

CODE: 81

Booklet Serial No.

Signature Invigilator

Maulana Azad National Urdu University

Polytechnic

Entrance Test – May 2026

Question Paper cum Answer Script

Hall Ticket No.

OMR Serial No.

Time: 2hrs

Maximum Marks: 100

INSTRUCTIONS FOR CANDIDATES

1. Candidate should write their Hall Ticket number and OMR serial number on the space provided above. Candidate should not write their Name, Hall Ticket number and OMR Serial Number at any other place.
2. This booklet contains **(36)** pages. The Candidate should check the booklet before taking the Test. In case of any discrepancy, a new booklet may be provided by the Invigilator.
3. The question booklet contains 100 Multiple Choice Questions. For each question there are four options, (A), (B), (C), (D). The candidate is required to choose the correct answer and darken the circle with blue / black ballpoint pen in the OMR sheet against the corresponding answer.
4. The candidate will get one mark for each correct answer in the OMR sheet. If the candidate does not bubble the correct answer against the corresponding question number in the OMR sheet, they will not get marks.
5. If the candidate bubbles more than one circle in OMR Sheet for any question, marks shall not be awarded for the question.
6. There are no Negative marks.
7. At the end of Entrance Test, candidates are allowed to take their question booklet.

MATHEMATICS

1. It $x + y = 5$ and $Kx - y = 10$ are perpendicular then $K =$ _____
(A) 1 (B) -1
(C) 0 (D) -2
2. The slope of the line $\frac{x}{3} - \frac{y}{2} = 1$ is _____
(A) $\frac{3}{2}$ (B) $\frac{2}{3}$
(C) $-\frac{3}{2}$ (D) $-\frac{2}{3}$
3. $(1, -2)$ lie on _____
(A) $x - y - 1 = 0$ (B) $x + y + 1 = 0$
(C) $2x - 3y + 5 = 0$ (D) $x - 2y - 3 = 0$
4. $(-3, -4)$ lie in _____ Quadrant
(A) I (B) II (C) III (D) IV
5. If $(x > 0)$ and $(y < 0)$ then $(-x, y)$ lies in _____ Quadrant.
(A) III (B) I (C) II (D) IV
6. The Line $(x = 4)$ is
(A) Parallel to x -axis (B) Parallel to y -axis
(C) Passes through $(0,0)$ (D) Passes through $(3,4)$
7. Sum of roots of the equation $x^2 - 5x + 6 = 0$ is _____.
(A) 5 (B) -5 (C) 6 (D) -6

8. $2i, -2i$ are the roots of _____.
 (A) $x^2 + 1 = 0$ (B) $x^2 - 1 = 0$
 (C) $x^2 - 4 = 0$ (D) $x^2 + 4 = 0$
9. Roots of $x^2 - 6x + 9 = 0$ are
 (A) Real and Unequal (B) Real and Equal
 (C) Imaginary (D) Irrational
10. If the Product of root of $x^2 - x - b = 0$ is 1 then b = _____.
 (A) -1 (B) 1 (C) $\frac{1}{2}$ (D) 2
11. The common root of $x^2 - 6x + 8 = 0$ and $x^3 - 6x^2 + 5x + 12 = 0$ is
 (A) 3 (B) 2 (C) 1 (D) 4
12. If $2 + i\sqrt{3}$ is a root of $x^2 - px + q = 0$ then $(p, q) =$ _____.
 (A) (4, 7) (B) (4, -7)
 (C) (-4, 7) (D) (-4, -7)
13. If $\sqrt[n]{3} = 243$ the 5^{2n-8} is _____.
 (A) 5 (B) 125 (C) 625 (D) 25
14. $\sqrt[5]{32^{-1}} =$ _____.
 (A) 4 (B) $\frac{1}{2}$ (C) 2 (D) $\frac{1}{8}$
15. If $a^3 = 0.064$ then $a =$ _____.
 (A) 40 (B) 4 (C) 0.04 (D) 0.4

16. $\left(x^{2/3}\right)^a = x^2$ then $a =$ _____

(A) 3

(B) 9

(C) $\frac{1}{3}$

(D) 27

17. If $4^x = (2\sqrt{2})^8$ then $x + 2 =$ _____

(A) 9

(B) 8

(C) 7

(D) 6

18. If $3^{x-y} = 27$ and $8^{y+1} = 64^x$ $2^{2x-y} =$ _____

(A) 4

(B) $\frac{1}{2}$

(C) 2

(D) 8

19. 7,10,13..... are in A.P then n^{th} term is _____

(A) $3n - 2$ (B) $3n + 2$ (C) $3n + 1$ (D) $3n + 4$

20. $\sum n =$ _____

(A) $\frac{n^2 + n}{2}$ (B) $\left(\frac{n(n+1)}{2}\right)^2$ (C) $\frac{n^2(n+1)}{2}$ (D) $\frac{n(n+1)(2n+1)}{6}$

21. If $\frac{-2}{7}, x, \frac{16}{7}$ are in A.P. then $x =$

(A) -1

(B) 1

(C) 2

(D) 7

22. If $x = 1 + y + y^2 + \dots \infty$ then $y =$ _____

(A) $\frac{x}{x-1}$ (B) $\frac{x}{1-x}$ (C) $\frac{x-1}{x}$ (D) $\frac{1-x}{x}$

23. In a G.P 6^{th} term is 32 and 8^{th} term is 128 then common ratio (r) = _____

- (A) 2 (B) 4 (C) 8 (D) 16

24. The Product of 5 Geometric means between 2 and 8 is _____

- (A) 16 (B) 2^8 (C) 2^6 (D) 2^{10}

25. If $(3x + 1, 5y - 2) = (7, 8)$ then $(x, y) =$

- (A) (2, 3) (B) (3, 2) (C) (2, 2) (D) (4, 2)

26. If sum of four consecutive integers is 46, then the four integers are

- (A) 11, 12, 13, 14 (B) 10, 1, 12, 13
(C) 6, 7, 8, 9 (D) 20, 21, 22, 23

27. If $ax + 3y = 0$ and $(x, y) = (1, 1)$ then $a =$ _____

- (A) -2 (B) 1 (C) 0 (D) -3

28. The Side of an equilateral triangle of area $36\sqrt{3} \text{ cm}^2$ is _____

- (A) 12 cm (B) 14 cm
(C) 18 cm (D) 16 cm

29. If the radius of a circle is 4cm then area is _____

- (A) $8\pi \text{ cm}^2$ (B) $16\pi \text{ cm}^2$
(C) $2\pi \text{ cm}^2$ (D) $64\pi \text{ cm}^2$

30. If the side of the cube is 6cm then its volume is _____

- (A) 36 cm^3 (B) 108 cm^3
(C) 216 cm^3 (D) 81 cm^3

31. $\sin 15^\circ =$ _____

(A) $\frac{\sqrt{3}+1}{2\sqrt{2}}$

(B) $2 - \sqrt{3}$

(C) $2 + \sqrt{3}$

(D) $\frac{\sqrt{3}-1}{2\sqrt{2}}$

32. $\sin^2 45^\circ - \sin^2 15^\circ =$ _____

(A) $\frac{\sqrt{3}}{4}$

(B) 0

(C) $\frac{1}{\sqrt{2}}$

(D) $\frac{\sqrt{3}}{2}$

33. If $\tan 75^\circ = K + \sqrt{3}$ then $K =$ _____

(A) 4

(B) 3

(C) 1

(D) 2

34. $\sin 150^\circ \cos 120^\circ =$ _____

(A) $\frac{1}{4}$

(B) $-\frac{1}{4}$

(C) $\frac{\sqrt{3}}{2}$

(D) $\frac{3}{2}$

35. $\tan 1080^\circ =$ _____

(A) 1

(B) 0

(C) $\sqrt{3}$

(D) $\frac{1}{\sqrt{3}}$

36. If $x = \frac{\sqrt{2}+1}{\sqrt{2}-1}$, $y = \frac{\sqrt{2}-1}{\sqrt{2}+1}$ then $x + y =$ _____

(A) 4

(B) 5

(C) 6

(D) 7

37. If $x = \frac{1}{2 - \sqrt{3}}$ then $\left(x - \frac{1}{x}\right)^2 =$ _____

(A) 12

(B) 4

(C) 9

(D) 16

38. If $x = 7 + 4\sqrt{3}$, $y = 7 - 4\sqrt{3}$ then $\frac{1}{x^2} + \frac{1}{y^2} =$ _____

(A) 189

(B) 186

(C) 192

(D) 194

39. $10P_2 =$ _____

(A) 72

(B) 90

(C) 56

(D) 110

40. $9C_3 =$ _____

(A) 84

(B) 36

(C) 9

(D) 126

PHYSICS

41. An electric bulb is switched on for 10 minutes and a current of 0.5A flows through it. Calculate the amount of electric charge passing through the circuit.

(A) 300 C

(B) 30 C

(C) 3000 C

(D) 0.3 C

42. A charge of 2C is moved between two points having a potential difference of 12V. How much work is done?

(A) 240 J

(B) 24 J

(C) 2.4 J

(D) 2400 J

43. An electric bulb is connected to a 220 V supply and draws a current of 0.50A. Calculate the power of the bulb.
- (A) 1100 w (B) 11 w
(C) 110 w (D) 1.1 w
44. From which of the following materials can a lens not be made?
- (A) Water (B) Glass
(C) Plastic (D) Clay
45. All colors of light travel with the same speed in
- (A) Vacuum (B) Glass
(C) Water (D) All of these
46. The spectrum obtained from the light of an electric bulb is
- (A) Emission spectrum (B) Absorption spectrum
(C) Continuous spectrum (D) Line spectrum
47. When a light passes through a medium the refractive index (n) for wavelength (λ) varies as
- (A) $n \propto \frac{1}{\lambda}$ (B) $n \propto \lambda$
(C) $n \propto \frac{1}{\lambda^2}$ (D) $n \propto \lambda^2$
48. Electric current flowing through a wire is due to the result of
- (A) Due to resistance in the wire
(B) Only due to potential difference
(C) Due to option (A) and (B)
(D) None of the above
49. A screw gauge works on the principle of
- (A) Pascal's Law (B) Principle of moments
(C) Screw in a nut (D) Archimede's principle

50. A stone is dropped from the top of a building. If it reaches the ground in 1 second, find the height of the building ($g=10 \text{ m/s}^2$)
- (A) 50 m (B) 500 m
(C) 5000 m (D) 5 m
51. In a simple pendulum, the value of $\frac{l}{T^2}$ is 0.248 m/s^2 . Find the value of acceleration due to gravity g .
- (A) 9.79 m/s^2 (B) 98 m/s^2
(C) 0.98 m/s^2 (D) 980 m/s^2
52. The splitting of sunlight into different colors (VIBGYOR) are due to
- (A) Refraction (B) Reflection
(C) Dispersion (D) Diffraction
53. During Refraction, which of the following does not change?
- (A) Wavelength (B) Frequency
(C) Speed of light (D) Angle of deviation
54. A doctor has advised the use of a lens of power 2 dioptres (2D). What is its focal length?
- (A) 100 cm (B) 50 cm
(C) 5 cm (D) 0.5 cm
55. Inside a bar magnet, what is the direction of magnetic lines of force?
- (A) From north pole to south pole
(B) From south pole to north pole
(C) Perpendicular to the magnet
(D) Parallel to the magnet
56. When a body moves in a circular path on a horizontal plane, what is the work done by the centripetal force?
- (A) 30 J (B) 0 J
(C) 90 J (D) 45 J

57. The Red color of the sun at sunrise and sunset is due to which of the following phenomenon?
- (A) Deviation (B) Dispersion
(C) Scattering (D) None of these
58. With the increase in temperature of a gas the speed of sound..
- (A) Decreases (B) Increases
(C) Remains the same (D) Cannot say
59. To detect obstacles in their paths bats produce which type of wave?
- (A) Infrasonic waves (B) Ultrasonic waves
(C) Electromagnetic waves (D) Radio waves
60. Infrasonic sound waves have a frequency of:
- (A) 20 Hz to 20,000 Hz (B) < 20 Hz
(C) $> 20,000$ Hz (D) 20 Hz to 100000 Hz
61. Lenz's Law is based on
- (A) Conservation of momentum (B) Conservation of Energy
(C) Conservation of Force (D) None of these
62. In step up transformer
- (A) $N_s = N_p$ (B) $N_s < N_p$
(C) $N_s > N_p$ (D) None of these
63. Electromagnetic Induction is based on
- (A) Faraday's law (B) Lenz's law
(C) Right hand thumb rule (D) Fleming's Left hand rule
64. Temperature determines the direction of
- (A) Flow of heat (B) Flow of energy
(C) Flow of motion (D) None of these
65. Mass of electron is
- (A) 1.67×10^{-27} kg (B) 1.67×10^{-31} kg
(C) 1.67×10^{-25} kg (D) 9.11×10^{-31} kg

66. When a ray of light enters from denser medium to a rarer medium then
(A) Speed of light decreases (B) Speed of light increases
(C) Speed of light will be same (D) Wavelength decreases
67. Which of the following quantities remains constant in a uniform circular motion?
(A) Velocity (B) Speed
(C) Acceleration (D) Speed and Velocity
68. Kilowatt hour (Kwh) is the unit of which physical quantity?
(A) Power (B) Force
(C) Energy (D) None of these
69. The kinetic energy 'k' and momentum 'p' are related as
(A) $p = \sqrt{2k}$ (B) $p = \sqrt{2gk}$
(C) $k = \frac{p^2}{2m}$ (D) $k = \sqrt{2mp}$
70. Which of the following Apparatus is used to measure the electric current?
(A) Voltmeter (B) Ammeter
(C) Speedometer (D) Cell

CHEMISTRY

71. The electronic configuration of an element is 2, 8, 7. The element is most likely to:
(A) Lose one electron (B) Gain one electron
(C) Lose seven electrons (D) Remain chemically inert
72. If an element has atomic number 12, its valency is most likely:
(A) 1 (B) 2
(C) 3 (D) 6

73. Which pair represents isotopes?
(A) ^{12}C and ^{14}C (B) ^{23}Na and ^{24}Mg
(C) ^{35}Cl and ^{37}Ar (D) ^1H and ^2He
74. Which of the following helps to reduce air pollution?
(A) Cutting trees (B) Increasing factories
(C) Planting trees (D) Burning more fuel
75. The number of molecules present in 18 g of water is:
(A) 6.022×10^{23} (B) 3.011×10^{23}
(C) 1.204×10^{24} (D) 9.033×10^{23}
76. Which compound will have the highest boiling point due to strong ionic bonding?
(A) CO_2 (B) CH_4
(C) NaCl (D) NH_3
77. When magnesium reacts with hydrochloric acid, the gas produced is:
(A) Oxygen (B) Hydrogen
(C) Chlorine (D) Nitrogen
78. Which element has the highest electronegativity among the following?
(A) Fluorine (B) Oxygen
(C) Nitrogen (D) Chlorine
79. Which of the following reactions represents oxidation?
(A) Gain of electrons (B) Loss of electrons
(C) Gain of hydrogen (D) Loss of oxygen
80. The modern Periodic Table is based on which Scientist's Law?
(A) John Dalton (B) Dmitri Mendeleev
(C) Henry Moseley (D) Rutherford

81. Which property generally increases down a group in the periodic table?
- (A) Ionization energy (B) Atomic size
(C) Electronegativity (D) Reactivity of non-metals
82. The compound CH_3COOH belongs to which functional group?
- (A) Alcohol (B) Aldehyde
(C) Carboxylic acid (D) Ketone
83. Which type of reaction is:
 $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
- (A) Combination reaction (B) Decomposition reaction
(C) Displacement reaction (D) Neutralization reaction
84. One mole of any substance contains:
- (A) 6.022×10^{20} particles (B) 6.022×10^{21} particles
(C) 6.022×10^{23} particles (D) 6.022×10^{25} particles
85. Which of the following hydrocarbons belongs to the alkane series?
- (A) C_2H_2 (B) C_2H_4
(C) C_2H_6 (D) C_3H_4
86. Organic compounds are generally soluble in:
- (A) Water (B) Organic solvents
(C) Acids (D) Salts
87. What is the main function of the ozone layer?
- (A) To produce rain
(B) To protect Earth from harmful solar radiation
(C) To produce oxygen
(D) To cool the air
88. If a substance turns blue litmus red and reacts with metals to release hydrogen gas, the substance is most likely:
- (A) Base (B) Acid
(C) Salt (D) Neutral compound

89. Which metal is used in thermometer?
(A) Gallium (B) Sodium
(C) Mercury (D) Aluminium
90. The hybridization of carbon in methane (CH_4) is:
(A) sp (B) sp^2
(C) sp^3 (D) sp^3d
91. Which separation technique is used to obtain salt from sea water?
(A) Filtration (B) Evaporation
(C) Chromatography (D) Centrifugation
92. If the molecular mass of CO_2 is 44, the number of moles in 22 g CO_2 is:
(A) 0.25 (B) 0.5
(C) 1 (D) 2
93. Which element is placed in Group 18 of the periodic table?
(A) Sodium (B) Chlorine
(C) Neon (D) Calcium
94. Which type of bond exists in NaCl ?
(A) Covalent bond (B) Ionic bond
(C) Metallic bond (D) Hydrogen bond
95. The gas evolved when acid reacts with carbonate is:
(A) Hydrogen (B) Oxygen
(C) Carbon dioxide (D) Nitrogen
96. Which law states that mass is neither created nor destroyed in a chemical reaction?
(A) Dalton's law (B) Boyle's law
(C) Law of conservation of mass (D) Gay-Lussac's law

97. The main component of LPG is:
- (A) Methane (B) Propane and Butane
(C) Ethane (D) Acetylene
98. Which metal is most commonly used in electrical wires?
- (A) Iron (B) Copper
(C) Zinc (D) Lead
99. The ore of Aluminium commonly used for extraction is:
- (A) Hematite (B) Bauxite
(C) Magnetite (D) Galena
100. Which statement is correct about covalent compounds?
- (A) They have high melting points
(B) They conduct electricity in solid state
(C) They usually have low melting points
(D) They form ions in solution

Rough Work

Rough Work

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