STD : X **Model Question Paper**

Science Paper – I

Physics

Max. Marks : 50

Time : 1 ¼ hrs

I. Choose the correct answer and write it against the question number in your answer book

1. A man arriving cement bag on his back up a slope will
   (a) learn backward (b) learn forward
   (c) what straight (d) lean towards his left

2. The wavelength of Chennai A broadcasting station is 60cm. At what frequency does Chennai A broadcast?
   (a) 3000kHz (b) 4000kHz
   (c) 5000kHz (d) 6000KHz

3. Them it voltage following of a transformer whose turns ration 40 is 60 volt. The output voltage is
   (a) 6 V (b) 40 V
   (c) 120 V (d) 240 V

4. Whch of the following is based on electromagnetic induction?
   (a) transformer (b) galvanometer
   (c) loudspeaker (d) motor

5. The un of stress is
   (a) Nm (b) Nm-1
   (c) Nm2 (d) N s-1

6. A chain reaction is possible when the mass of the fuel is greater than
   (a) proton mass (b) neutron mass
   (c) electron mass (d) critical mass

7.In a Nuclearractor the fissionable material is
   (a) $_{92}U^{232}$ (b) $_{92}U^{235}$ (c) $_{90}Th^{234}$ (d) $_{94}Pu^{235}$

8. Natural radioactivity occurs in elemts of atomic number greater than

   (a) 28 (b) 82 (c) 52 (d) 40

9. The object which are found between orbits of Mars and Jupiter are
   (a) meteorites (b) asteriods (c) comets (d) meceors

10. The ratio if the velocities with which two galaxies move away from the earth is 23. The ratio of their distance is

(a) 3:2 (b) 2:3 (c) 4:9 (d) 9:4

II. Answer any five of the following question in one or two sentences: (5 X 2 = 10)

11. Define angular momentum

12. What is the energy of a photon of frequency 705 X $10^{14\ Hz?}$

13. The magnetic flux linked with a coil hangs from 0.3 W to zero in 1.2 second. Calculate the induced emf.

14. State Fleming's left hand rule

15. Why does a person standing in a railway platform tend to fall towards the moving train?

16. How does the surface tension vary with temperature?

17. Find the nuclear radius of $_{13}Al^{27}$

18. What is he principle involved in the production of X-rays?

19. State Newton's universal law of gravitation.

III. Answer any five of the following question.

20. Compare the motion of a freely falling body with that of a projectile.

21. Derive the relation between linear velocity and angular velocity.

22. Calculate the momentum of a particle associated with de Broglie current wavelength 2a.

23. What is photoelectric effect? On what factors does the photoelectric current depend?

24. Find the cost of using a 1500 W immersion heater and a 700 W electric iron for 30 minutes per day or 30 days, at the cost of Rs.2 per unit.

25. Distinguish between streamline flow and turbulent flow.

26. Define reproduction factor. Give its significance.

27. Write any three properties of X-rays?

28. What are meteors and meteorites?

IV. Answer any three of the following question.

29. A force of 150 N is required to break a 3cm long nylon ord. An object of mass 1.2 kf is fixed to one and of the cord and whirled around. Determine the maximum speed with which it can be whirled around without breaking the cord.

30. Explain Raman effect and write tis applications.

31. List the parts of D C generator and describe its working with a neat diagram.

32. Explain the various energies possessed by a liquid that flows though a pipe.

33. describe Rutherford's -particle scattering experiment and write the inference.

34. Writ the uses of Radio-isotopes.

LIST OF PRACTICALS RECOMENDED FOR X STD MATRIC

1. Using simple pendulum determine the acceleration due to gravity in the laboratory

2. Determine the melting point if wax by by plotting cooing curve

3. Determine the focal length of the given convex lens

4. Determine the weight of the given solid using the principle of moments.

5. Determine the relative density (specific gravity) of a liquid using a test-tube float as a constant immersion hydrometer.

6. Verify the first law of transverse vibration of a stretched string using sonometer.

7. Determine the refractive index of the material of the given glass prism.

8. Determine the specific resistance of the material of a given wire.