Department of Electronics

M.Sc. Admission Test, Sample Paper

Form No.:_____ Name:_____

Reg. No.:_____ Father's Name:_____

Instructions

1. Write your name and Form number on the top of every page.
2. There are **25** questions. Attempt as many questions as you can.
3. All questions should be answered on the attached answer sheet.
4. There is negative marking.
   (a) Each correct answer carries **(+3)** marks.
   (b) Each wrong answer carries **(−1)** mark.
5. Use the back side for rough work.
6. Use of Calculator is **not** allowed.
7. Cheating in any form will lead to immediate disqualification.
8. Total time allowed for the test is **75 minutes**.
9. Qualifying marks are 40%.

Form No.:_____ Name:_____

1. A boy travelling in a train moving at a constant velocity on a straight track throws a ball vertically upwards. The ball comes down after three seconds. The ball will land
   (a) ahead of him.
   (b) in his hand.
   (c) behind him.
   (d) at an unpredictable position.

2. An aircraft travelling at twice the speed of sound in air is said to be travelling at Mach 2. A sound source is located at the bottom of a lake and it generates a burst of sound then the shock wave in lake will travel at
   (a) greater than the Mach number.
   (b) the Mach number.
   (c) less than the Mach number.
   (d) a Mach number that cannot be determined.

3. The equation $x^2 - 4y^2 - 4x + 8y = 0$ represents a
   (a) Hyperbola
   (b) Ellipse
   (c) Circle
   (d) Parabola

4. Which of the following matrices, does not have an inverse?
   (a) $\begin{pmatrix} 0 & -1 \\ 1 & -1 \end{pmatrix}$
   (b) $\begin{pmatrix} 5 & 10 \\ 2 & 4 \end{pmatrix}$
   (c) $\begin{pmatrix} 1 & -2 \\ 1 & 2 \end{pmatrix}$
   (d) $\begin{pmatrix} 2 & -3 \\ -2 & -3 \end{pmatrix}$

5. The integral $\int \frac{\sin(\ln(2x+2))}{x+1}\,dx =$
   (a) $\ln(\sin\frac{2}{x+1}) + C$
   (b) $-\cos(\ln(2x+2)) + C$
   (c) $\sin\frac{2}{x+1} + C$
   (d) $\cos\frac{2}{x+1} + C$