

GENERAL PAPER

INSTRUCTION: From the words lettered A –D choose the appropriate answer

1. Which of the following is not a general characteristic of waves?
A. Diffraction B. Polarization C. Reflection D. Refraction
2. The thermometric substance of an absolute thermometer is:
A. Platinum B. Mercury C. Alcohol D. Helium
3. Which one of the following has the highest specific heat capacity?
A. Water B. Liquid hydrogen C. Copper D. Lead
4. Which of the following sources of energy is non-renewable?
A. Tides B. Solar C. Ocean waves D. Biomass
5. What types of electromagnetic radiation can be used to take photographs in the haze?
A. Radio waves B. Visible rays C. Ultraviolet rays D. Infrared rays

6. The difference in mass number (A) of atoms of the same element is due to a difference in
A. Proton number B. Number of electrons C. Neutron number D. Proton and electron number
7. A man hears his echo from a nearby hill 2 seconds after he shouted. If the frequency of his voice is 260Hz and the wavelength is 1.20m, how far away is the hill?
A. 312m B. 315m C. 335m D. 340m
8. The colour of the positive column in a gas discharge tube is characteristic of the
A. Gas and the coating in the tube B. Pressure of the gas only
C. Temperature of the gas only D. Pressure and potential difference
9. Which of the following pairs of particles each have the same number of electrons as argon?
[Ar: Z = 18]
A. Li and F B. Na⁺ and F C. Na⁺ and Cl⁻ D. K⁺ and Cl⁻
10. A mixture of 0.20 mole of Ar, 0.20mole of Ne and 0.30 mole of He exerts a total pressure of 2.1 atmosphere. What is the partial pressure of He in the mixture.
A. 0.70 atmosphere B. 0.80 atmosphere C. 0.90 atmosphere D. 0.65 atmosphere.
11. The P^{OH} of a solution is 12.23; calculate the hydrogen ion concentration of the solution
A. 1.52×10^{-2} B. 1.69×10^{-2} C. 1.74×10^{-2} D. 1.87×10^{-2}
12. Which of the following is an 'artificial' element?
A. Plutonium B. Lanthanum C. Uranium D. Lutetium
13. One common fraction may be represented ionically by the equation,
$$\text{Ba}^{2+} + \text{SO}_4^{2-} \rightarrow \text{BaSO}_4$$

This occurs during
A. Hydrolysis B. Synthesis C. Thermal association D. Double decomposition
14. White phosphorus is stored under water because it
A. is corrosive B. has a low ignition temperature C. reacts with carbon (IV) oxide D. is hydrolyzed by atmospheric moisture
15. When aluminium tetraoxosulphate (VI) reacts with excess sodium hydroxide, the formula of one of the compounds formed is
A. AlNaO₂ B. Al(OH)₃ C. NaAl(OH)₄ D. Na₃AlO₃
16. An alloy of copper and tin used in electrical contracts is
A. Brass B. Solder C. Bronze D. Type metal
17. Kerosene and petrol (gasoline) are
A. Hydrocarbons, with kerosene having bigger molecules
B. Hydrocarbons with the same size molecules but of different shape
C. Hydrocarbons with petrol having bigger molecules
D. Compounds of carbon and hydrogen, and sulphur for kerosene, but nitrogen for petrol.
18. The preparation of ethoxyethane (C₂H₅OC₂H₅) from ethanol can be considered as
A. Dehydration B. Oxidation reactions
C. Hydrolysis D. Dehydrogenation reactions
19. Which of the following gives the correct formula of the fatty acid present in palm oil?
A. CH₃(CH₂)₁₄COOH B. CH₃(CH₂)₁₆COOH
C. CH₃(CH₂)₁₅COOH D. CH₃(CH₂)₁₇COOH

20. Glycerol had the typical properties of
A. An acid B. A base C. An alcohol D. An ester
21. A certain natural product contains the ester glycerol. palmitate soap can be made from this by
A. passing over activated charcoal B. Boiling with sodium hydroxide C. Mixing with hydrogen D. Heating with glycerine
22. Which of the following is NOT a thermosetting plastic?
A. Terylene products B. Phenol – Methanol products C. Carbamide – methanol products D. Melamine – methanol products
23. The trajectory of a projectile motion is
A. Ellipsoidal B. Trapezoidal C. Parabolic D. Spherical
24. A body accelerates from rest with an acceleration of 8ms^{-2} for 10 seconds. Calculate the distance covered in the 10th second
A. 76m B. 97m C. 324m D. 400m
25. Which of the following infections is unlikely to respond to antibiotics treatment?
A. Tetanus B. Measles C. Typhoid fever D. Ringworm.
26. Pest can be controlled without the subsequent danger of polluting the ecosystem by
A. Spraying the ecosystem with pesticide B. Keeping the population of natural enemies of the pest constant C. increasing the population of natural enemies of the pest D. Eliminating the natural enemies of the pests.
27. Autotrophs are also described as
A. Consumers B. Carnivores C. Producers D. Decomposers
28. Which of the following bones is NOT a component of the appendicular skeleton?
A. Tibia B. Sacrum C. Radius D. Humerus
29. If two parents are sickle cell carriers then their genotypes would be
A. $\text{Hb}^A \text{Hb}^A$ and $\text{Hb}^A \text{Hb}^A$ B. $\text{Hb}^S \text{Hb}^S$ and $\text{Hb}^S \text{Hb}^S$ C. $\text{Hb}^A \text{Hb}^A$ and $\text{Hb}^S \text{Hb}^S$ D. $\text{Hb}^A \text{Hb}^S$ and $\text{Hb}^A \text{Hb}^S$
30. Prokaryotic cells are found in
A. Monerons B. Algae C. Tracheophytes D. Spirogyra
31. The correct order of classification of human being is
A. Animalia, Chordata, Vertebrata, Mammalia, Primate, Hominidae, Homo and Sapiens
B. Animalia, Vertebrata, Mammalia, Chordate, Primate, Homo, Sapiens and Hominidae. ✗
C. Chordata, Animalia, Vertebrata, Mammalia, Primate, Hominidae, Homo and Sapiens ✗
D. Animalia, Chordata, Vertebrata, Primate, Mammalia, Homo and Sapiens
32. Deficiency of sulphur causes
A. Poor, weedy growth B. Extremely stunted growth C. Yellowing of leaves, stems becomes slender D. Weak stunted growth.
33. Vitamin K is important in the
A. Formation of enzymes involved in synthesis of amino acids B. Formation of red blood cells C. Synthesis of blood clotting factors D. Formation of co-enzymes involved in cellular respiration
34. The following are the components of nucleotides except

A. A five-carbon sugar B. A six-carbon sugar C. A phosphate group D. An organic nitrogen-containing.

35. Which of the following inherited conditions usually shows incomplete dominance?
A. Baldness B. Tongue rolling ability C. Haemophilia D. Sickle cell anaemia

36. Which of the following is not a theory under Darwin's theory of organic evolution?
A. Over production B. Struggle for existence C. Mutation D. Offspring show variations

37. Which of the following does not cause mutation?
A. X-rays B. Mutant C. Ultra-violet light D. Cosmic radiation.

38. Which of the following organisms has homodont dentition?
A. Lizard B. Sheep C. Cat D. Man

39. Which of the following habitats cannot be used for the study of succession?
A. a pond B. Savanna grassland C. Well cultivated land D. Abandoned farm land.

40. Which of the following statements is/are correct
(i) One mole of sodium atoms contain 6.02×10^{23} atoms and weight 23g (ii) One mole of magnesium atoms contains 6.02×10^{23} atoms and weighs 24g (iii) One mole of oxygen atoms contains 6.02×10^{23} atoms and weighs 16g.
(a) I and II (b) II and III (c) I and III (d) I, II and III.