



10 - Std

ACHIEVEMENT TEST - 2023 - 2024

Time : 1.30 Hrs

SCIENCE

[Max. Marks : 100]

1. Velocity of sound in a gaseous medium is 330ms^{-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) 330ms^{-1} b) 660ms^{-1} c) 156ms^{-1} d) 990ms^{-1}
2. The frequency, which is audible to the human ear is
a) 50kHz b) 20kHz c) 15000kHz d) 10000kHz
3. If a sound wave travels with a frequency of $1.25 \times 10^4\text{Hz}$ at 344ms^{-1} , the wavelength will be
a) 27.52m b) 275.2m c) 0.02752m d) 2.752m
4. The sound waves are reflected from an obstacle into the same medium from which they were incident. Which of the following changes?
a) speed b) frequency c) wavelength d) none of these
5. Velocity of sound in the atmosphere of a planet is 500ms^{-1} . The minimum distance between the sources of sound and the obstacle to hear the echo, should be
a) 17m b) 20m c) 25m d) 50m
6. Rapid back and forth motion of particle about its mean position is called _____
a) Longitudinal waves b) Transverse waves c) Electromagnetic waves d) Light waves
7. If the energy is a longitudinal wave travels from south to north, the particles of the medium would be vibrating in _____
a) West, East b) South, North c) East, West d) North, South
8. High Pressure region is _____
a) Rarefaction b) compression c) frequency d) speed
9. Sound waves are _____
a) Longitudinal waves b) Transverse waves c) a and b d) None of these
10. Low frequency sound waves are calls _____
a) Infrasonic waves b) Ultrasonic waves c) Audible waves d) None of these
11. The frequency of the sound that the bat can hear
a) $< 20,000\text{Hz}$ b) $= 20,000\text{Hz}$ c) 2000Hz d) $> 20,000\text{Hz}$
12. Light waves are
a) transverse waves b) a medium is required c) a and b d) 340ms^{-1}
13. Speed of sound in iron
a) 5950ms^{-1} b) 1950ms^{-1} c) 9540ms^{-1} d) 595ms^{-1}
14. Unit of radioactivity is _____
a) roentgen b) curie c) bacquerel d) all the above
15. Artificial radioactivity was discovered by
a) Bequerel b) Irene curie c) Roentgen d) Neils Bohr
16. _____ isotope is used for the treatment of cancer.
a) Radio Iodine b) Radio Cobalt c) Radio Carbon d) Radio Nickel
17. Gamma radiations are dangerous because
a) it affects eyes and bones b) it affects tissues c) it produces genetic disorder d) it produces enormous amount of heat
18. _____ aprons are used to protect us from gamma radiations.
a) Lead Oxide b) Iron c) Lead d) Aluminium
19. Proton - Proton chain reaction is an example of _____
a) Nuclear fission b) α -decay c) Nuclear fission d) β -decay
20. Kamini reactor is located at _____
a) Kalpakkam b) Koodankulam c) Mumbai d) Rajasthan
21. Anemia can be cured by _____ isotope
a) Phosphorous - 32 b) Cobalt - 60 c) Iron - 59 d) Sodium - 24
22. _____ is used to measure exposure rate of radiation in humans.
a) Dosimeter b) ammeter c) Voltmeter d) barometer
23. The Principle of atom bomb explosion
a) Nuclear fission b) nuclear fusion c) Scattering d) heating
24. In a _____ decay, only the energy level of the nucleus changes
a) beta decay b) alpha decay c) gamma decay d) all the above

25. The radioactive materials should be handled only by
 a) remote control device b) tongs c) a and b d) water
26. Photolysis is a decomposition reaction caused by
 a) heat b) electricity c) light d) mechanical energy
- The chemical equation.

$$\text{Na}_2\text{SO}_{4(aq)} + \text{BaCl}_{2(aq)} \rightarrow \text{BaSO}_{4(s)} \downarrow + 2 \text{NaCl}_{(aq)}$$
27. $\text{Na}_2\text{SO}_{4(aq)} + \text{BaCl}_{2(aq)} \rightarrow \text{BaSO}_{4(s)} \downarrow + 2 \text{NaCl}_{(aq)}$ represents which of the following types of reaction?
 a) Neutralisation b) Combustion c) Precipitation d) Single displacement
28. The pH of a solution is 3. Its $[\text{OH}^-]$ concentration is
 a) $1 \times 10^{-3} \text{ M}$ b) 3 M c) $1 \times 10^{-11} \text{ M}$ d) 11 M
29. Powdered CaCO_3 reacts more rapidly than lumpy CaCO_3 because of
 a) large surface area b) high pressure c) high concentration d) high temperature
30. When lithium metal is placed in hydrochloric acid, ----- gas is evolved
 a) Nitrogen b) Oxygen c) Hydrogen d) Carbon dioxide
31. The value of ionic product of water at 25°C is -----
 a) 1.00×10^{-14} b) 1.0×10^{-20} c) 2.4×10^{-14} d) 2.5×10^{-14}
32. The normal pH of human blood is
 a) 4.35-4.45 b) 6.45 - 6.55 c) 8.35 - 8.45 d) 7.35 - 7.45
33. Decomposition reactions occur depending on the nature of the following energies?
 a) heat b) light c) electric d) all these
34. Which of the following metal gives hydrogen when placed in hydrochloric acid?
 a) zinc b) silver c) copper d) gold
35. Which of the following affects reaction rate?
 a) surface area b) Pressure c) temperature d) all these
36. Color of solution obtained by dissolving copper Sulphate in water
 a) Colourless b) Blue c) Green d) Brown
37. 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
38. The secondary suffix used in IUPAC nomenclature of an aldehyde is -----
 a) -ol b) -oic acid c) -al d) -one
39. Rectified spirit is an aqueous solution which contains about ----- of ethanol.
 a) 95.5% b) 75.5% c) 55.5% d) 45.5%
40. Which of the following are used as anaesthetics?
 a) Carboxylic acids b) Ethers c) Esters d) Aldehydes
41. TFM in soaps represents ----- content in soap
 a) mineral b) vitamin c) fatty acid d) carbohydrate
42. The general molecular formula of alkynes is -----
 a) $\text{C}_n\text{H}_{2n-2}$ b) $\text{C}_n\text{H}_{2n+2}$ c) C_nH_{2n} d) C_nH_{n-1}
43. Dehydration of ethanol by conc. Sulphuric acid forms -----
 a) Ethane b) ethyne c) ethene d) propane
44. Cyclobutane is an example of the following compound
 a) cyclic b) acyclic c) aromatic d) alicyclic
45. Find the ketone in the following
 a) CH_3COCH_3 b) CH_3CHO c) CH_3COOH d) $\text{CH}_3\text{COOCH}_3$
46. The enzymes present in yeast
 a) invertase b) zymase c) a and b d) none of these
47. Salts found in hard water -----
 a) Ca, Mg b) Fe, Ca c) Cu, Fe d) Cu, Ca
48. The product formed when ethanol reacts with sodium
 a) sodium acetate b) sodium ethanate c) sodium ethoxide d) sodium phosphate
49. The acid present in vinegar -----
 a) methanoic b) ethanoic c) Propanic d) butanoic
50. Fatty acids with a long chain structure are called -----
 a) Vinegar b) detergent c) Soap d) b and c
51. Biogenetic law states that -----
 a) Ontogeny and Phylogeny go together b) Ontogeny recapitulates phylogeny
 c) Phylogeny recapitulates ontogeny d) There is no relationship between

- 52. The 'use and disuse theory' was proposed by Jean Baptiste Lamarck Gregor Mendel
 - a) Charles Darwin
 - b) Ernst Haeckel
- 53. Paleontologists deal with Fossil evidences
 - a) Embryological evidences
 - b) Vestigial organ evidences
 - c) All the above
 - d) None of the above
- 54. The best way of direct dating fossils of recent origin is by Radio-carbon method
 - a) Potassium - argon method
 - b) Uranium lead method
 - c) Both (a) and (b)
 - d) None of the above
- 55. The term Ethnobotany was coined by J.W.Harsberger
 - a) Khorana
 - b) Ronald Ross
 - c) Hugo de Vries
 - d) None of the above
- 56. Which method of crop improvement can be practised by a farmer if he is inexperienced? Mass selection
 - a) Clonal selection
 - b) Pureline selection
 - c) hybridisation
 - d) None of the above
- 57. Pusa Komal is a disease resistant variety of Cow pea
 - a) Sugarcane
 - b) rice
 - c) maize
 - d) None of the above
- 58. Himgiri developed by hybridisation and selection for disease resistance against rust pathogens is a variety of wheat
 - a) Chilli
 - b) maize
 - c) Sugarcane
 - d) None of the above
- 59. The miracle rice which saved millions of lives and celebrated its 50th birthday is IR 8
 - a) IR 24
 - b) Atomita 2
 - c) Ponni
 - d) None of the above
- 60. Which of the following is used to produce products useful to humans by biotechnology techniques? both (a) and (b)
 - a) enzyme from organism
 - b) Vitamins
 - c) live organism
 - d) None of the above
- 61. We can cut the DNA with the help of restriction endonucleases
 - a) Scissors
 - b) RNA ase
 - c) Knife
 - d) None of the above
- 62. rDNA is a recombinant of vector DNA and desired DNA
 - a) Vector DNA
 - b) Circular DNA
 - c) Satellite DNA
 - d) None of the above
- 63. DNA fingerprinting is based on the Principle of identifying _____ sequences of DNA repetitive
 - a) Single stranded
 - b) mutated
 - c) Polymorphic
 - d) None of the above
- 64. Organisms with modified endogenous gene or a foreign gene are also known as both a and b
 - a) transgenic organisms
 - b) genetically modified
 - c) mutated
 - d) None of the above
- 65. In a hexaploid wheat ($2n=6x=42$) the haploid (n) and the basic (x) number of chromosomes respectively are n = 21 and x = 7
 - a) n=7 and x=21
 - b) n = 21 and x = 21
 - c) n = 7 and x = 7
 - d) None of the above
- 66. Tobacco consumption is known to stimulate secretion of adrenaline. The component causing this could be Nicotine
 - a) Tannic acid
 - b) Curcumin
 - c) Leptin
 - d) None of the above
- 67. World 'No Tobacco DAY' is observed on May 31
 - a) June 6
 - b) April 22
 - c) October 2
 - d) None of the above
- 68. Cancer cells are more easily damaged by radiations than normal cells because they are Undergoing rapid division
 - a) Different in structure
 - b) Mutated Cells
 - c) Non - dividing
 - d) None of the above
- 69. Which type of cancer affects lymph nodes and spleen? Lymphoma
 - a) Carcinoma
 - b) Sarcoma
 - c) Leukemia
 - d) None of the above
- 70. Excessive consumption of alcohol leads to Cirrhosis of liver
 - a) Loss of memory
 - b) Suppression of brain function
 - c) State of hallucination
 - d) None of the above
- 71. Coronary heart disease is due to Insufficient blood supply to heart muscles
 - a) Streptococci bacteria
 - b) Inflammation of pericardium
 - c) Weakening of heart valves
 - d) None of the above
- 72. Cancer of the epithelial cells is called Carcinoma
 - a) Leukemia
 - b) Sarcoma
 - c) Lipoma
 - d) None of the above
- 73. Metastasis is associated with Malignant tumour
 - a) Benign tumour
 - b) Both (a) and (b)
 - c) Crown gall tumour
 - d) None of the above
- 74. Polyphagia is a condition seen in Diabetes mellitus
 - a) Obesity
 - b) Diabetes insipidus
 - c) AIDS
 - d) None of the above
- 75. Where does alcohol effect immediately after drinking? Central nervous system
 - a) Eyes
 - b) Auditory region
 - c) Liver
 - d) None of the above
- 76. Which of the following is / are a fossil fuel? i, ii and iii
 - a) i only
 - b) i and ii
 - c) ii and iii
 - d) None of the above

77. What are the steps will you adopt for better waste management?
 a) reduce the amount of waste formed
 b) reuse the waste
 c) recycle the waste
 d) all of the above
78. The gas released from vehicles exhaust are
 i) Carbon monoxide ii) Sulphur dioxide iii) Oxides of nitrogen
 a) i and ii b) i and iii c) ii and iii d) i, ii and iii
79. Soil erosion can be prevented by
 a) deforestation b) afforestation c) over growing d) removal of vegetation
80. A renewable source of energy is
 a) petroleum b) Coal c) nuclear fuel d) trees
81. Soil erosion is more where there is
 a) no rain fall b) low rainfall c) rain fall is high d) none of these
82. An inexhaustible resources is
 a) wind power b) soil fertility c) wild life d) all of the above
83. Common energy source in village is
 a) Electricity b) Coal c) biogas d) Wood and animal dung
84. Green house effect refers to
 a) Cooling of earth b) Cultivation of plants
 c) trapping of UV rays d) warming of earth
85. A cheap, conventional, commercial and inexhaustible source of energy is
 a) hydropower b) Solar energy c) wind energy d) thermal energy
86. Global warming will cause
 a) raise in level of oceans b) melting of glaciers
 c) sinking of islands d) all of these
87. Which of the following statement is wrong with respect to wind energy
 a) wind energy is a renewable energy
 b) the blades of wind mill are operated with the help of electric motor
 c) Production of wind energy is pollution free
 d) Usage of wind energy can reduce the consumption of fossil fuels
88. Which software is used to create animation?
 a) Paint b) PDF c) MS Word d) Scratch
89. All files are stored in the _____
 a) Folder b) Box c) Pai d) Scanner
90. Which is used to build scripts?
 a) Script area b) Block palette c) Stage d) sprite
91. Which is used to edit programs?
 a) Inkscape b) Script editor c) Stage d) Sprite
92. Where you will create category of blocks?
 a) Block palette b) Block menu c) Script area d) Sprite
93. Biogenesis was speculated by _____
 a) Haldane b) Pasteur c) Drawin d) Lamarck
94. _____ is called the Father of Paleontology
 a) Pasteur b) Birbal Sahani c) Haeckel d) Lenonardo da Vinci
95. The process of formation of fossils in the rocks is called _____
 a) Calcification b) Crystallization c) Petrification d) fossilization
96. The international Rice Research Institute is located at _____
 a) Nephel b) Mexico c) Philippines d) China
97. Blood clotting factors produced by biotechnology helps patients suffering from _____
 a) Hemophilia b) Homeostasis c) cerebral palsy d) AIDS
98. _____ is the father of "Indian Green Revolution".
 a) Dr.M.S.Swami Nathan b) Dr.Norman
 c) Alec Jeffrey d) Dr.Ian Willmut
99. World AIDS day is observed on _____
 a) 1st December b) 15th December c) 24th November d) 5th December
100. Excess hunger is called _____
 a) Polyphagia b) Polydipsia c) Polyuria d) Glycosuria