U}{\partial y}dx + \frac{\partial U}{\partial x}dy$ B. $dU = \frac{\partial U}{\partial x}dx + \frac{\partial U}{\partial y}dy$

C. $dU = x.\frac{\partial U}{\partial y} + y.\frac{\partial U}{\partial x}$ D. $dU = x.\frac{\partial U}{\partial x} + y.\frac{\partial U}{\partial y}$

vi) A sequence $\{a_n\}$ is said to be non-decreasing, if _____ for all n.

A. $a_n \leq a_{n+1}$ B. $a_n \geq a_{n+1}$ C. $a_n > a_{n+1}$ D. $a_n < a_{n+1}$

vii) The infinite series $\sum_{1}^{\infty} \frac{1}{n^p}$ converges for_____.

A. $p \leq 1$ B. $p \geq 1$ C. $p < 1$ D. $p > 1$

viii) A geometric series converges if the ratio r is _____.

A. less than 1   B. greater than 1   C. less and equal to 1   D. greater and equal to 1

ix) Which of the following is an alternating series?

A. $\sum_{1}^{\infty}(1)^{n-1}a_n$ B. $\sum_{1}^{\infty}(-1)^{n-1}a_n$ C. $\sum_{1}^{\infty}(-1)^{2n}a_n$ D. $\sum_{1}^{\infty}(-1)^{2n-2}a_n$

x) Which of the following is the power series?

A. $\sum_{1}^{\infty}(-1)^{n-1}x_n$ B. $\sum_{1}^{\infty}c_n x_n$ C. $\sum_{1}^{\infty}c_n x^n$ D. $\sum_{1}^{\infty}c_n(-x_n)$