

DELHI PUBLIC SCHOOL, JAMMU
Assignment for Annual Examination
SESSION (2018 – 19)

Class 11th

Sub-Physics

Section A

- Q1 What are the characteristics of S.I. Unit?
- Q2 How dimensional formula differ from dimensional equation.
- Q3 Write any two applications of dimensional formula.
- Q4 What is the difference between precision and accuracy?
- Q5 If the velocity of light 'c', plank's constant 'h' and gravitational constant 'G' are taken as fundamental quantities then express mass, length and time in terms of these quantities.
- Q6 The percentage error in the measurement of a,b,c& d is 1%,2%,3% and 4% resp. Find the percentage error in quantity X if it is represented by relation $\frac{a^2 b^3 c^{5/2}}{d^2}$
- Q7 Convert 62.5 joules into ergs.
- Q8 What is the difference between axial vector and polar vector?
- Q9 Using analytical method, find the resultant of two vectors acting on a point by parallelogram law of vector addition.
- Q10 man run across the rooftop of a tall building and jump horizontally with the group of landing on the roof of the next building which is also low height then the first. His speed is 9 M per second the horizontal distance between two buildings is 10 M and the height difference is 9M will he be able to land on the next building?
- Q11 A driver takes 0.20 second to apply the break after he sees a need for it. This is called the reaction time of the driver. If he is driving car at a speed of 54 km per hour and the break or that the acceleration of 6.0 M/s² find the distance travelled by car after he sees the need to put the break?
- Q12 to a person movie list with a velocity of 4.8 km per hour rain afraid to fall vertically downward with a speed of 6.4 km per hour. Find the actual speed and direction of rain.
- Q13 Explain law of conservation of momentum and any of its three application.
- Q14 Why it is necessary to bend knees after jumping from Greater height?
- Q15 Obtain an expression for angle of repose and angle of friction. What is the relation between them.
- Q16 obtain an expression for the banking of road and velocity of the vehicle moving on it without skidding.
- Q17 What is the cause of friction? Explain its types. When an automobile moving with a speed of 36 km per hour it is an upward inclined road of angle 30° if engine is switched off.is the question of fiction involved is 0.1 how much distance will the automobiles before coming to rest. Take G equal to 10 m/s².
- Q18 Define impulse. Explain any of its two applications.
- Q19 Define work. explain positive work negative work and zero work.
- Q20 What is Energy. Write its SI unit dimensions. Obtain an expression for work energy theorem.
- Q21 What do you mean by collision? What is the difference between elastic and plastic collision.
- Q22 Obtain an expression for elastic collision.
- Q23 Define power. What are the SI unit.
- Q24 obtain an expression for the centre of mass of a body constituted of N particles.
- Q25 Show that centre of mass follow law of conservation of momentum.
- Q26 Define parallel axis theorem and perpendicular axis theorem.
- Q27 Define torque and angular momentum. Find the relation between them.

- Q28 Define moment of inertia and obtain its expression.
- Q29 2 ball of mass M each are placed at the vertices of an equilateral triangle. Another ball of mass $2m$ is placed at the third vertex of the triangle. Locate the center of mass of system.
- Q30 Define Newton's law of gravitation and obtain its expression between the two bodies of mass M_1 M_2 separated by distance r .
- Q31 Obtain an expression for the variation of gravity due to depth and height.
- Q32 Explain the principle of satellite. Obtain an expression for the height of the satellite.
- Q33 Define geosynchronous satellite.
- Q34 The escape velocity on Earth is 11.2 km per second. What will be its value on a planet having double the radius and eight times the mass of the earth.
- Q35 Define Kepler's law of planetary motion.
- Q36 How much below the surface of earth the acceleration due to gravity becomes 1% of its value at the Earth surface. Radius of earth is 6400 km.
- Q37 Define Hooke's law.
- Q38 What is elastic fatigue and elastic after effect. Explain them.
- Q39 Define different types of strains.
- Q40 What do you mean by pressure? Give its applications.
- Q41 Define viscosity and obtain its expression.
- Q42 What do you mean by surface tension? How does the upper surface of liquid act as a stretched membrane.
- Q43 Obtain an expression for ascent height formula.
- Q44 Obtain an expression for Stokes law and terminal velocity.
- Q45 What is latent heat.
- Q46 Explain Newton's law of cooling.
- Q47 Give application of thermal conductivity.
- Q48 Explain thermodynamics first law give its four applications.
- Q49 Explain the construction and working of heat engine.
- Q50 Why the efficiency of heat engine cannot be unity.
- Q51 Define pV indicator diagram.
- Q52 Obtain an expression for the pressure exerted by a gas.
- Q53 Define mean free path.
- Q54 Explain law of equipartition of energy.
- Q55 Explain the relation between simple harmonic motion and uniform circular motion.
- Q56 Explain simple harmonic motion. Obtain an expression for its time period.
- Q57 Show that motion of a stretched string is a simple harmonic motion.
- Q58 What are the characteristics of waves.
- Q59 Explain reflection from the boundary.
- Q60 Differentiate between progressive wave and stationary waves.
- Q61 Using analytical method find the expression for stationary waves.
- Q62 Explain Doppler Effect. Obtain nice expression when the listener and source are at rest and are in relative motion.
- Q63 Two lead spheres of 20 cm and 2 cm diameter respectively are placed with centers 100 cm apart. Calculate the attraction between them, given the radius of earth as 6.37×10^8 cm and its mean density as $5.53 \times 10^3 \text{ m}^{-3}$. Specific gravity of lead = 11.5 .
- Q64 A wire of length 5 m has a percentage strain of 0.032% under a tensile force. Determine the extension in the wire.
- Q65 Obtain an expression for mirror formula. Also define linear magnification.
- Q66 Obtain an expression for apparent depth for an object placed in the denser medium when viewed from the rarer medium.
- Q67 Explain principle construction and working of Optical Fibre.

- Q68 What is Dispersion. What is the cause of dispersion when the light split into seven of constituent colour passing through the prism.
- Q69 Explain construction and working of compound microscope.
- Q70 What is the minimum energy required to launch a satellite of mass 'm' kg from the earth's surface of radius R in a circular orbit at an altitude of 2R ?
- Q71 A load of 50 kgf produces an extension of 2 mm in a wire of 3 m long and 2 mm diameter. Calculate Young's modulus of elasticity
- Q72 A circular plate of uniform thickness has a diameter of 56 cm. A circular portion of diameter 42 cm is removed from one edge of the plate. Find the Center of Mass of the remaining portion.
- Q73 A hydraulic lift is designed to lift cars with a maximum mass of $4 \times 10^3 \text{ kg}$. The area of cross-section of the piston carrying the load is $5 \times 10^{-2} \text{ m}^2$. How much pressure the small piston will bear?
- Q74 To lift an automobile of 2000 kg, a hydraulic pump with a large piston 900 cm^2 in area is employed. Calculate the force that must be applied to pump a small piston of area 10 cm^2 to accomplish this.