

Sample Question Paper

1. The process of separating the hydrocarbon fraction from crude petroleum by fractional distillation is called

- (A) Resolution (B) Reforming
(C) Refining (D) Regeneration
(E) None of these

2. Process of conversion of wood into coal by biochemical process, taking over millions of years, is called

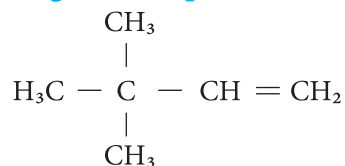
- (A) Catenation (B) Carbonation
(C) Pyrolysis (D) Destructive distillation
(E) None of these

3. Match both the columns and mark the correct option from the codes given below.

Column I		Column II	
(a) Diamond		(i) Lubricant	
(b) Water gas		(ii) $\text{CO} + \text{N}_2$	
(c) Producer gas		(iii) $\text{CO} + \text{H}_2$	
(d) Graphite		(iv) Abrasive	
a	b	c	d
(A) (i)	(ii)	(iii)	(iv)
(B) (ii)	(iii)	(iv)	(i)
(C) (iii)	(iv)	(i)	(ii)
(D) (iv)	(iii)	(ii)	(i)
(E) None of these			

4. The International Union of Pure and Applied Chemistry devised a method of systematically naming organic compounds, which is known as the IUPAC system. According to this system what will be the name of the given compound?

- (A) 3,3,3-Trimethyl-1-propene
(B) 1,1,1-Trimethyl-2-propene
(C) 3,3-Dimethyl-1-butene
(D) 2,2-Dimethyl-3-butene
(E) None of these



5. Which of the following is not a characteristic property of carbon?

- (A) Catenation
- (B) Multiple bond formation
- (C) Availability of d-orbitals for bonding
- (D) Highest electronegativity
- (E) None of these

6. Which of the following is correct?

- (A) $\lambda_{\text{blue}} > \lambda_{\text{yellow}} > \lambda_{\text{green}}$
- (B) $\lambda_{\text{yellow}} > \lambda_{\text{green}} > \lambda_{\text{blue}}$
- (C) $\lambda_{\text{yellow}} > \lambda_{\text{blue}} > \lambda_{\text{green}}$
- (D) $\lambda_{\text{green}} > \lambda_{\text{blue}} > \lambda_{\text{yellow}}$
- (E) None of these

7. Which of the following statements is correct about rainbow?

- (A) In primary rainbow, red colour is on the outside and violet colour is on the inside.
- (B) In primary rainbow, violet colour is on the outside and red colour is on the inside.
- (C) Secondary rainbow is brighter than primary rainbow.
- (D) In secondary rainbow, light waves suffers one total internal reflection before coming out.
- (E) None of these

8. The amount of light entering the eye is controlled by the

- (A) Iris
- (B) Cornea
- (C) Pupil
- (D) Crystalline lens
- (E) None of these

9. The far point of a myopic eye is 1.5 m. To correct this defect of the eye, the power of lens is

- (A) 0.66 D
- (B) -0.66 D
- (C) +1.5 D
- (D) -1.5 D
- (E) None of these

10. Which one of the following is correct for heat produced by electric energy?

- (A) $H \propto R^2$
- (B) $H \propto t^2$
- (C) $H \propto I^2$
- (D) $H \propto V^2$
- (E) None of these.

11. Find the amount of energy given to each coulomb of charge passing through a 12 volt battery.

- (A) 12 J (B) 10 J
(C) 8 J (D) 6 J
(E) None of these.

12. What happens to overall resistance of the electric circuit in parallel connection due to which the current supply from the power supply is low?

- (A) Decreases (B) Increases
(C) No Changes (D) All of these
(E) None of these.

13. Calculate the electrical energy consumed by an electric bulb of 100 watt used of 30 hours?

- (A) 3 KWH (B) 0.03 KWH
(C) 30 KWH (D) 0.3 KWH
(E) None of these.

14. During the early stages of development, the embryos of reptiles, birds and mammals look very similar. This suggests that reptiles, birds and mammals

- (A) Have evolved from common ancestor
(B) Live in the same types of environment
(C) Have undergone parallel evolution
(D) Are no longer undergoing evolution.
(E) None of these

15. Preserved traces of living organisms are called fossil. What type of fossil shown in the figure?

- (A) Fossil of a tree trunk
(B) Fossil of Trilobite
(C) Fossil of Ammonite
(D) Fossil of Knightia.
(E) None of these



16. A group of population splitting into two populations, can be called two independent species only when

- (A) They can interbreed with each other
(B) They cannot interbreed with each other
(C) They are not geographically isolated
(D) All of these
(E) None of these

17. If a plant heterozygous for tallness is selfed, the F_2 generation has both tall and dwarf plants in 3:1 ratio. This proves the principle of

- (A) Dominance
- (B) Segregation
- (C) Independent assortment
- (D) Incomplete dominance
- (E) None of these

18. Light travels as a

- (A) Parallel beam in each medium
- (B) Convergent beam in each medium
- (C) Divergent beam in each medium
- (D) Divergent beam in one medium and convergent beam in the other medium
- (E) None of these

19. An object is placed at the centre of curvature of a concave mirror of focal length f . The distance between its image and pole is

- (A) Equal to f
- (B) Between f and $2f$
- (C) Equal to $2f$
- (D) Greater than $2f$
- (E) None of these

20. A thin layer of water is transparent but a very thick layer of water is

- (A) Translucent
- (B) Opaque
- (C) Most transparent
- (D) All of these
- (E) None of these

21. $f=R/2$ is valid

- (A) For convex mirrors but not for concave mirrors
- (B) For concave mirrors but not for convex mirrors
- (C) For both convex and concave mirrors
- (D) Neither for convex mirrors nor for concave mirrors
- (E) None of these

22. After how many days ovary releases an egg?

- (A) 20 days
- (B) 25 days
- (C) 28 days
- (D) 15 days
- (E) None of these

23. Name the organ through which the developing foetus obtains its food from the mother's

- (A) Ureters (B) Placenta
(C) Uterus (D) Zygote
(E) None of these

24. How does sponge reproduce?

- (A) Fragmentation (B) Regeneration
(C) Fission (D) Grafting
(E) None of these

25. Where does the fertilized egg get implanted in human beings?

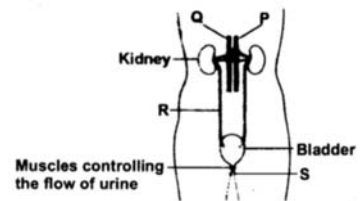
- (A) Fallopian Tube
(B) Vasdeference
(C) Vagina
(D) Uterus
(E) None of these

26. Which of the following statements is false about anaerobic respiration?

- (A) It takes place in the micro-organisms like yeast
(B) It produces a considerable large amount of energy
(C) It favours partial breakdown of food
(D) In animal muscles, lactic is the end product.
(E) None of these

27. The given figure shows the excretory system of a human body. Which part of this system brings in the dirty blood into the kidneys?

- (A) R
(B) Q
(C) S
(D) P
(E) None of these



28. Tropism is the movement of a part of a plant in response to an external stimulus. The growth of pollen tube towards the ovule during the process of fertilization in a flower is an example of

- (A) Geotropism (B) Hydrotropism
(C) Chemotropism (D) Phototropism
(E) None of these

29. This is a narrow muscular tube lined by stratified squamous epithelium containing mucus glands, In humans, it is about 25 cm long and quickly conveys food and fluids by peristalsis from pharynx to the stomach. Identify it.

- (A) Alimentary canal
- (B) Ileum
- (C) Duodenum
- (D) Oesophagus
- (E) None of these

30. The metals which can be cut with the knife is:

- (A) Na
- (B) At
- (C) Ca
- (D) Rb
- (E) None of these

31. Which one of the following is the amphoteric oxide?

- (A) H_2O
- (B) $CuCl_2$
- (C) ZnO
- (D) $CaCO_3$
- (E) None of these

32. Which one of the following is not the allotropic forms of sulphur?

- (A) Monoclinic sulphur
- (B) Rhombic sulphur
- (C) Milk of sulphur
- (D) Bulkminster flurene
- (E) None of these

33. Which one of the following is electropositive in nature?

- (A) I
- (B) At
- (C) Po
- (D) Rb
- (E) None of these

34. When quicklime is added to water we get slaked lime and the mixture becomes hot. This is because the reaction is :

- (A) A chemical reaction
- (B) A decomposition reaction
- (C) A displacement reaction
- (D) An exothermic reaction
- (E) None of these

- 35. Which among the following reactions is in accordance to the law of conservation of mass?**
- (A) $\text{CaO} + \text{N}_2\text{O} \rightarrow 2\text{Ca}(\text{OH})_2$
 - (B) $2\text{HNO}_3 + \text{Ca}(\text{OH})_2 \rightarrow \text{Ca}(\text{NO}_3)_2 + \text{N}_2\text{O}$
 - (C) $3\text{BaCl}_2 + \text{Al}_2(\text{SO}_4)_3 \rightarrow 2\text{AlCl}_3 + 3\text{BaSO}_4$
 - (D) $2\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$
 - (E) None of these
- 36. What happens when lead reacts with copper chloride solution?**
- (A) Copper – lead alloy is formed
 - (B) Lead chloride is formed
 - (C) Displacement reaction takes place
 - (D) Both (A) and (C) are correct
 - (E) None of these
- 37. When ferrous sulphate is heated strongly a reddish brown residue of ferric oxide is obtained. This is an example of**
- (A) Decomposition reaction
 - (B) Exothermic reaction
 - (C) Displacement reaction
 - (D) Combination reaction.
 - (E) None of these
- 38. If pH of solution is 13, it means that it is**
- (A) Weakly acidic
 - (B) Weakly basic
 - (C) Strongly acidic
 - (D) Strongly basic
 - (E) None of these
- 39. Dilute hydrochloric acid is added to solid sodium carbonate. It is observed that**
- (A) No change takes place
 - (B) A loud sound is produced
 - (C) Brisk effervescence occurs
 - (D) The solution turns blue
 - (E) None of these
- 40. When the stopper of a bottle containing colourless liquid was removed, the bottle gave a smell like that of vinegar. The liquid in the bottle could be**
- (A) Hydrochloric acid solution
 - (B) Sodium hydroxide solution
 - (C) Acetic acid solution
 - (D) Saturated sodium bicarbonate solution
 - (E) None of these

41. Moist sodium bicarbonate was placed on a strip of pH paper. The colour of the strip

- (A) Turned blue (B) Did not change
(C) Turned green (D) Turned light pink.
(E) None of these

42. Which elements were adjusted together in Newlands Octave classifications?

- (A) Ni & Co (B) Fe & Se
(C) Br & Mn (D) Cu & Zn
(E) None of these

43. Which one of the following will show non metallic character?

- (A) Fe (B) Ni
(C) Br (D) Au
(E) None of these

44. Which one of the following is strongly acidic?

- (A) Cl_2O_7 (B) Na_2O
(C) MgO (D) P_2O_5
(E) None of these

45. Which one of the following is most reactive?

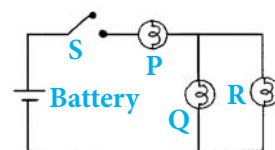
- (A) F (B) Cl
(C) Br (D) I
(E) None of these

46. Fuse blows because

- (A) There is high voltage connected across the circuit
(B) There is a high current flowing through the circuit
(C) There is a high charge that has passed through the circuit
(D) The effective resistance of the circuit is too high.
(E) None of these

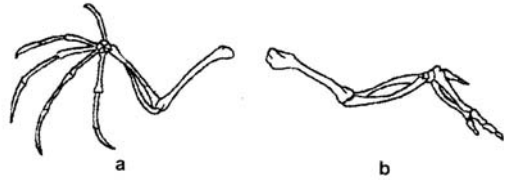
47. Three Identical bulbs are connected to a battery as shown in figure. When the circuit is closed by means of the switch S, it is found that

- (A) R will be bright, but Q and P dim
(B) P, Q and R. all will be equally bright
(C) Q and R will immediately burn out
(D) P will be bright, but Q and R dim
(E) None of these



48. The given figures show the wings of two animals with analogous organs. Identify them.

- (A) Dinosaur and bird
- (B) Bat and insect
- (C) Bat and bird
- (D) Insect and bird
- (E) None of these



49. What does this diagram show?

- (A) Transfer of pollen grains to stigma
- (B) Germination of pollen grains
- (C) Fertilization of gametes
- (D) Development of zygote
- (E) None of these



50. Consider the following table:

From the above data, the decreasing order of reactivity of metals is

Metal	ZnSO ₄ (aq)	FeSO ₄ (aq)	CuSO ₄ (aq)	Al ₂ (SO ₄) ₃ (aq)
Zn	—————	Displaced	Displaced	No reaction
Fe	No reaction	—————	Displaced	No reaction
Cu	No reaction	No reaction	—————	No reaction
Al	Displaced	Displaced	Displaced	—————

- (A) Al > Cu > Fe > Zn
- (B) Al > Zn > Fe > Cu
- (C) Al > Zn > Cu > Fe
- (D) Al > Fe > Cu > Zn
- (E) None of these

Note: The actual Question Paper will translated in Hindi at the time of exam.

Darken your choice with HB Pencil									
1	A B C D E	14	A B C D E	27	A B C D E	40	A B C D E		
2	A B C D E	15	A B C D E	28	A B C D E	41	A B C D E		
3	A B C D E	16	A B C D E	29	A B C D E	42	A B C D E		
4	A B C D E	17	A B C D E	30	A B C D E	43	A B C D E		
5	A B C D E	18	A B C D E	31	A B C D E	44	A B C D E		
6	A B C D E	19	A B C D E	32	A B C D E	45	A B C D E		
7	A B C D E	20	A B C D E	33	A B C D E	46	A B C D E		
8	A B C D E	21	A B C D E	34	A B C D E	47	A B C D E		
9	A B C D E	22	A B C D E	35	A B C D E	48	A B C D E		
10	A B C D E	23	A B C D E	36	A B C D E	49	A B C D E		
11	A B C D E	24	A B C D E	37	A B C D E	50	A B C D E		
12	A B C D E	25	A B C D E	38	A B C D E				
13	A B C D E	26	A B C D E	39	A B C D E				