



CAPF AC PYQ

(SUBJECT WISE)

(Institute for Defence exam)

SUBJECT : SCIENCE

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1. The time elapsed between viewing a lightning flash and hearing the thunder of a cloud is 10 s. If the speeds of sound and light in air are 330 m/s and 3×10^8 m/s respectively, how far away is the storm?

- (a) About 1650 m
- (b) About 3300 m
- (c) About 990 m
- (d) About 1000 m



2. What is the approximate wavelength of violet light in air?

- (a) $0.7 \mu\text{m}$
- (b) $0.6 \mu\text{m}$
- (c) $0.5 \mu\text{m}$
- (d) $0.4 \mu\text{m}$

3. Which electromagnetic radiation(s) is/are used to cook food?

- (a) Infrared radiation only
- (b) Microwave radiation only
- (c) Infrared and microwave radiations
- (d) All electromagnetic radiations

27. Which one of the following metals does **not** react with oxygen, water or acids?

- (a) Na
- (b) Cu
- (c) Fe
- (d) Au

4. An object is placed 10 cm in front of a lens. The image formed is real, inverted and of same size as the object. What is the focal length and nature of the lens?

- (a) 5 cm, converging
- (b) 10 cm, diverging
- (c) 20 cm, converging
- (d) 20 cm, diverging

5. Which one of the following statements with regard to a short-sighted person is correct?

- (a) A short-sighted person sees the near objects blurred but distant objects clearly and a convex lens is used to correct this defect.
- (b) A short-sighted person sees the near objects clearly but distant objects blurred and a concave lens is used to correct this defect.
- (c) A short-sighted person sees the near objects blurred but distant objects clearly and a concave lens is used to correct this defect.
- (d) A short-sighted person sees the near objects clearly but distant objects blurred and a convex lens is used to correct this defect.

6. Which one of the following organelles is **not** found in animal cells?

- (a) Cell membrane
- (b) Endoplasmic reticulum
- (c) Cell wall
- (d) Lysosome



7. Which one of the following plant tissues has large air spaces?

- (a) Sclerenchyma
- (b) Meristem
- (c) Collenchyma
- (d) Aerenchyma



8. Which one of the following is **not** a connective tissue?

- (a) Ligament
- (b) Tendon
- (c) Smooth muscle
- (d) Cartilage

9. Which one of the following organisms belongs to the kingdom Monera?

- (a) Diatom
- (b) Euglena
- (c) Anabaena
- (d) Ulothrix

10. Which one of the following diseases does **not** transmit through fine droplets coming out from mouth or nose of an infected person?

- (a) Pneumonia
- (b) COVID-19
- (c) HIV-AIDS
- (d) Tuberculosis

11. Which one of the following is **not** a breakdown product of glucose during respiration?

- (a) Ethanol
- (b) Lactic acid
- (c) Water
- (d) Methanol

12. Which one of the following is an example of endothermic reaction?

- (a) $\text{CaO(s)} + \text{H}_2\text{O(l)} \rightarrow \text{Ca(OH)}_2\text{(aq)}$
- (b) $\text{CaCO}_3\text{(s)} \rightarrow \text{CaO(s)} + \text{CO}_2\text{(g)}$
- (c) $\text{C(s)} + \text{O}_2\text{(g)} \rightarrow \text{CO}_2\text{(g)}$
- (d) $\text{CH}_4\text{(g)} + 2\text{O}_2\text{(g)} \rightarrow \text{CO}_2\text{(g)} + 2\text{H}_2\text{O(l)}$

13. Packets of potato chips are usually flushed with which one of the following gases to prevent rancidity?

- (a) Carbon dioxide
- (b) Hydrogen
- (c) Nitrogen
- (d) Oxygen



14. According to early Indian philosophers, what are the basic elements described in *Pancha Tattva*?

- (a) Earth, Fire, Sky, Gas and Water
- (b) Air, Earth, Fire, Sky and Water
- (c) Gas, Land, Fire, Sky and Water
- (d) Air, Earth, Fire, Land and Water

15. A milkman adds a small amount of baking soda to milk. This makes the pH of the milk

- (a) strongly alkaline
- (b) weakly alkaline
- (c) strongly acidic
- (d) weakly acidic



16. Which one of the following metal oxides does **not** usually react with sodium hydroxide?

- (a) Copper oxide
- (b) Aluminium oxide
- (c) Potassium oxide
- (d) Calcium oxide

17. When calcium metal reacts with sulphuric acid, the reaction stops after a short while. Why?

- (a) The reaction of calcium with sulphuric acid is not feasible at room temperature
- (b) Formed calcium sulphate is insoluble in water and covers the calcium metal, preventing it from reacting any further
- (c) Formed calcium sulphate requires two molecules of water to crystallize as gypsum
- (d) Formed calcium sulphate is unstable

20. Which one among the following is **not** a luminous object?

- (a) Sun
- (b) Proxima Centauri
- (c) Jupiter
- (d) Alpha Centauri

18. When a white light beam is made to fall on a hollow prism filled with water, it breaks into seven constituent colours. Which of the following colours suffers the maximum angle of deviation?

- (a) Red
- (b) Violet
- (c) Green
- (d) All suffer by equal amount of deviation

19. The following figure shows the image of a clock in a plane mirror :



Which one of the following is the correct time?

- (a) 2:35
- (b) 3:45
- (c) 9:15
- (d) 9:25



23. Which one of the following is **not** a function of chlorophyll?

- (a) Splitting of water
- (b) Absorption of photon
- (c) Oxidation of carbohydrate
- (d) Conversion of light energy into chemical energy

21. Let an electric current of 1.5 A flow through an incandescent lamp in a circuit. What is the amount of charge that flows through it in 10 ms?

- (a) 0.015 C
- (b) 0.15 C
- (c) 1.5 C
- (d) 15 C



22. Which one among the following is **not** a renewable energy source?

- (a) Solar
- (b) Wind
- (c) Nuclear
- (d) Hydroelectric

24. Which one of the following statements about life processes in single-celled organisms is **not** correct?

- (a) They require separate organ for food uptake.
- (b) Separate organ is not needed for respiration.
- (c) Waste of excretory material is produced by these organisms.
- (d) They remain in contact with external environment.

26. Which one of the following pairs is **not** correctly matched?

- (a) Positively phototropic : Shoot
- (b) Positively geotropic : Root
- (c) Chemotropic : Pollen tube
- (d) Hydrotropic : Flower

25. Which one of the following organisms does **not** possess notochord at any stage of its life cycle?

- (a) Holothuria
- (b) Herdmania
- (c) Exocoetus
- (d) Salamander

28. Which one of the following metals produces hydrogen with cold water?

- (a) Silver
- (b) Sodium
- (c) Copper
- (d) Iron

29. Manganese is extracted by heating manganese dioxide with aluminium powder. Which one of the following statements with regard to the reaction is correct?

- (a) The reaction is exothermic.
- (b) The reaction is endothermic.
- (c) Manganese is produced as a solid.
- (d) Manganese is more reactive than aluminium.

30. Which one of the following properties decreases across the periodic table from left to right and increases from top to bottom?

- (a) Ionization energy
- (b) Electron affinity
- (c) Electronegativity
- (d) Atomic radius

