SECTION-B
(SHORT QUESTIONS)

NOTE: Answer any SEVEN of the following questions. Each question carries 05 marks.

Q.2. Prove that the formula $S = \frac{1}{2}at^2$ is dimensionally correct. Where s is distance, a is acceleration and t is time.
Q.3. What is the relation between angular and linear quantitics?
Q.4. At what condition direction of torque be reverse?
Q.5. Prove the law of conservation of momentum.
Q.6. How the mass of earth determined?
Q.7. What are the conditions for interference of light?
Q.8. Why the amplitude of simple pendulum kept small?
Q.9. Find the unit vector parallel to vector $\vec{A} = 4\hat{i} + 7\hat{j} + 4\hat{k}$.
Q.10. A boy throws a ball upward with speed of 14.7 m/s. How long the ball rises?
Q.11. An ambulance travels to observer with speed 80 km/h, its siren emits sound at frequency of 2000 Hz what frequency will be detected by stationary observer?

SECTION-C
(DESCRIPTIVE QUESTIONS)

NOTE: Answer any TWO of the following questions. Each question caries 09 (5+4) marks.

Q.12. (a) State and explain product of two vectors. Show that dot product is commutative.
(b) What is projectile motion? Drive the formula for its maximum range.

Q.13. (a) What are characteristics of simple harmonic motion? Prove that the motion of mass-spring system is simple harmonic motion.
(b) How the magnitude and direction of resultant can obtain by addition of vectors by rectangular component method.

Q.14. Write notes on any TWO of the following:
(a) Thin lens formula
(b) Simple pendulum
(c) Universal law of Gravitation
(d) Michelson's interferometer