

Pakistan Institute of Engineering and Applied Sciences

BS ADMISSION TEST (Sample) TIME ALLOWED: 1.5 hours = Ninety Minutes

Roll Number: _____ Question Book No: _____

Name: _____ Signature: _____
(Use BLOCK Letters)

Please make sure that:

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|--|--|
| • The question book given to you contains Eighty (80) questions in all. | |
| • There are 20 MCQs based questions each from Mathematics, Physics, Chemistry and General Aptitude. | |
| • You are provided with one page printed answer sheet | |

Please read the following instructions carefully before attempting the question paper.

1. Do not bend, roll or fold the printed answer sheet.
2. You must write your **Roll No., Name and put your signature** in the spaces provided on this page and also on the answer sheet.
3. **On the printed answer sheet, there are FOUR choices (i.e. A, B, C, and D) for each question. Fill the appropriate choice only with a fine tip black marker or ball point.** Erasing is not allowed. Do not overwrite or fill more than one choice for a single question.
4. There will be no negative marking.
5. Since your final merit is mainly dependent on your performance in the written test, therefore, you are strongly advised to attempt as many questions as you can.
6. You can do your rough work anywhere on the question paper. **Do not use the answer sheet for any rough work.**
7. Put your pens down as soon as you hear **STOP WRITING**, otherwise your paper may be cancelled.
8. After the test is over, place your printed answer sheet inside the question paper and return both the question paper and the answer sheet to the invigilator.
9. **Mobile phones are strictly prohibited in the Examination Hall. Anyone found with a mobile phone inside the examination hall, his/her paper will be cancelled.**
10. Use your own calculator only. Borrowing calculator is not allowed.
11. Anyone found using unfair means will be disqualified automatically.

SAMPLE TEST PAPERS

Q1.
$$\begin{vmatrix} 0 & 0 & 1 & 2 & 3 \\ 1 & 2 & 3 & 4 & 5 \\ 0 & 0 & 0 & 3 & 4 \\ 0 & 1 & 0 & 2 & 3 \\ 0 & 0 & 0 & 0 & 2 \end{vmatrix} =$$

- (A) -6 (B) -3 (C) 6 (D) 0

Q2. **Of the following subatomic particles, the particle which has the same charge as the positron is;**

- (A) Photon (C) Electron
(B) Alpha particle (D) Proton

Q3. **1 mole of hydrogen gas is reacted with 1 mole of iodine vapour. After t second, 0.8 mole of hydrogen remains. The number of moles of hydrogen iodide formed at t seconds is**

- (A) 0.2 (B) 0.4 (C) 0.8 (D) 1.6

Q4. **An accurate clock shows 8 o'clock in the morning. Through how many degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon?**

- (A) 144 degree (B) 168 degree (C) 150 degree (D) 180 degree

Q5. **If $y^3 + xy^2 - 2x = 0$ defines y implicitly as a function of x, then the value of $\frac{dy}{dx}$ at the point (4, -2) is**

- (A) $-\frac{1}{2}$ (B) $-\frac{1}{8}$ (C) $\frac{1}{4}$ (D) $\frac{1}{2}$

Q6. **A ball is projected vertically upward from the surface of the earth and reaches its maximum height in 4.0 seconds. The ball's initial speed, in meters per second is approximately**

- (A) 20 (B) 40 (C) 80 (D) 100

Q7. **If $\mathbf{a} + \mathbf{d} \neq \mathbf{0}$ and $\begin{pmatrix} a & b \\ c & d \end{pmatrix}^2 = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$, then ad is**

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

Q8. **I tend to support political candidates who favour progress and reform:**

- (A) Agreed (B) Disagree (C) Neutral (D) Strongly Agreed

Q9. **The conductivity in metallic wires depends on**

- (A) Free electrons only
(B) Positive ions only
(C) Negative ions only
(D) Positive ions, negative ions and electrons

- Q10. 1 mole of hydrogen gas is reacted with 1 mole of iodine vapour. After t second, 0.8 mole of hydrogen remains. The number of moles of hydrogen iodide formed at t seconds is
(A) 0.2 (B) 0.4 (C) 0.8 (D) 1.6
- Q11. Momentum is a quantity whose unit might be the
(A) foot-pound (C) erg
(B) newton (D) gram centimeter per second
- Q12. What is the y-intercept of the line tangent to the graph of $y = \frac{1}{x}$ at $(2, \frac{1}{2})$?
(A) $-\frac{1}{2}$ (B) 0 (C) $\frac{1}{2}$ (D) 1
- Q13. I rarely notice my emotional reactions and feelings
(A) Agreed (B) Disagree (C) Neutral (D) Strongly Agreed
- Q14. Liquid petrol does not ignite spontaneously when exposed to the air because
(A) The ΔH for the combustion of petrol is positive
(B) Reaction between petrol and oxygen requires a catalyst
(C) The reactants are in different physical states
(D) Not enough molecules possess sufficient energy to react
- Q15. Two rectangular tanks stand next to each other on a horizontal table. The area of the bottom of the first tank is 40 square centimeters; that of the second tank is 80 square centimeters. Both tanks are filled with water to the same height. The ratio of the liquid pressure on the bottom of the second tank to that of the bottom of the first tank is
(A) 1 (B) 2 (C) 4 (D) 16

Q 80.