

AAFAQ ACADEMY – KASUR

Paper: Physics

Chapter (3)

Class: F.Sc. Part – I

MOTION AND FORCE

Name: _____ Roll No: (in words) _____

OBJECTIVE TYPE

Total Marks: 12

Paper Code: _____

Total Time: 10 Minutes

NOTE: Write your **Roll No.** in space provided. Using lead pencil will result in loss of marks.

Q.No.1: You have four choices for each objective type question as A,B,C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

Sr. No.	QUESTION	A	B	C	D
1.	The area between velocity time graph and the time axis numerically equal	Speed of object	Distance covered the object	Average velocity of the object	Acceleration of object
2.	Horizontal range of projectile is related with maximum range according to relation	$R = R_{\max} \sin 2\theta$	$R_{\max} = R \sin 2\theta$	$R_{\max} = \frac{\sin 2\theta}{R}$	$R = R \sin \theta$
3.	Laws of motion are not valid in a system which is	Moving with uniform velocity	At rest	Non-inertial	Inertial
4.	The horizontal range of projectile at 30° with horizontal is same at an angle	40°	45°	60°	90°
5.	The S.I unit of impulse is	Kg msec ⁻¹	N-Sec	Newton	Kg m sec ⁻¹
6.	The velocity time graph is parallel to time axis the acceleration of moving body is	Positive	Negative	Maximum	Zero
7.	The rate of change of momentum is equal to	Force	Impulse	Momentum	Acceleration
8.	The distance covered by a freely falling body is 2 sec. will be.	4.9 m	19.6 m	9.8 m	39.2 m
9.	A ball is allowed to fall freely from certain height. It covers a distance in first second equal to	2 g	G	g/2	None of these
10.	The velocity of freely falling body just before hitting the ground is 9.8 ms^{-1} . The height through which it falls is	9.8 m	4.9 m	19.6 m	None of these
11.					

SUBJECTIVE TYPE

Total Marks: 29

Time Allowed: 0 Hours 50 Minutes

SECTION – I (SHORT QUESTIONS)

2. Attempt any FIVE questions. (5 × 2 = 10) Marks

- i. Define closed and an isolated system?
- ii. Describe the two uses of Ballistic missiles.
- iii. Find the Dimensional formulas for (i) impulse (ii) momentum
- iv. Find the range of the projectile.
- v. At what point or points in its path does a projectile have its minimum speed, its maximum speed?
- vi. Explain the difference between Elastic and inelastic collision.
- vii. Can the velocity of an object reverse the direction? Ehen acceleration is constant? If so give an example.
- viii. Show graphically how does the displacement and velocity of a vertically thrown ball vary with time.

SECTION – II (ESSAY TYPE) Attempt given question

3. Do as directed...

- i. Define projectile motion. Find expression for iostaneous velocity. (5)
- ii. A helicopter is ascending vertically at the rate of 19.6 ms^{-1} . When it is at a height of 156.8 m above the ground, a stone is dropped. How long does the stone take to reach the ground? (3)