

IMSc. IT (GDD) Sem.-6 Examination

BSCGDD - 33

Physics for Game

May-2025

[Max. Marks : 35]

Time : 1-00 Hour]

Instructions:

- **Figures to the right indicate Full Marks.**
- **Do not write anything on the question paper.**
- **Basic calculator is allowed.**

Marks

Q.1 Choose correct answer from the given options. (Each carries 1 [10] Mark)

1. Which physical quantity is the rate of change of velocity?

(a) Speed (b) Acceleration (c) Momentum (d) Velocity

2. Pressure is defined as force per unit ____?

(a) Volume (b) Mass (c) Length (d) Area

3. An object moves with a velocity of 50 m/s for 10 seconds. How far does it travel?

(a) 5 m (b) 500 m (c) 50 m (d) 150 m

4. Which of the following is not a vector quantity?

(a) Temperature (b) Velocity (c) Displacement (d) Acceleration

5. What is the Boolean expression for an AND gate?

(a) $A+B$ (b) $A \cdot B$ (c) $A \oplus B$ (d) None

6. The value of gravitational acceleration on earth is approximately ____

(a) 5 m/s^2 (b) 9.8 m/s^2 (c) 10 m/s^2 (d) 12 m/s^2

7. A body in motion under the influence of a force is called ____

(a) Rigid body (b) Kinetic body (c) Static body (d) None

8. Kinetic energy = ____

(a) mgh (b) mv (c) $\frac{1}{2} mv^2$ (d) ma

9. Stress is defined as ____

(a) Force per unit area (b) Change in length

(c) Length divided by force (d) Mass divided by volume

10. Which joint is flexible joint?

(a) Hinge (b) Fixed (c) Character (d) Spring

(P.T.O)

Q.2 Write the answer of the following questions. (Each carries 2 [10] marks)

1. A ball drops from a height and takes 4 seconds to hit the ground. What is its final velocity? (Take $g = 10 \text{ m/s}^2$)
2. An object moves from rest with a constant acceleration of 9 m/s^2 . Find the distance covered in 10 seconds.
3. Speed of car is 15 m/s . How much distance (in km) will the car travel in 1 hr?
4. If a fidget spinner completes 10 rotations in 5 seconds. Find the angular velocity in radian/second.
5. Give the name of the types of collision detection.

Q.3 Write the answer of the following questions. (Each carries 3 [15] marks)

1. A ball of mass 5 kg is 4 m above the ground and moving at 10 m/s . find the mechanical energy of ball.
 2. What is the reflection and refraction? Give their laws.
 3. Explain the AND gate and NOT gate (symbol, Boolean expression, truth table).
 4. What is the Stress and Strain? Define the longitudinal stress and strain.
 5. Explain the types of Joints with example.
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