



11-03-2024

Standard 10**SCIENCE****Part - I**

Time: 3.00 Hours

Marks: 75

I. Choose the correct answer:**12x1=12**

- 1) A convex lens forms a real, diminished point sized image at focus. Then the position of the object is at
 - a) focus
 - b) infinity
 - c) at 2f
 - d) between f and 2f
- 2) Kilowatt hour is the unit of
 - a) resistivity
 - b) conductivity
 - c) electrical energy
 - d) electrical power
- 3) Velocity of sound in the atmosphere of a planet is 500 ms^{-1} . The minimum distance between the sources of sound and the obstacle to hear the echo, should be
 - a) 17 m
 - b) 20 m
 - c) 25 m
 - d) 50 m
- 4) Gamma radiations are dangerous because
 - a) it affects eyes & bones
 - b) it affects tissues
 - c) it produces genetic disorder
 - d) it produces enormous amount of heat
- 5) The gram molecular mass of oxygen molecule is
 - a) 16 g
 - b) 18 g
 - c) 32 g
 - d) 17 g
- 6) Chemical formula of rust is
 - a) $\text{FeO} \cdot x\text{H}_2\text{O}$
 - b) $\text{FeO}_4 \cdot x\text{H}_2\text{O}$
 - c) $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$
 - d) FeO
- 7) Which of the following is hygroscopic in nature?
 - a) ferric chloride
 - b) Copper sulphate penta hydrate
 - c) silica gel
 - d) None of the above
- 8) Krebs's cycle takes place in
 - a) Chloroplast
 - b) mitochondrial matrix
 - c) stomata
 - d) inner mitochondrial membrane
- 9) 'Heart of heart' is called
 - a) SA node
 - b) AV node
 - c) Purkinje fibres
 - d) Bundle of His
- 10) Which organ acts as both exocrine gland as well as endocrine gland
 - a) pancreas
 - b) kidney
 - c) liver
 - d) lungs
- 11) Okasaki fragments are joined together by
 - a) Helicase
 - b) DNA polymerase
 - c) RNA primer
 - d) DNA ligase
- 12) Which is used to build scripts?
 - a) script area
 - b) Block palette
 - c) stage
 - d) sprite

Part - II**II. Answer any 7 questions: Q.No. 22 is compulsory.****7x2=14**

- 13) Why is tungsten metal used in bulbs, but not in fuse wires?
- 14) Explain why the ceilings of concert halls are curved?

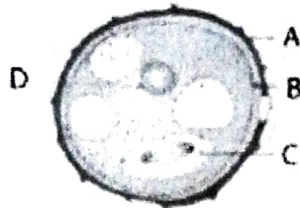
15) Match

- | | | |
|--------------------|---|-----------------------------|
| 1. Soddy Fajan | - | a) Natural radioactivity |
| 2. Irene curie | - | b) Displacement law |
| 3. Henry Bequrrel | - | c) Mass energy equivalence |
| 4. Albert Einstein | - | d) Artificial radioactivity |

16) What is molar volume of a gas?

17) The aquatic animals live more in cold region. why?
 kindly send me your key Answers to our email id - padasalai.net@gmail.com

- 18) What is respiratory quotient?
 19) Write the dental formula of rabbit.
 20) What are the structures involved in the protection of brain?
 21) Identify the parts A, B, C and D



- 22) Calculate the pH of 1.0×10^{-4} molar solution of HNO_3 .

Part - III

III. Answer any 7 questions: Q.No. 32 is compulsory:

7x4=28

- 23) a) State Joule's law of heating.
 b) An alloy of nickel and chromium is used as the heating element. why?
 24) a) What do you understand by the term 'ultrasonic vibration'?
 b) State three uses of ultrasonic vibrations.
 c) Name three animals which can hear ultrasonic vibrations.
 25) Write any three features of natural and artificial radioactivity.
 26) Calculate the number of moles in
 a) 27g of Al b) 1.51×10^{23} molecules of NH_4Cl
 27) A is reddish brown metal, which combines with O_2 at $< 1370 \text{ K}$ gives B, a black coloured compound. At a temperature $> 1370 \text{ K}$, A gives C which is red in colour. Find A, B, and C with reaction.
 28) In what way hygroscopic substances differ from deliquescent substances?
 29) How can you determine the age of the fossils?
 30) What are the effects of hybrid vigour in animals?
 31) a) What are the agents of soil erosion?
 b) What are the consequences of deforestation?
 32) An object is placed at a distance 20cm from a convex lens of focal length 10cm. Find the image distance and nature of the image.

Part - IV

IV. Answer all the questions:

- 33) a) What are types of inertia? Give an example for each type.
 (OR) *Tenkasi Dist.*
 b) Derive the ideal gas equation.
 34) a) Explain the factors influencing the rate of a reaction.
 (OR)
 b) Arrive at, systematically, the IUPAC name of the compound. $\text{CH}_3-\text{CH}_2-\text{CH}_2\text{OH}$
 35) a) i) What are Okazaki fragments?
 ii) A pure tall plant (TT) is crossed with pure dwarf plant (tt), What would be the F1 and F2 generations? Explain.
 (OR)
 b) i) Mention the diseases caused by tobacco smoke.