

**M.E.S. INDIAN SCHOOL – DOHA – QATAR.**  
**BOYS' SECTION /GIRLS' SECTION**  
**PHYSICS**  
**CHECKLIST QUESTIONS FOR FIRST TERM EXAM -2015**

**CLASS XI (CBSE)**

**CHAPTER 2 : UNITS AND MEASUREMENT**

1. Advantages of SI system.
2. Uses of dimensional analysis.
3. Limitations of dimensional analysis
4. Convert (a) 1 newton into dyne (b) dyne into Newton (c) joule into erg  
(d) erg into joule.
5. Derive the following expressions dimensionally.
  - (a)  $T=2\pi \sqrt{l/g}$
  - (b)  $n=1/2l\sqrt{T/m}$
  - (c)  $F=kmv^2/r$
  - (d)  $V=kpr/l\eta$
6. find out dimensions of a,b
  - (a)  $(p+a/v)(V-b)$
  - (b)  $v=a+bt$
  - (c)  $x=at+bt$
7. calculate percentage error in X  
 $X=a^3 b/c d$   
Where percentage error in a,b,c,d are 2%, 1%, 3%, 4% respectively.
8. All the error numericals are important.

**CHAPTER 3 AND 4 : MOTION IN A STRAIGHT LINE AND MOTION IN A PLANE**

9. All the graphs given in the reader are very important.
10. Graphical method – equation of motion.
  - (a)  $S = ut + at$
  - (b)  $v = u + at$
  - (c)  $v = u + 2as$
11. Define relative velocity.
12. Numericals based on relative velocity.
13. State parallelogram law of vector addition. Find analytically the magnitude and direction of resultant vector.
14. Resolution of vector components. ( rectangular components)
15. Projectile – horizontal projection
  - (a) S.T path of the projectile is a parabola.
  - (b) Time of flight
  - (c) velocity of the projectile.
16. Projectile \_ angular projection

- (a) S.T. path of the projectile is a parabola
- (b) Derive expression for time of flight, maximum height, range and maximum horizontal range.
- 17. Derive the relation connecting linear velocity and angular velocity
- 18. Derive the relation connecting linear acceleration and angular acceleration
- 19. Derive expression for the centripetal acceleration and give its direction.

### **CHAPTER 5: LAWS OF MOTION**

- 20. S.T Newtons second law is the real law of motion and other laws are contained in it.  
(Deduce Newtons I Law and III law from II law)
- 21. Differentiate inertial mass and gravitational mass
- 22. Differentiate impulse and impulsive force.
- 23. Define impulse. S.T. impulse is equal to change in momentum.
- 24. State and prove law of conservation of linear momentum based on
  - (a) Newton's second law.
  - (b) Newton's third law.
- 25. Recoil of gun.
- 26. Differentiate inertial and non inertial frames
- 27. Concurrent force? Conditions to be in equilibrium.
- 28. Laws of static friction and kinetic friction.
- 29. Define co-efficient of static friction and kinetic friction.
- 30. Define angle of friction and S.T.  $\tan$
- 31. Define angle of repose. S.T. angle of repose is equal to the angle of friction.
- 32. Comment – friction is a necessary evil.

### **CHAPTER 6 : WORK, ENERGY AND POWER.**

- 33. Differentiate conservative and non conservative force.
- 34. Define power. S.T power  $P = FV$
- 35. Define and derive expression for potential energy
- 36. Define and derive expression for kinetic energy.
- 37. State and prove work energy theorem
- 38. State and prove law of conservation of energy using relevant diagram and graph.
- 39. Differentiate elastic and inelastic collisions.
- 40. Obtain expression for velocities of two bodies after elastic collision in one dimension.
- 41. Illustrate law of conservation of energy in an oscillating pendulum.
- 42. Derive an expression for the potential energy .

**ALL THE BEST**