



RAMAN SPACE MANTHAN

2025-26

Standard:- X

Name:- _____

Std:- _____

Roll no:- _____

School Name:- _____

INSTRUCTIONS

- There will be 3 sections
- Physics: 40 Questions
- Chemistry: 30 Questions
- Biology: 30 Questions
- Total questions 100 each carries 4 mark.
- There is a negative marking as -1
- Total exam time 2 hour.
- Don't mark anything on the question paper



PHYSICS

1. Law of gravitation gives the gravitation force between _____.
 - A. The earth and a point mass only
 - B. The earth and Sun only
 - C. Any two bodies having some mass
 - D. Two charged bodies only
2. The force of attraction between two unit point masses separated by a unit distance equal
 - A. Gravitational potential.
 - B. Acceleration due to gravity
 - C. Gravitational field
 - D. Universal gravitational constant
3. A body is whirling a stone tied to a string in a horizontal circular path. If the string breaks, the stone
 - A. Will move along a straight line towards the centre of the circular path.
 - B. Will move along a straight line perpendicular to the circular path away from the boy.
 - C. Will move along a straight line tangential to the circular path.
 - D. Will continue to move in circular path.
4. What is the gravitational potential energy of an object located 20,000 m above the earth's surface?
 - A. $U = -GMm / (20 \text{ km} + R_E)$
 - B. $U = -GMm / (20,000 \text{ km} + R_E)$
 - C. $U = -GMm / R_E$
 - D. $U = -GMm / (R_E - 20 \text{ km})$
5. According to Newton's law of motion, higher the mass _____ is the inertia.
 - A. Lower
 - B. higher
 - C. zero
 - D. double
6. A cylinder conductor of length l and uniform area of cross-section A has resistance R . Another conductor of length $2l$ and resistance R of the same material must have area of cross-section
 - A. $A / 2$
 - B. $3A / 2$
 - C. $2A$
 - D. $3A$
7. A current of 1A is drawn by a filament of an electric bulb. Number of electrons passing through a cross-section of the filament in 16 seconds would be roughly
 - A. 10^{20}
 - B. 10^{16}
 - C. 10^{18}
 - D. 10^{23}

8. Out of the three bulbs: 24 W, 60 W and 100 W, which bulb has least resistance?
- A. 25 W bulb C. 100 W bulb
B. 60 W bulb D. All bulbs have equal resistance
9. In an electrical circuit two resistors $2\ \Omega$ and $4\ \Omega$ respectively are connected in series to a 6V battery. The heat dissipated by the $4\ \Omega$ resistor in 5s will be
- A. 5 J B. 10 J C. 20 J D. 30 J
10. Assertion (A): Tungsten metal is used for making filaments of incandescent lamps.
Reason (R) : The melting point of tungsten is very low.
- A. Both true, Reason is correct explanation
B. Both true, Reason is NOT correct explanation
C. Assertion true, Reason false
D. Assertion false, Reason true
11. The direction of the force on a current carrying wire placed in a magnetic field depends on
- A. The direction of the current but not on the direction of the field
B. The direction of the field but not on the direction of the current
C. The direction of the current as well as the direction of the field
D. Neither the direction of the current nor the direction of the field
12. Commercial electric motors do not use
- A. An electromagnet to rotate the armature
B. Effectively large number of turns of connecting it to a battery
C. By connecting it to a battery as well as moving a magnet near it
D. Neither by connecting it to battery nor by moving a magnet near it
13. According to international convention of colour coding in a wire
- A. Live is red, neutral is black and earth is green
B. Live is brown, neutral is blue and earth is green
C. Live is brown, neutral is green and earth is black
D. Live is red, neutral is yellow and earth is blue
14. Choose the incorrect statement.
- A. Fleming's right-hand rule is a simple rule to know the direction of induced current.
B. The right-hand thumb rule is used to find the direction of magnetic field due to current carrying conductors.
C. The difference between the direction and alternating currents is that the direction current always flow in one direction whereas the alternating current reverse the direction periodically.
D. In India the ac changes direction after every $1/50$ second

23. Choose the correct statement.
- A. Sun can be taken as an inexhaustible source of energy.
 - B. There is infinite storage of fossil fuel inside the Earth
 - C. Hydro and wind energy plants are non polluting sources of energy
 - D. Waste from a nuclear power plant can be easily disposed off.
24. The main constituent of biogas is
- A. Methane
 - B. carbon dioxide
 - C. hydrogen
 - D. hydrogen sulphide
25. Assertion (A): solar energy, wind energy and hydro energy are considered to be exhaustible source of energy.
Reason (R): the rate of depletion of these energy sources, because of extraction of usable energy, is practically negligible.
- A. both A and R are true and R is correct explanation of A.
 - B. both A and R are true but R is not the correct explanation of A.
 - C. A is true but R is false.
 - D. A is false but R is true.
26. An object is placed at a distance of 30 cm from a convex mirror of focal length 15 cm. the image formed is
- A. 20 cm from the pole
 - B. -10 cm from the pole
 - C. +10 cm from the pole
 - D. +60 cm from the pole
27. The focal length, $f = R/2$ is valid
- A. for convex mirror but not for concave mirror
 - B. for concave mirror but not for convex mirror
 - C. for both convex and concave mirror
 - D. neither for convex mirror nor for concave mirror
28. A man runs towards the plane mirror at 2 ms^{-1} . The relative speed of his image with respect to him will be
- A. 2 ms^{-1}
 - B. 4 ms^{-1}
 - C. 8 ms^{-1}
 - D. 10 ms^{-1}
29. A fuse wire is a wire of
- A. low resistance and low melting point
 - B. high resistance and low melting point
 - C. low resistance and high melting point
 - D. high resistance and high melting point
30. The resistivity does not change if
- A. the material is changed
 - B. the temperature is changed
 - C. the shape of the resistor is changed
 - D. both material and temperature are changed

31. Two resistors of resistances 2Ω and 4Ω when connected with a battery will have
- A. same current flowing through them when connected in parallel.
 - B. same current flowing through them when connected in series.
 - C. same potential difference across them when connected in series.
 - D. different potential differences when connected in parallel.
32. Which part of the solar cooker is responsible for green house effect?
- A. coating with black colour inside the box
 - B. mirror
 - C. glass sheet
 - D. outer cover of the solar cooker
33. In a hydroelectric power plant more electrical power can be generated if water falls from a greater height because
- A. its temperature increases
 - B. larger amount of potential energy is converted into kinetic energy
 - C. the electricity content of water increases with height
 - D. more water molecules dissociate into ions
34. Assertion (A): Thermal power plants are set up near coal or gas fields.
Reason (R): Transmission of electric power is more efficient, convenient and economical than transportation of fossil fuels like coal or natural gas.
- A. both A and R are true and R is correct explanation of A.
 - B. both A and R are true but R is not the correct explanation of A.
 - C. A is true but R is false.
 - D. A is false but R is true.
35. The pH of water sample collected from a river was found to be acidic in the range of 3.5 – 4.5, on the banks of the river were several factories that were discharging effluents into the river. The effluents of which one of the following factories is the most likely cause for lowering the pH of river water?
- A. soap and detergent factory
 - B. lead battery manufacturing factory
 - C. plastic cup manufacturing factory
 - D. alcohol distillery
36. Among the statement given below select the ones that correctly describe the concept of sustainable development.
- (i) planned growth with minimum damage to the environment.
 - (ii) growth irrespective of the extent of damage caused to the environment.
 - (iii) stopping all development work to converse the environment.
 - (iv) growth that is acceptable to all the stakeholders.
- A.(i) and (iv) B. (ii) and (iii) C. (ii) and (iv) D. (iii) only

37. In our country, there are attempts to increase the height of several existing dams like Tehri and Almatti, dams across Narmada. Choose the correct statements among the following that are a consequence of raising the height of dams.

- (i) Terrestrial flora and fauna of the area is destroyed completely.
- (ii) Dislocation of people and domestic animals living in area.
- (iii) Valuable agricultural land may be permanently lost.
- (iv) It will generate permanent employment for people.

- A. (i) and (ii) C. (ii) and (iv)
B. (i), (ii) and (iii) D. (i), (iii) and (iv)

38. In the following groups of metals, which group(s) contains only non-biodegradable items?

- (i) Wood, paper, leather
- (ii) Polythene, detergent, PV
- (iii) Plastic, detergent, grass
- (iv) Plastic, bakelite, DDT

- A. (iii) C. (iv)
B. (i) and (iii) D. (ii) and (iv)

39. Which of the following limits the number of trophic levels in a food chain?

- A. Decrease in energy at higher trophic levels
- B. Deficient food supply
- C. Polluted air
- D. Water

40. If a grasshopper is eaten by a frog, then the energy transfer will be from

- A. Producer to decomposer.
- B. Producer to primary consumer.
- C. Primary consumer to secondary consumer.
- D. Secondary consumer to primary consumer.

➤ CHEMISTRY

41. Which among the following statement(s) is (are) true? Exposure of silver chloride to sunlight for a long duration turns grey due to

- (i) The formation of silver by decomposition of silver chloride
- (ii) Sublimation of silver chloride
- (iii) Decomposition of silver chloride gas from silver chloride
- (iv) Oxidation of silver chloride

- A. (i) only B. (i) and (iii) C. (ii) and (iii) D. (iv) only

42. Which of the following is not a physical change?
- A. Boiling of water to give water vapour
 - B. Melting of ice to give water
 - C. Dissolution of salt in water
 - D. Combustion of Liquefied Petroleum Gas
43. Which of the following observation help us to determine that a chemical change has taken place?
- A. Change in temperature
 - B. Change in colour
 - C. Evolution of gas
 - D. All of these
44. Which of the following is (are) an endothermic processes?
- (i) Dilution of sulphuric acid
 - (ii) Sublimation of dry ice
 - (iii) Condensation of water vapours
 - (iv) Evaporation of water
- A. (i) and (iii) B. (iii) and (iv) C. (ii) and (iv) D. (ii) and (iii)
45. In the double displacement reaction between aqueous potassium iodide and aqueous lead nitrite, a yellow precipitate of lead iodide is formed. while performing the activity if lead nitrite is not available, which of the following can be used in place of lead nitrate?
- A. Lead sulphate (insoluble)
 - B. Ammonium nitrate
 - C. Lead acetate
 - D. Potassium sulphate
46. Chemically rust is
- A. Ferric sulphate
 - B. Hydrate ferrous oxide
 - C. Ferric oxide
 - D. Hydrated ferric oxide
47. On adding dilute HCL to copper oxide in a beaker, the solution turns blue-green due to formation of
- A. Copper (II) hydroxide
 - B. Copper (II) chloride
 - C. Copper nitrate
 - D. Copper sulphate
48. Which of the following gives the correct increasing order of acidic strength?
- A. Water < acetic acidic < hydrochloride acid
 - B. Water < hydrochloride < acetic acid
 - C. Acetic acid < water < hydrochloride acid
 - D. Hydrochloride acid < water < acetic acid
49. Which of the following solutions will turn phenolphthalein pink?
- A. HCL (aq)
 - B. CO₂(aq)
 - C. KOH(aq)
 - D. H₂SO₄(aq)

50. Sodium hydrogen carbonate when added to acetic acid evolves a gas. Which of the following statements is true about the gas evolved?
- (i) It turns lime water milky.
 - (ii) It extinguishes a burning splinter.
 - (iii) It dissolves in a solution of sodium hydroxide.
 - (iv) It has a pungent odour.
- A. (i) and (ii) B. (i),(ii) and (iii) C. (ii),(iii) and (iv) D. (i) and (iv)
51. Assertion: copper sulphate crystals are wet because they contain water of crystallisation.
Reason: water of crystallisation is the fixed number of molecules of water present in one formula unit of salt.
- A. both A and R are true and R is correct explanation of A.
 - B. both A and R are true but R is not the correct explanation of A.
 - C. A is true but R is false.
 - D. A is false but R is true.
52. Which of the following is true when HCl (g) is passed through water?
- (i) It does not ionise in the solution as it is a covalent compound.
 - (ii) It ionises in the solution.
 - (iii) It gives both hydrogen and hydroxyl ions in the solution.
 - (iv) It forms hydronium ions in the solution due to the combination of hydrogen ions with water molecules.
- A. (i) only B. (iii) only C. (ii) and (iv) D. (iii) and (iv)
53. Four metals Al, Zn, Cu and Fe are added in different test tubes containing dilute hydrochloric acid. No bubbles are seen in the case of
- A. Al B. Zn C. Cu D. Fe
54. What happens when calcium is treated with water?
- (i) It does not react with water
 - (ii) It reacts violently with water
 - (iii) It reacts less violently with water
 - (iv) Bubbles of hydrogen gas formed stick to the surface of calcium
- A. (i) and (iv) B. (ii) and (iii) C. (i) and (ii) D. (iii) and (iv)
55. Reaction between X and Y, forms compound Z, X loses electrons and Y gains electrons. Which of the following properties is not shown by Z?
- A. Has high melting point
 - B. Has low melting point
 - C. Conducts electricity in molten state
 - D. Occurs as solid
56. Which of the following can undergo a chemical reaction?
- A. $\text{MgSO}_4 + \text{Fe}$ B. $\text{ZnSO}_4 + \text{Fe}$ C. $\text{MgSO}_4 + \text{Pb}$ D. $\text{CuSO}_4 + \text{Fe}$

57. Metals are refined by using different method. Which of the following metals are refined by electrolytic refining?
(i) Au (ii) Cu (iii) Na (iv) K
A. (i) and (ii) B. (i) and (iii) C. (ii) and (iii) D. (iii) and (iv)
58. Assertion: Bronze is an alloy of copper and tin
Reason: Alloys are heterogeneous mixture of metals with other metals and non-metals.
A. both A and R are true and R is correct explanation of A.
B. both A and R are true but R is not the correct explanation of A.
C. A is true but R is false.
D. A is false but R is true.
59. Which of the following are the characteristics of isotopes of an element?
(i) Isotopes of an element have same atomic masses
(ii) Isotopes of an element have same atomic number
(iii) Isotopes of an element show same physical properties
(iv) Isotopes of an element show same chemical properties
A. (i), (iii) and (iv) B. (ii), (iii) and (iv) C. (ii) and (iii) D. (ii) and (iv)
60. In Mendeleev's periodic table, gaps were left for the elements to be discovered later. Which of the following elements found place in the periodic table later?
A. Germanium B. Chlorine C. Oxygen D. Silicon
61. Arrange the following elements in the order of their increasing non-metallic character- Li, O, C, Be, F.
A. $F < O < C < Be < Li$
B. $Li < Be < C < O < F$
C. $F < C < O < Be < Li$
D. $F < O < Be < C < Li$
62. Which of the given elements A, B, C, D and E with atomic number 2, 3, 7, 10 and 30 respectively belong to the same period?
A. A, B, C B. B, C, D C. A, D, E D. B, D, E
63. Assertion: According to Mendeleev, the properties of elements are a periodic function of their atomic masses.
Reason: atomic number is equal to the number of protons.
A. both A and R are true and R is correct explanation of A.
B. both A and R are true but R is not the correct explanation of A.
C. A is true but R is false.
D. A is false but R is true.

64. In Mendeleev's periodic Table, gaps were left for the elements to be discovered later. Which of the following elements found place in the periodic table latter?
- A. Germanium B. Chlorine
B. Oxygen D. Silicon
65. Which of the following compound contains double bond?
- A. H₂O B. CH₄
C. NH₃ D. O₂
66. In which of the following compounds, - OH is the functional group?
- A. Butanone B. Butanol
B. Butanoic acid D. Butanal
67. Identify the unsaturated compounds from the following
- (i) Propane
(ii) Propene
(iii) Propyne
(iv) Chloropropane
- A. (i) and (ii) B. (ii) and (iv) C. (iii) and (iv) D. (ii) and (iii)
68. Carbon exists in the atmosphere in the form of
- A. Carbon monoxide only
B. Carbon monoxide in traces and carbon dioxide
C. Carbon dioxide only
D. Coal
69. The name of the compound CH₃ – CH₂ – CHO is
- A. Propanol
B. Propanone
C. Ethanol
D. Ethanol
70. Assertion: diamond and graphite are allotropes.
Reason: some elements can have several different structural forms while in the same physical state. These forms are called allotropes.
- A. both A and R are true and R is correct explanation of A.
B. both A and R are true but R is not the correct explanation of A.
C. A is true but R is false.
D. A is false but R is true.

➤ BIOLOGY

71. During respiration exchange of gases take place in
- A. Trachea and larynx
B. Alveoli and lungs
C. Alveoli and throat
D. Throat and larynx

72. When air is blown from mouth into a test-tube containing lime water, the lime water turned milky due to the presence of
- Oxygen
 - Carbon dioxide
 - Nitrogen
 - Water vapour
73. If salivary amylase is lacking in the saliva, which of the following events in the mouth cavity will be affected?
- Proteins breaking down into amino acid
 - Starch breaking down into sugars
 - Fats breaking down into fatty acids and glycerol
 - Absorption of vitamins
74. Lack of oxygen in muscle often leads to cramps among cricketers. This results due to
- Conversion of pyruvate to ethanol
 - Conversion of pyruvate to glucose
 - Non conservation of glucose to pyruvate
 - Conversion of pyruvate to lactic acid
75. Assertion: In anaerobic respiration, one of the end product is alcohol.
Reason: There is an incomplete breakdown of glucose.
- both A and R are true and R is correct explanation of A.
 - both A and R are true but R is not the correct explanation of A.
 - A is true but R is false.
 - A is false but R is true.
76. Single circulation, i.e., blood flow through the heart only once during one cycle of passage through the body, is exhibited by
- Labeo, Chameleon, Salamander
 - Hippocampus, Exocoetus, Anabas
 - Hyla, Rana, Draco
 - Whale, Dolphin, Turtle
77. Upon receiving a signal, the dendrite tip of a chemical reaction that
- Creates an electrical impulse in the dendrite.
 - Creates an electrical impulse in the next neuron.
 - Releases some chemicals in the cell body of the neuron.
 - Creates a stimulus.
78. Gibberellins promote
- Cell division
 - Cell elongation
 - Growth of the stem
 - All of these

79. In a synapse, chemical signal is transmitted from
- A. Dendritic end of one neuron to axonal end of another neuron
 - B. Axon to cell body of the same neuron
 - C. Cell body to axonal end of neuron
 - D. Axonal end of one neuron to dendritic end of another neuron
80. Assertion: insulin regulates blood sugar level.
Reason: insufficient secretion of insulin will cause diabetes.
- A. both A and R are true and R is correct explanation of A.
 - B. both A and R are true but R is not the correct explanation of A.
 - C. A is true but R is false.
 - D. A is false but R is true.
81. Involuntary actions in the body are controlled by
- A. Medulla in fore brain
 - B. Medulla in mid brain
 - C. Medulla in hind brain
 - D. Medulla in spinal cord
82. Dwarfism in human beings is caused due to deficiency of
- A. Thyroxin
 - B. Growth hormone
 - C. Adrenalin
 - D. Insulin
83. In a flower, the parts that produce male and female gametes (germ cells) are
- A. Stamen and anther
 - B. Filament and stigma
 - C. Anther and ovary
 - D. Stamen and style
84. Offspring formed by asexual method of reproduction have greater similarity among themselves because
- (i) Asexual reproduction involves only one parent
 - (ii) Asexual reproduction does not involve gametes
 - (iii) Asexual reproduction occurs before sexual reproduction
 - (iv) Asexual reproduction occurs after sexual reproduction
- A. (i) and (ii)
 - B. (i) and (iii)
 - C. (ii) and (iv)
 - D. (iii) and (iv)
85. Vegetative propagation refers to the formation of new plants from
- A. Stem, roots and flower
 - B. Stem, roots and leaves
 - C. Stem, flowers and fruits
 - D. Stem, leaves and flowers

86. In human females an event that reflects onset of reproductive phase is
- Growth of body
 - Changes in hair pattern
 - Change in voice
 - Menstruation
87. Fertilisation in human beings takes place in
- Uterus
 - Vagina
 - Fallopian tube
 - Vas deferens
88. Which of the following is not a function of ovaries?
- They produce and release eggs.
 - They produce estrogen and progesterone
 - They stimulate the start of labour contraction
 - They store eggs
89. The difference between homologous and analogous organs is that
- Homologous organs perform similar function but analogous organs perform different function.
 - Homologous organs have different origin but analogous organs have similar origin.
 - Homologous organs are evidence of convergent evolution but analogous organs are evidence of divergent evolution.
 - Homologous organs have different structures but analogous organs have similar structure.
90. Two pink coloured flowers on crossing resulted in 1 red, 2 pink and 1 white flower progeny. The nature of the cross will be
- Double fertilization
 - Self pollination
 - Cross fertilization
 - No fertilisation
91. Two pea plants one with round green seeds (RRyy) and another with wrinkled yellow (rrYY) seeds produce F₁ progeny that have round yellow (RrYy) seeds. When F₁ plants are self-pollinated, the F₂ progeny will have new combination of characters. Choose the new combination from the following
- Round, yellow
 - Round, green
 - Wrinkled, yellow
 - Wrinkled, green
- A. (i) and (ii) B. (ii) and (iii)
C. (i) and (iv) D. (i) and (iii)

92. According to the evolutionary theory, formation of a new species but not inherited.
- A. Sudden creation by nature.
 - B. Accumulation of variations over several generations.
 - C. Clones formed during asexual reproduction.
 - D. Movement of individual from one habitat to another.
93. In peas, a pure tall plant (TT) is crossed with a short plant (tt). The ratio of pure tall plants to short plants in F₂ is
- A 1:3 B. 3:1 C. 1:1 D. 2:1
94. Assertion : variations are seen in offspring produce by sexual reproduction.
Reason : DNA molecules generated by replication is not exactly identical to original DNA.
- A. both A and R are true and R is correct explanation of A.
 - B. both A and R are true but R is not the correct explanation of A.
 - C. A is true but R is false.
 - D. A is false but R is true.
95. A normal eye can see objects clearly that are between
- A. Our eye and infinity
 - B. 25 cm and infinity
 - C. 50 cm and infinity
 - D. 100 cm and infinity
96. The sky would appear red instead of blue if
- A. Atmospheric particles scatter blue light more than red light
 - B. Atmospheric particles scatter all colours equally
 - C. Atmospheric particles scatter red light more than blue light
 - D. The sun was much hotter
97. A person cannot see objects distinctly kept beyond 2 m. this defect can be corrected by using a lens of power
- A. +0.5 D B. -0.5 D C. +0.2 D D. -0.2 D
98. Which of the following statements is correct regarding the propagation of light of different colours of white light in air?
- A. Red light moves fastest.
 - B. Blue light travels fastest than green light.
 - C. All colour of white light move with the same speed.
 - D. Yellow light moves with the mean speed as that of red and violet lights.

99. The danger signals installed at the top of tall building are red in colour. These can be easily seen from a distance because among all other colour, the red light

- A. Is scattered the most by smoke or fog
- B. Is scattered the least by smoke or fog
- C. Is absorbed the most by smoke or fog
- D. Moves fastest in air

100. Assertion (A) : A rainbow is sometimes seen in sky in rainy season only when observer's back is toward the sun.

Reason (R): internal reflection in the water droplets cause dispersion and the final rays are in backward direction.

- A. both A and R are true and R is correct explanation of A.
- B. both A and R are true but R is not the correct explanation of A.
- C. A is true but R is false.
- D. A is false but R is true.

!Best of luck...

