

Student Roll No

0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

Example Roll No

3	4	7	2	6
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

ہال میں موبائل فون لانا تاہم ممنوع ہے

Paper Code: 71

MRD-XI-17 (A)
PHYSICS – (Part-I)
(Fresh / New Course)

Total Time: 3hrs

Total Marks:85



PH11C

FILL ROLL NO. COLUMN WISE FROM LEFT TO RIGHT ACCORDING TO EXAMPLE SHOWN ABOVE.

Time: 20min

"SECTION - A"

Marks: 18

NOTE: Use Black/Blue marker for shading only one bubble for each question. No mark will be awarded for Cutting, erasing, overwriting, and multiple bubble shading.

Q. 1 Choose the correct option i.e. A, B, C, and D.

- A projectile travels the same range for the pair of angles
 (A) $(30^\circ, 70^\circ)$ (B) $(63^\circ, 27^\circ)$ (C) $(5^\circ, 86^\circ)$ (D) $(45^\circ, 55^\circ)$
- Area under velocity-time graph is called
 (A) Distance (B) Acceleration (C) Velocity (D) Momentum
- The power of T.V set is
 (A) 100W (B) 120W (C) 110W (D) 12W
- Two bodies of masses m_1 and m_2 have equal momentum, their kinetic energies E_1 and E_2 are in the ratio
 (A) $\sqrt{m_1} : \sqrt{m_2}$ (B) $m_1 : m_2$ (C) $m_2 : m_1$ (D) $\sqrt{m_1^2} : \sqrt{m_2^2}$
- The critical velocity of an artificial satellite is
 (A) 8 km/h (B) 8 km/min (C) 8 km/s (D) 8 m/s
- Linear acceleration $a = r\alpha$ when θ is
 (A) 0° (B) 90° (C) 360° (D) 180°
- The drag force increases as the speed of the object
 (A) Decreases (B) Become constant (C) Become zero (D) Increases
- What is the time period of second pendulum?
 (A) 1 sec (B) 2 sec (C) 3 sec (D) 4 sec
- In an isolated system, the total energy of vibrating mass spring is
 (A) Constant (B) Variable (C) Low (D) High
- Waves carries
 (A) Momentum (B) Velocity (C) Mass (D) Energy
- Speed of sound does not depends on
 (A) Temperature (B) Humidity (C) Pressure (D) Density
- The intensity of light can be controlled by using
 (A) Polaroid's (B) Glasses (C) Lenses (D) Mirrors
- The principle of Young double slits experiment is based on the division of
 (A) Amplitude (B) Wavelength (C) Frequency (D) Velocity
- If temperature of the heat source is increased, the efficiency of a Carnot's engine
 (A) Increases (B) Decreases (C) Remains constant (D) First increases and then become constant
- The percentage error in the measurement of mass and speed are 5% and 6% respectively. The maximum error in the measurement of Kinetic energy is
 (A) 30% (B) 15% (C) 17% (D) 90%
- The dimensionless quantity is
 (A) Force (B) Viscosity (C) Stress (D) Strain
- What is the minimum number of unequal vector to result a null vector?
 (A) 2 (B) 3 (C) 4 (D) 1
- The angle for which $|\vec{A} - \vec{B}| = |\vec{A} + \vec{B}|$ is correct is
 (A) 90° (B) 60° (C) 30° (D) 45°

MRD-XI-17(A)
PHYSICS - (Part-I)
(Fresh / New Course)

P-308

Time Allowed: 2:40 Hrs

Section – B & C

Total Marks: 67

“Section – B”

Marks: 40

Q. 2 Write short answer of any TEN of the following parts. Each part carries equal marks.

- (i) Deduce the dimension of gravitational constant.
- (ii) Define vector product and give two examples.
- (iii) An object is traveling with a constant acceleration of $10m/s^2$. How much distance will it travel in 2nd second of its journey?
- (iv) Does the tension in the string of a swinging pendulum do any work? Explain.
- (v) Why does the coasting rotating system slow down as water drops into the beaker?
- (vi) Why do many trailer trucks use wind deflectors on the top of their cabs? How do such devices reduce fuel consumption?
- (vii) A singer, holding a note of right frequency, can shatter a glass. Explain.
- (viii) What is the difference between progressive and stationary waves?
- (ix) What is diffraction grating?
- (x) A soap bubble looks black when it bursts, why?
- (xi) What are the conditions for a process to be reversible?
- (xii) Define power and show that $P = \vec{F} \cdot \vec{V}$
- (xiii) A spherical body is dropped in two different fluids and its terminal velocity is found to be different. Give reasons.

“Section – C”

Marks: 27

NOTE: Attempt any three questions. Each question carries equal marks.

- Q. 3: a) What is meant by Carnot engine and Carnot cycle? Explain in detail. (5)
b) Calculate the change in entropy when 30g of water at 0°C as it is changed into ice at 0°C? (latent heat of fusion of ice = 336000J/kg) (4)
- Q. 4: a) Show that the speed of sound does not depend on pressure. (5)
b) A mass at the end of spring describes S.H.M with T=0.40sec. Find out \vec{a} when the displacement is 0.04m? (4)
- Q. 5: a) Define projectile motion? Derive expression for the time of flight of the projectile. (5)
b) The resultant of two vectors, one is double in magnitude than the other, is perpendicular to the smaller force. What is the angle between the two forces? (4)
- Q. 6: a) Show that a satellite near the earth will have greater velocity. (5)
b) The orbit of an electron moving around the nucleus of an atom is considered to be circular of radius 50pm and the period of motion is 0.15fs. Calculate the centripetal acceleration of the electron. (4)