

10TH SCIENCE ACHIEVEMENT TEST-3 (2024-25)

Time: 60 Minutes

Total Marks: 50

Note: Answer ALL the questions.

- 1) Inertia of a body depends on
a) weight of the object b) acceleration due to gravity of the planet c) mass of the object d) Both a & b
2. Newton's III law is applicable
a) for a body is at rest b) for a body in motion c) both a & b d) only for bodies with equal masses
3. Power of a lens is $-4D$, then its focal length is
a) 4m b) $-40m$ c) $-0.25m$ d) $-2.5m$
4. In a myopic eye, the image of the object is formed
a) behind the retina b) on the retina c) in front of the retina d) on the blind spot
5. The value of universal gas constant
a) $3.81 \text{ Jmol}^{-1} \text{ K}^{-1}$ b) $8.03 \text{ Jmol}^{-1} \text{ K}^{-1}$ c) $1.38 \text{ Jmol}^{-1} \text{ K}^{-1}$ d) $8.31 \text{ Jmol}^{-1} \text{ K}^{-1}$
6. Temperature is the average _____ of the molecules of a substance
a) difference in K.E and P.E b) sum of P.E and K.E
c) difference in T.E and P.E d) difference in K.E and T.E
7. Which of the following is correct?
a) Rate of change of charge is electrical power. b) Rate of change of charge is current.
c) Rate of change of energy is current. d) Rate of change of current is charge.
8. Kilowatt hour is the unit of
a) resistivity b) conductivity c) electrical energy d) electrical power
9. When a sound wave travels through air, the air particles
a) vibrate along the direction of the wave motion b) vibrate but not in any fixed direction
c) vibrate perpendicular to the direction of the wave motion d) do not vibrate
10. Velocity of sound in a gaseous medium is 330 ms^{-1} . If the pressure is increased by 4 times without causing a change in the temperature, the velocity of sound in the gas is
a) 330 ms^{-1} b) 660 ms^{-1} c) 156 ms^{-1} d) 990 ms^{-1}
11. Unit of radioactivity is _____
a. roentgen b. curie c. becquerel d. all the above
12. In the nuclear reaction ${}_6X^{12} \xrightarrow{\text{decay}} {}_Z Y^A$, the value of A & Z.
a. 8, 6 b. 8, 4 c. 4, 8 d. cannot be determined with the given data
13. Which of the following is a triatomic molecule?
(a) Glucose (b) Helium (c) Carbon dioxide (d) Hydrogen.
14. In the nucleus of ${}_{20}\text{Ca}^{40}$, there are
(a) 20 protons and 40 neutrons (b) 20 protons and 20 neutrons
(c) 20 protons and 40 electrons (d) 40 protons and 20 electrons
15. The basis of modern periodic law is _____.
(a) atomic number (b) atomic mass (c) isotopic mass (d) number of neutrons.
16. In the aluminothermic process the role of Al is:
(a) oxidizing agent (b) reducing agent (c) hydrogenating agent (d) sulphurising agent
17. Which of the following inert gas has electrons in the outermost shell?
(a) He (b) Ne (c) Ar (d) Kr
18. Identify the non aqueous solution
a) sodium chloride in water b) glucose in water c) copper sulphate in water d) sulphur in carbon-di-sulphide.
19. Which of the following is hygroscopic in nature?
a) ferric chloride b) copper sulphate penta hydrate c) silica gel d) none of the above
20. A single displacement reaction is represented by $X(s) + 2HCl(aq) \rightarrow XCl_2(aq) + H_2(g)$. the following(s) could be X?
(i) Zn (ii) Ag (iii) Cu (iv) Mg. Choose the best pair.
(a) i and ii (b) ii and iii (c) iii and iv (d) i and iv
21. Which of the following represents a precipitation reaction?
(a) $A_{(s)} + B_{(s)} \rightarrow C_{(s)} + D_{(s)}$ (b) $A_{(s)} + B_{(aq)} \rightarrow C_{(aq)} + D_{(l)}$
(c) $A_{(aq)} + B_{(aq)} \rightarrow C_{(s)} + D_{(aq)}$ (d) $A_{(aq)} + B_{(s)} \rightarrow C_{(aq)} + D_{(l)}$
22. The molecular formula of an open-chain organic compound is C_3H_6 . The class of the compound is:
(a) alkane (b) alkene (c) alkyne (d) alcohol
23. Which of the following are used as anaesthetics?
(a) Carboxylic acids (b) Ethers (c) Esters (d) Aldehydes
24. TFM in soaps represents _____ content in soap.
(a) mineral (b) vitamin (c) fatty acid (d) carbohydrate.

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NEW INDIA MARK

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10 Science EMP - 1

25. Casparian strips are present in the _____ of the root.
a) cortex b) pith c) pericycle d) endodermis
26. Oxygen is produced at what point during photosynthesis?
a) when ATP is converted to ADP b) when CO₂ is fixed
c) when H₂O is splitted d) All of these
27. The segments of leech are known as
a) Metameres (somites) b) Proglottids c) Strobila d) All the above
28. Pharyngeal ganglion in leech is a part of
a) Excretory system b) Nervous system c) Reproductive system d) Respiratory system
29. Water which is absorbed by roots is transported to aerial parts of the plant through
a) cortex b) epidermis c) phloem d) xylem
30. Which one of the following shows correct composition of blood
a) Plasma - Blood + Lymphocyte b) Serum - Blood + Fibrinogen
c) Lymph - Plasma + RBC + WBC d) Blood - Plasma + RBC + WBC + Platelets
31. In reflex action, the reflex arc is formed by
(a) brain, spinal cord, muscle (b) receptor, muscle, spinal cord
(c) muscle, receptor, brain (d) receptor, spinal cord, muscle
32. Nerve cells do not possess
(a) neurilemma (b) sarcolemma (c) axon (d) dendrites
33. The hormone which has positive effect on apical dominance is:
a) Cytokinin b) Auxin c) Gibberellin d) Ethylene
34. Which organ acts as both exocrine gland as well as endocrine gland
a) Pancreas b) Kidney c) Liver d) Lungs
35. Asexual reproduction takes place through budding in _____
a) Amoeba b) Yeast c) Plasmodium d) Bacteria
36. Estrogen is secreted by
a) Anterior pituitary b) Primary follicle c) Graffian follicle d) Corpus luteum
37. The region of the chromosome where the spindle fibres get attached during cell division
a) Chromomere b) Centrosome c) Centromere d) Chromonema
38. The _____ units form the backbone of the DNA.
a) 5 carbon sugar b) Phosphate c) Nitrogenous bases d) Sugar phosphate
39. The term Ethnobotany was coined by
a. Khorana b. J.W. Harsberger c. Ronald Ross d. Hugo de Vries
40. The 'use and disuse theory' was proposed by _____
a. Charles Darwin b. Ernst Haeckel c. Jean Baptiste Lamarck d. Gregor Mendel
41. The miracle rice which saved millions of lives and celebrated its 50th birthday is _____
a. IR 8 b. IR 24 c. Atomita 2 d. Ponni
42. rDNA is a
a. vector DNA b. circular DNA c. recombinant of vector DNA and desired DNA d. satellite DNA
43. Polyphagia is a condition seen in
a) Obesity b) Diabetes mellitus c) Diabetes insipidus d) AIDS
44. A renewable source of energy is
a) petroleum b) coal c) nuclear fuel d) trees
45. Green house effect refers to
a) cooling of earth b) trapping of UV rays c) cultivation of plants d) warming of earth
46. Which software is used to create animation?
a) Paint b) PDF c) MS Word d) Scratch
47. Which is used to build scripts?
a) Script area b) Block palette c) stage d) sprite
48. Which of the following statements is wrong about detergents?
(a) It is a sodium salt of long chain fatty acids (b) It is sodium salts of sulphonic acids
(c) The ionic part in a detergent is - SO₃⁻ Na⁺ (d) It is effective even in hard water.
49. The refractive index of four substances A, B, C and D are 1.31, 1.43, 1.33, 2.4 respectively. The speed of light is maximum in
a) A b) B c) C d) D
50. A person who met with an accident lost control of body temperature, water balance, and hunger. Which of the following part of brain is supposed to be damaged?
(a) Medulla oblongata (b) cerebrum (c) pons (d) hypothalamus