

RAMAKRISHNA VIVEKANANDA MISSION
MODEL QUESTION FOR ANNUAL EXAM 2020
SUB : - PHYSICAL SCIENCE (ENGLISH MEDIUM)

Class - IX

FULL MARKS - 90

1. MCQ

1x13 = 13

- i) With increase of temperature the elasticity of a material
a) Increases b) Decreases c) Remains same d) None of these
- ii) The number of basic units in SI system are
a) 7 b) 6 c) 5 d) 4
- iii) The slope of a distance – time graph is
a) Velocity b) Acceleration c) Displacement d) Speed
- iv) Saturated vapour obeys
a) Boyle's law b) Charles's law c) Pressure law d) None of these
- v) The speed of sound is maximum in
a) Air b) Hydrogen c) Water d) Iron
- vi) A force of 100N acting on a body does 1000J work. The distance through which the body is displaced
a) 5m. b) 10cm. c) 10m. d) 5cm.
- vii) The valency of the element having atomic number 20 is
a) 2 b) 0 c) 8 d) 1
- viii) Which of the following solvents is used to remove nail polish?
a) Ethyl alcohol b) Methyl Alcohol c) Acetone d) Turpentine Oil
- ix) Avogadro's number is used in
a) Chemistry only b) Physics only c) Biology only d) Chemistry, Physics and Biology
- x) If a pH paper is soaked into gastric juice, it will indicate a pH
a) more than 7 b) less than 7 c) equal to 7 d) less than 1
- xi) Boiling point of a liquid –
a) Decreases with increase of pressure b) does not depend on pressure
c) Increases with increase of pressure d) does not always increase with increase of pressure
- xii) Which of the following ions responsible for hardness of water?
a) Fe^{2+} b) Na^+ c) HCO_3^- d) SO_4^{2-}
- xiii) The nature of commonly used toothpaste is
a) Neutral b) Acidic c) Basic d) Corrosive

2. VSA

1x23 = 23

- i) What is the S.I unit of thrust?
Or, What is the S.I unit of density?
- ii) Find the dimensional equation of Power?
- iii) State Newton's first law of motion.
Or, Name the principle on which a rocket works.
- iv) What is echo?
Or, What is quality of sound?
- v) State two favorable conditions for formation of dew.
- vi) 1 Calorie = _____ Joule
- vii) What is the distance between two successive compressions?

- viii) Define work.
- ix) A body of mass 2kg is moving with a speed of 20m/s. Find its Kinetic energy.
- x) Write the value of latent heat of fusion of ice in SI system.
- xi) What is the charge and mass of α - particle?
Or, Who imagined the presence of neutron in the atomic nucleus.
- xii) What are nucleons?
- xiii) What is the volume of 7gm Nitrogen in STP?
Or, What is the mass of 0.5 mole of CO_2 ?
- xiv) What do you mean by atomic mass unit?
- xv) What is an emulsion?
Or, What is electrophoresis?
- xvi) Name a solvent which can dissolve rubber.
- xvii) What is acid base indicator?
Or, Name an indicator which is used to determine the end point of naturalization of acid base titration.
- xviii) At what p^{H} tooth decay takes place?
- xix) Mention the method to collect the different fractions of crude petroleum.
- xx) By which process Iodine and Ethanol are separated from their mixture?
- xxi) What is water pollution?
- xxii) What is the safe limit of Arsenic in drinking water?
- xxiii) Write the name of basic salt with chemical formula.

3. SA

2x15 = 30

- i) Define surface tension and write its S.I unit.
Or, Define strain. Write its S.I unit.
- ii) State Hooke's law. Define elastic modulus.
- iii) Calculate the acceleration of a body of 250gm, when acted by a force of 1 Newton.
Or, A force being applied on body of mass 0.5kg, the body moves with an acceleration of 10ms^{-2} . What is the force?
- iv) Derive $v = u + at$ graphically.
- v) How can we determine the rate of fall of water from a tap using measuring cylinder and stop watch.
- vi) Define energy. What is the relation between horse power and watt?
- vii) State principle of calorimetry. Mention the assumptions taken.
- viii) What is frequency? How it related to time period?
- ix) Which constituent of detergent enhance the production of algal blooms. Name an organic pesticide.
- x) How the boiling point of the liquid depends on the pressure? Name two commercial materials obtain from the fractional distillation of crude petroleum.
- xi) How will you identify a colorless liquid is H_2SO_4 ?
Or, Write the industrial uses of aqua fortis.
- xii) What is a stone leprosy?
- xiii) What is seeding? Name a salt which contains water of crystallization.
Or, What do you mean by solubility of KNO_3 at 25°C is 40?
- xiv) What is molar volume? Write its value.
- xv) The inert gas elements are inert in chemical reactivity. Why?
Or, Write two characteristics of cathode rays.

4. LA

3x8 = 24

- i) Derive an expression for pressure of a liquid at a point
Or, explain why water falling out of a tap becomes narrower as it goes down?
- ii) The velocity of a train in particular direction increases to 60km/hr from 30km/hr in one minute. If the train moves with a uniform acceleration during that time. What is its acceleration in SI system?
Or, A bullet of mass 100gm is fired from a gun of mass 20kg with a velocity of 100ms^{-1} . Calculate the velocity of recoil of the gun.
- iii) A wave pulse on a string move a distance of 8m in 0.5sec. Find the velocity of the pulse and what would be the wavelength of the wave on the string if its frequency be 200Hz?
Or, Calculate the time taken by a sound wave of frequency 100Hz and wavelength 50cm to travel a distance of 500m.
- iv) A hot solid of mass 60gm at 100°C is placed in 150gm of water at 20°C . The final steady temperature recorded is 25°C . Calculate the specific capacity of the solid. [specific heat capacity of water = $4200\text{ J/Kg}^{\circ}\text{C}$]
Or, 40gm of water at 60°C is poured into a vessel containing 50gm of water 20°C . The final temperature recorded is 30°C . Calculate the thermal capacity of the vessel. [sp. heat capacity of water is $4.2\text{ J/gm}^{\circ}\text{C}$]
- v) Prove that during free fall, total energy of the body at any instant remains constant.
- vi) What is nascent hydrogen? Show a reaction to explain that the idea of nascent hydrogen is baseless.
Or, How will you prove that Nitric Acid contains Hydrogen and Nitrogen?
- vii) Why temperature and pressure are to mention to give the value of molar volume of gaseous substance?
Or, what is the number of molecules of Sulphur(S_8) present in 24gm of solid Sulphur.
- viii) State Bohr's postulates of atomic model to eliminate the defects of Rutherford's atomic model.