

# CAREER POINT

## MOCK TEST PAPER

Class : 10<sup>th</sup>

Sub. : Science

Duration : 3 Hours

Max. Marks : 90

### GENERAL INSTRUCTIONS :

1. All questions are compulsory.
2. The question paper comprises of two Part, A and B. You are to attempt both the sections.
3. Questions 1 to 3 in Part A are one mark questions. These are to be answered in one word or in one sentence.
4. Questions 4 to 6 in Part A are two marks questions. These are to be answered in about 30 words each.
5. Questions 7 to 18 in Part A are three marks questions. These are to be answered in about 50 words each.
6. Questions 19 to 24 in Part A are five marks questions. These are to be answered in about 70 words each.
7. Questions 25 to 27 in Part B are 2 marks questions and Questions 28 to 36 are multiple choice questions based on practical skills. Each question of multiple choice questions is a one mark question. You are to select one most appropriate response out of the four provided to you.

### PART – A

- Q.1** Draw the structure of Butanone molecule,  $\text{CH}_3\text{COC}_2\text{H}_5$ .
- Q.2** Identify the name of functional group in following compounds.  
(i)  $\text{CH}_3\text{COOCH}_3$                       (ii)  $\text{CH}_3\text{CH}_2\text{CHO}$
- Q.3** What is Chipko movement ?
- Q.4** How does the valency of elements vary  
(i) in going down a group, and  
(ii) in going from left to right in a period of the periodic table ?
- Q.5** What are natural resources ? State two factors that work against an equitable distribution of these resources.
- Q.6** Name the component of white light that deviates the most while passing through a glass prism with reason.
- Q.7** The atomic number of an element is 16. Predict  
(i) the number of valence electrons in its atom                      (ii) its valency  
(iii) its group number    (iv) whether it is a metal or a non-metal  
(v) the nature of oxide formed by it    (vi) the formula of its chloride
- Q.8** Write chemical equations to show what happens when  
(i) ethanol is heated with concentrated sulphuric acid at 443 K.  
(ii) ethanol reacts with ethanoic acid in the presence of an acid acting as a catalyst.  
(iii) an ester reacts with a base.

- Q.9** Distinguish between acquired and inherited traits, giving one example of each.
- Q.10** Differentiate between pollination and fertilisation.
- Q.11** Can you justify the statement that 'human males are responsible for determining the sex of the baby and not females' ?
- Q.12** What is sustainable management ? Why sustainable management of natural resources is necessary ?
- Q.13** Write any three characteristics of image formed by plane mirror.
- Q.14** A 10 cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 30 cm. The distance of the object from the lens is 20 cm. Find the (i) position, (ii) nature and (iii) size of the image formed.
- Q.15** Give reasons for the following :  
(i) Colour of the sky is blue.  
(ii) The sun can be seen about two minutes before actual sunrise.
- Q.16** On a glass plate a light wave is incident at an angle of 60 degree. If the reflected and the refracted waves are mutually perpendicular, then what is the refractive index of glass material.
- Q.17** How is ozone formed in the higher level of atmosphere? "Damage to the ozone layer is a cause of Concern". Justify this statement.
- Q.18** An organic compound (X) with molecular formula  $C_2H_6O$  is generally used as a solvent in cough syrups. It reacts with ethanoic acid to form sweet smelling compound (Y) and water  
(a) Identify the compound (X).  
(b) Write the next member of homologous series to which compound (X) belongs.  
(c) Write the balanced chemical reaction when compound (X) reacts with sodium metal.
- Q.19** (a) Among the halogens F, Cl, Br & I which does not fit in the Dobereiner's triad ?  
(b) Give the name & electronic configuration of second alkali metal.  
(c) Why did Mendeleev leave some gaps in his Periodic Table?  
(d) In Mendeleev's Periodic Table, why was there no mention of Noble gases like Helium, Neon and Argon ?  
(e) Would you place the two isotopes of chlorine, Cl-35 and Cl-37 in different slots in the modern periodic table because of their different atomic masses or in the same slot because their chemical properties are the same? Justify your answer.

**OR**

- (a) What is a soap? Why are soaps not suitable for washing clothes when the water is hard?  
(b) Explain the action of soap in removing an oily spot from a piece of cloth.
- Q.20** Write chemical equations to represent what happens when  
(a) ethanol burns in air?  
(b) ethanol reacts with sodium metal?  
(c) ethanol is heated with alkaline  $KMnO_4$ ?  
(d) ethanol is heated with ethanoic acid in the presence of few drops of concentrated sulphuric acid ?  
(e) ethanol is heated at 443 K in excess of concentrated sulphuric acid?

**OR**

- Answer the following questions regarding element  ${}_{15}X^{31}$   
(i) To which group does it belong ?  
(ii) To which period does it belong ?  
(iii) How many electrons are there in its valence shell ?  
(iv) What is its valency ?  
(v) Is it a metal or a nonmetal ?

**Q.21** "Contraceptive methods prove to be a boon to the society". Explain the fact.

**OR**

Write down two differences between tubectomy and vasectomy.

**Q.22** What are the various trophic levels of the food chain? Explain with the help of an example of a food chain.

**OR**

- a)** Explain Speciation. How does geographical isolation results in speciation ?
- b)** The human hand, cat paw and horse foot, when studied in detail, shows the same structure of bones and also points towards a common origin.
- What is the term given to such structures?
  - What do you conclude from this ?

**Q.23** (a) Draw a ray diagram to show the formation of image of an object placed between infinity and the optical centre of a concave lens.  
(b) A concave lens of focal length 15 cm forms an image 10cm from the lens. Calculate: the magnification for the image formed. **[2½ + 2½marks]**

**OR**

Define prism & prism angle. Explain the refraction of light through a glass prism with diagram.

**Q.24** (a) Draw labelled diagram of human eye. **[2 + 1 + 1 + 1 = 5 marks]**  
(b) Define following  
(i) power of accommodation (ii) persistence of vision  
(iii) near point

**OR**

(a) Draw a diagram to show the formation of image of a distant object by a myopic eye.  
(b) State two reasons due to which this eye defect may be caused.  
(c) A person with a myopic eye cannot see objects beyond a distance of 1.5 m. What would be the power of the corrective lens used to restore proper vision? **[1 + 2 + 2 = 5 marks]**

### **PART – B**

**Q.25** (a) What is meant by periodicity in properties of elements with reference to the periodic table ?  
(b) Why do all elements of the same group have similar properties ?

**Q.26** Explain mono hybrid cross of Mendel.

**Q.27** How does variation lead to evolution ?

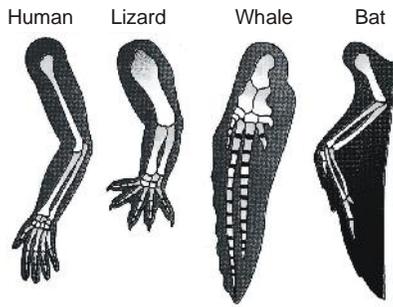
**Q.28** Eka aluminium is now known as

- Galium
- Germanium
- Scandium
- Silicon

**Q.29** Cleansing action of soaps is based on the principle that

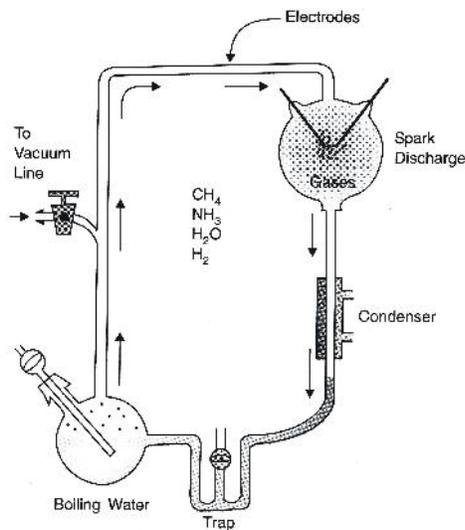
- Soap reacts with the dust
- The ionic end of the soap dissolves in water while the carbon chain bonds with oil or dirt
- The soap molecules attracts dirt
- Soap combines with the dirt

**Q.30** The figure above shows :



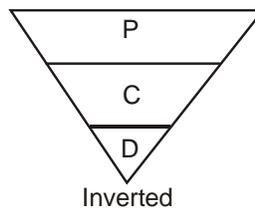
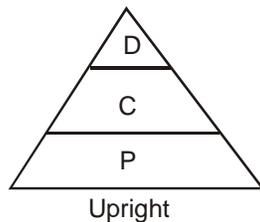
- (A) Structures with a common origin but with a different function
- (B) Structures with common origin and common function
- (C) Structures with different origin but common function
- (D) Structures with different origin and different function

**Q.31** The figure represents :



- (A) Experiment to create different gases.
- (B) Simple fractionation process.
- (C) Experiment to demonstrate chemical evolution of life.
- (D) Haldane's reaction.

**Q.32** Which type of pyramid best represents the pyramid of energy ;



P = Producer  
C = Consumer  
D = Decomposer

- (A) Upright
- (B) Inverted
- (C) Both
- (D) None

**Q.33** Two of the following '4' figures that illustrate budding are :



- (i) (ii) (iii) (iv)  
 (A) (i), (ii) (B) (ii), (iii) (C) (i), (iv) (D) (i), (iii)

**Q.34** Coin placed in a bowl when seen from a place just disappears. When water is poured into the bowl without disturbing the coin ,the coin

- (A) Will not be seen (B) Appears above the water surface  
 (C) Becomes visible again (D) Appears very much deep inside the water

**Q.35** The image formed on the retina of the human eye is :

- (A) Virtual and erect (B) real and inverted  
 (C) virtual and inverted (D) real and erect

**Q.36** In the given figure :



What is the path taken by Ova → Embryo → Foetus

- (A) Oviduct → Uterus → Ovary → Cervix → Vagina  
 (B) Ovary → Fallopian tube → Uterus → Cervix → Vagina  
 (C) Ovary → Oviduct → Uterus → Vagina → Cervix  
 (D) Ovary → Uterus → Vagina