

10 - Std

Time : 1.30 Hrs

ACHIEVEMENT TEST - 2023 - 2024

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) 50 kHz
 - b) 20 kHz
 - c) 15000 kHz
 - d) 10000 kHz
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) 27.52 m
 - b) 275.2m
 - c) 0.02752 m
 - d) 2.752 m
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) 17 m
 - b) 20 m
 - c) 25 m
 - d) 50 m
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) 2000 Hz
 - 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.

$$\text{Na}_2\text{SO}_4(\text{aq}) + \text{BaCl}_2(\text{aq}) \rightarrow \text{BaSO}_4(\text{s}) \downarrow + 2 \text{NaCl}(\text{aq})$$
 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 [OH⁻] concentration is
 a) 1×10^{-3} M b) 3 M c) 1×10^{-11} M d) 11 M
29. Powdered CaCO₃ reacts more rapidly than lumpy CaCO₃ 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 C₃H₆. 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) C_nH_{2n-2} b) C_nH_{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) CH₃COCH₃ b) CH₃CHO c) CH₃COOH d) CH₃COOCH₃
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 -----
 a) Charles Darwin b) Ernst Haeckel c) Jean Baptiste Lamarck d) Gregor Mendel
53. Paleontologists deal with
 a) Embryological evidences b) Fossil evidences
 c) Vestigial organ evidences d) All the above
54. The best way of direct dating fossils of recent origin is by
 a) Radio- carbon method b) Uranium lead method
 c) Potassium - argon method d) Both (a) and (c)
55. The term Ethnobotany was coined by
 a) Khorana b) J.W.Harsberger c) Ronald Ross d) Hugo de Vries
56. Which method of crop improvement can be practised by a farmer if he is inexperienced?
 a) Clonal selection b) Mass selection c) Pureline selection d) hybridisation
57. Pusa Komal is a disease resistant variety of -----
 a) Sugarcane b) rice c) Cow pea d) maize
58. Himgiri developed by hybridisation and selection for disease resistance against rust pathogens is a variety of -----
 a) Chilli b) maize c) Sugarcane d) wheat
59. The miracle rice which saved millions of lives and celebrated its 50th birthday is -----
 a) IR 8 b) IR 24 c) Atomita 2 d) Ponní
60. Which of the following is used to produce products useful to humans by biotechnology techniques?
 a) enzyme from organism b) Vitamins c) live organism d) both (a) and (b)
61. We can cut the DNA with the help of
 a) Scissors b) restriction endonucleases
 c) Knife d) RNA ase
62. rDNA is a
 a) recombinant of vector DNA and desired DNA b) Circular DNA
 c) Vector DNA d) Satellite DNA
63. DNA fingerprinting is based on the Principle of Identifying ----- sequences of DNA
 a) Single stranded b) mutated c) Polymorphic d) repetitive
64. Organisms with modified endogenous gene or a foreign gene are also known as
 a) transgenic organisms b) genetically modified c) mutated d) both a and b
65. In a hexaploid wheat ($2n=6x=42$) the haploid (n) and the basic (x) number of chromosomes respectively are
 a) $n=7$ and $x=21$ b) $n=21$ and $x=21$ c) $n=7$ and $x=7$ d) $n=21$ and $x=7$
66. Tobacco consumption is known to stimulate secretion of adrenaline. The component causing this could be
 a) Nicotine b) Tannic acid c) Curcumin d) Leptin
67. World 'No Tobacco Day' is observed on
 a) May 31 b) June 6 c) April 22 d) October 2
68. Cancer cells are more easily damaged by radiations than normal cells because they are
 a) Different in structure b) Mutated Cells c) Non - dividing d) Undergoing rapid division
69. Which type of cancer affects lymph nodes and spleen?
 a) Carcinoma b) Sarcoma c) Leukemia d) Lymphoma
70. Excessive consumption of alcohol leads to
 a) Loss of memory b) Cirrhosis of liver
 c) State of hallucination d) Suppression of brain function
71. Coronary heart disease is due to
 a) Streptococci bacteria b) Inflammation of pericardium
 c) Weakening of heart valves d) Insufficient blood supply to heart muscles
72. Cancer of the epithelial cells is called
 a) Leukemia b) Sarcoma c) Carcinoma d) Lipoma
73. Metastasis is associated with
 a) Malignant tumour b) Benign tumour c) Both (a) and (b) d) Crown gall tumour
74. Polyphagia is a condition seen in
 a) Obesity b) Diabetes mellitus c) Diabetes insipidus d) AIDS
75. Where does alcohol effect immediately after drinking?
 a) Eyes b) Auditory region c) Liver d) Central nervous system
76. Which of the following is / are a fossil fuel? i. Tar ii. Coal iii. Petroleum
 a) i only b) i and ii c) ii and iii d) i, ii and iii

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 interanational 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 Wilmut
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