

**KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD**

**Model Question Paper**

**Subject: SCIENCE – 2018-19**

**Total No.of Questions: 42**

**Subject Code: 83E**

**Time : 3 Hours**

**Max Marks: 80**

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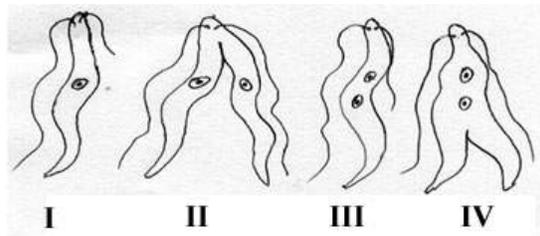
**Four alternatives are provided for each question. Choose the most appropriate alternative and write it with its alphabet. 10 x 1 = 10**

- The SI unit of electric current is  
(A) Ohm            (B) Volt            (C) Ampere            (D) Watt
- The substance that is oxidised in the following chemical reaction is  
 $MnO_2 + 4 HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$   
(A) *HCl*            (B) *MnO\_2*            (C) *MnCl\_2*            (D) *H\_2O*
- Red coloured light is used in traffic signals to indicate the vehicles to stop, because compared to other colours red light  
(A) has high frequency  
(B) scatters more  
(C) has less wavelength  
(D) scatters less
- Identify the correct pair of analogous organs among the following  
(A) The forelimb of man and the forelimb of a frog  
(B) The wing of a butterfly and the wing of a bat  
(C) The wing of a bird and the wing of a bat  
(D) The forelimb of lizard and the forelimb of a frog
- Observe the following chemical equations and identify the correct statement.  
(i)  $CuSO_4 + Fe \rightarrow FeSO_4 + Cu$   
(ii)  $2AgNO_3 + Cu \rightarrow Cu(NO_3)_2 + 2Ag$   
(A) Copper is more reactive than Iron and Silver  
(B) Iron is less reactive than Copper and Silver  
(C) Copper is more reactive than Silver but less reactive than Iron  
(D) Silver is more reactive than Copper and Iron

6. The characteristics of the image of an object formed on the retina by the lens of the eye is

- (A) Real and inverted (B) Virtual and erect  
(C) Real and erect (D) Virtual and inverted

7. The correct order of binary fission in Leishmania is

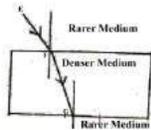


- (A) II, III, IV, I (B) I, III, IV, II  
(C) IV, I, III, II (D) III, I, II, IV

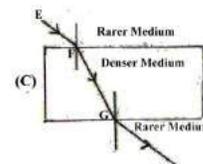
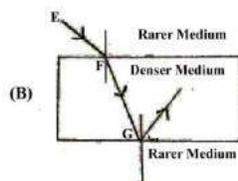
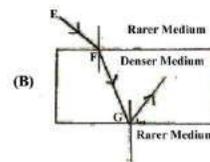
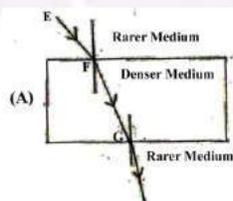
8. The  $P^H$  values of four solutions P, Q, R and S are 7.8, 1.0, 13.0 and 1.4 respectively. The solution having highest hydrogen ion concentration among them is

- (A) P (B) Q  
(C) R (D) S

9.



Observe the figure. The correct figure indicating the direction of the light ray  $FG$  after refraction is



10. The watershed management

- (A) increases droughts and floods  
(B) increases production and income of the watershed community

- (C) decreases the biodiversity of the downstream reservoirs  
 (D) increases deforestation

**11. Functions of certain structures of nervous system in animals are given in column 'A' and the names of these structures are given in column 'B'. Match them** **4 x 1 = 4**

**Column - 'A'**

**Column - 'B'**

- |   |                              |
|---|------------------------------|
| i. Carries involuntary quick responses  | a) Peripheral nervous system |
| ii. Controls voluntary and conscious thinking   | b) Medulla                   |
| iii. Maintains precision in voluntary actions and balance of the body                     | c) Reflex Arc                |
| iv. Facilitates the communication between central nervous system and the other body parts | d) Dendrite                  |
|   | e) Axon                      |
|   | f) Cerebellum                |
|   | g) Fore brain                |

**Answer the following questions.**

**7 x 1 = 7**

12. The object distance of a lens is  $-30\text{cm}$  and image distance is  $-10\text{cm}$ . Find the magnification of the lens. With the help of this, decide whether the size of the image is smaller or bigger than the size of the object.
13. What are fossils?
14. In a bakery, baking powder was not added while preparing cake. The cake obtained was hard and small in size. What is the reason for this?
15. What is geotropism?
16. Water mixed with the milk is taken in beaker 'A' and sugar solution is taken in beaker 'B'. Light is passed through both the beakers. In which beaker the path of light is visible? Why?
17. What is a chemical combination reaction?

18. In mammals and birds oxygenated blood and deoxygenated blood gets separated. Why?

**Answer the following questions:**

**16 x 2 = 32**

19. A potential difference of  $220V$  is applied across a resistance of  $440\Omega$  in an electrical appliance. Calculate the current drawn and the heat energy produced in 20 seconds.

20. Explain the breakdown of glucose in aerobic respiration and anaerobic respiration.

**OR**

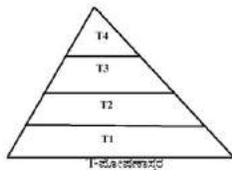
Explain the process of transportation of substances in phloem.

21. Draw the digram of an electric motor and label the following parts

(i) Split rings

(ii) Armature

22.



Observe the figure and answer the given questions.

(i) Which trophic level has maximum number of organisms? Why?

(ii) In which trophic level chemicals like DDT are accumulated in highest concentration? Why?

23. What is Myopia? Name the lens used to correct Myopia.

24. What is the resistance of a conductor? Mention the factors on which the resistance of a conductor depend.

**OR**

Mention the disadvantages of connecting electrical appliances in series in domestic wiring.

25. Draw the diagram of the electric circuit in which the resistors  $R_1, R_2, & R_3$  are connected in parallel including ammeter and voltmeter and mark the direction of current.

26. Draw the diagram of the arrangement of apparatus to know the reaction of Zinc granules with dilute sulphuric acid and testing

hydrogen gas and label the part that contain zinc granules and sulphuric acid.

27. Explain the preparation of plaster of paris with the help of balanced chemical equation.

28. Draw the diagram showing the germination of pollen on stigma and label the following parts.

(i) Stigma (ii) Pollen Tube

29. What is placenta? Write two functions of placenta.

30. Write the four properties of ionic compounds.

**OR**

Write any four physical properties of metals.

31. Write the balanced chemical equations for the following chemical reactions.

(i) Potassium bromide reacts with Barium iodide

(ii) Zinc carbonate is heated

**OR**

Which coloured fumes are obtained when lead nitrate is heated? Write the balanced chemical equation for this reaction. Name the type of this chemical reaction.

32. "Practice of reuse and recycle of materials will contribute to maintain sustainability of the environment". Support this statement with reasons.

33. What are saturated hydrocarbons and unsaturated hydrocarbons? Write the structure of the simplest hydrocarbon.

**OR**

Name the functional group in the following compounds and write their molecular formula.

(i) Ethanol (ii) Ethanoic acid

34. Draw the ray diagram showing the formation of image when the object is kept beyond centre of curvature (C) of a concave mirror.

**Answer the following questions. 5 x 3 = 15**

35. Draw the diagram showing the structure of a nephron and label the following parts

(i) Glomerulus (ii) Bowman's capsule

36. State the laws of refraction. What is the meaning of “the refractive index of crown glass is 1.52”?

**OR**

Define the power of a lens. What is the meaning of “The power of a lens is 1 diaptor” If the power a of a lens is -2.0 D, then what type of lens is that? When an object is kept at infinity from this type of lens, what is the size of the image formed?

37. Explain the structure of a bio gas plant and the process of production of fuel in bio gas plant.

**OR**

“We cannot establish nuclear power reactors everywhere though large amount of electricity is produced by nuclear energy” Why? Explain.

38. The atomic numbers of two elements *A* and *B* are 11 and 12 respectively. Which element exhibits highest metallic property? Why? Write the molecular formula of the compounds formed when these elements combine with the element ‘*Z*’ having atomic number 8.

39. Draw the diagram of the apparatus used to test the conductivity of sodium chloride solution and label the graphite rod and the part where sodium chloride solution is present.

**Answer the following questions:**

**3 x 4 = 12**

40. (a) Explain the process of sex determination in human beings

(b) Why are the small number of surviving tigers a cause of worry from the point of view of genetics?

**OR**

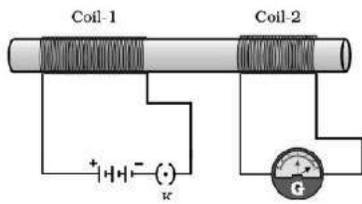
(a) Traits acquired during the life time of an individual are not inherited. Why?

(b) How do Mendel’s experiments show that the traits are inherited independently? Explain.

41. (a) Explain substitution reaction with an example and chemical equation.

(b) Explain the cleansing action of soap.

42. In the figure as the current changes in coil-1 the galvanometer



connected to coil-2 shows deflection.

Explain the phenomenon that causes this effect. Name and state the law used to know the direction of current in the device that works due to this phenomenon.

