

RRB JE General Science: 100 MCQs

- Target Exam: RRB Junior Engineer (RRB JE)
- Study Notes Prepared for: Entri App Users
- Coverage - Physics, Chemistry, and Life Sciences (Up to 10th Standard CBSE)

Section 1: Physics

Q1. What is the SI unit of electric current?

- (a) Volt
- (b) Ampere
- (c) Ohm
- (d) Joule

Q2. The focal length of a spherical mirror of radius of curvature R is given by:

- (a) $f = 2R$
- (b) $f = R/2$
- (c) $f = R/4$
- (d) $f = R$

Q3. Which type of mirror is used as a driver's rear-view mirror in vehicles?

- (a) Concave mirror
- (b) Convex mirror
- (c) Plane mirror
- (d) Parabolic mirror

Q4. The phenomenon of splitting white light into its constituent colors is called:

- (a) Reflection
- (b) Refraction
- (c) Dispersion
- (d) Scattering

Q5. Resistance of a conductor is inversely proportional to its:

- (a) Length
- (b) Area of cross-section
- (c) Temperature
- (d) Resistivity

Q6. Myopia (short-sightedness) can be corrected using a:

- (a) Convex lens
- (b) Concave lens
- (c) Bifocal lens
- (d) Cylindrical lens

Q7. The Commercial unit of electrical energy is kilowatt-hour (kWh). $1kWh$ is equal to:

- (a) $3.6 \times 10^5 J$
- (b) $3.6 \times 10^6 J$
- (c) $36 \times 10^6 J$
- (d) $10^3 J$

Q8. The image formed by a concave mirror when an object is placed at its Focus (F) is:

- (a) At Focus
- (b) Between F and C
- (c) At Center of curvature (C)
- (d) At Infinity

Q9. Which color of light bends the most while passing through a glass prism?

- (a) Red
- (b) Violet
- (c) Yellow

(d) Green

Q10. Device used to detect the presence of electric current in a circuit is:

(a) Voltmeter

(b) Ammeter

(c) Galvanometer

(d) Rheostat

Q11. Twinkling of stars in the night sky is due to:

(a) Atmospheric reflection

(b) Atmospheric refraction

(c) Internal reflection

(d) Dispersion of light

Q12. What is the power of a lens having a focal length of $+1\text{ meter}$?

(a) $+1\text{ Diopter}(D)$

(b) $+2D$

(c) $-1D$

(d) $+0.5D$

Q13. Magnetic field lines inside a current-carrying long straight solenoid are:

(a) Circular

(b) Elliptical

(c) Straight and parallel

(d) Parabolic

Q14. The blue color of the clear sky is primarily due to:

(a) Dispersion of sunlight

(b) Scattering of light

- (c) Total internal reflection
- (d) Refraction through atmosphere

Q15. Fleming's Left-Hand Rule gives the direction of:

- (a) Induced current
- (b) Magnetic field
- (c) Force acting on a current-carrying conductor in a magnetic field
- (d) Electric charge

Q16. The absolute refractive index of a medium is the ratio of speed of light in vacuum to speed of light in:

- (a) Water
- (b) Glass
- (c) That medium
- (d) Air

Q17. At the time of a short circuit, the current in the electrical circuit:

- (a) Reduces substantially
- (b) Does not change
- (c) Increases heavily
- (d) Fluctuates continuously

Q18. The unit of electrical resistivity (ρ) is:

- (a) Ohm
- (b) Ohm-meter ($\Omega \cdot \text{m}$)
- (c) Volt/meter
- (d) Ampere/meter

Q19. Hypermetropia is caused due to:

- (a) Eyeball becoming too long

- (b) Focal length of the eye lens being too long
- (c) Excessive curvature of eye lens
- (d) Weakening of optic nerve

Q20. In an electrical circuit, an ammeter is always connected in:

- (a) Series
- (b) Parallel
- (c) Either series or parallel
- (d) Bridge network

Q21. According to Joule's heating law, heat produced (H) in a resistor of resistance R carrying current I for time t is:

- (a) $H = IRt$
- (b) $H = I^2Rt$
- (c) $H = IR^2t$
- (d) $H = I^2R/t$

Q22. The least distance of distinct vision for a normal young adult eye is about:

- (a) 25m
- (b) 2.5cm
- (c) 25cm
- (d) 2.5m

Q23. A device that converts electrical energy into mechanical energy is:

- (a) Electric generator
- (b) Electric motor
- (c) Transformer
- (d) Galvanometer

Q24. The fundamental law of electrostatics states that like charges:

- (a) Attract
- (b) Repel
- (c) Neutralize
- (d) Induce

Q25. Which phenomenon is responsible for the formation of a rainbow?

- (a) Dispersion and total internal reflection
- (b) Only reflection
- (c) Only scattering
- (d) Interference

Q26. Convex lens always forms a virtual and erect image when the object is placed:

- (a) At infinity
- (b) At focus F_1
- (c) Between optical center O and principal focus F_1
- (d) Between F_1 and $2F_1$

Q27. The safety device based on the heating effect of electric current is:

- (a) Fuse
- (b) Transformer
- (c) Inverter
- (d) Rheostat

Q28. The power rating of an appliance is 220V, 100W. Its resistance is:

- (a) 2.2Ω
- (b) 484Ω
- (c) 100Ω

(d) 220Ω

Q29. Work done in moving a unit positive charge from one point to another in an electric circuit is a measure of:

(a) Electric Current

(b) Potential Difference

(c) Resistance

(d) Conductance

Q30. What color is light scattered least by air molecules in the atmosphere?

(a) Blue

(b) Violet

(c) Red

(d) Green

Q31. The equivalent resistance of two resistors R_1 and R_2 connected in parallel is:

(a) $R_1 + R_2$

(b) $(R_1 \times R_2)/(R_1 + R_2)$

(c) $(R_1 + R_2)/(R_1 \times R_2)$

(d) $R_1 - R_2$

Q32. Convex mirror is used in solar cookers to concentrate light.

(a) True

(b) False — Concave mirror is used

(c) False — Plane mirror is used

(d) False — Cylindrical mirror is used

Q33. Snell's law relates to:

(a) Reflection of light

- (b) Refraction of light
- (c) Interference of light
- (d) Polarization of light

Section 2: Chemistry

Q34. What is the chemical name of Baking Soda?

- (a) Sodium carbonate
- (b) Sodium hydrogen carbonate
- (c) Calcium hydroxide
- (d) Sodium hydroxide

Q35. $\text{Fe}_2\text{O}_3 + 2\text{Al} \rightarrow \text{Al}_2\text{O}_3 + 2\text{Fe}$. This reaction is an example of a:

- (a) Combination reaction
- (b) Double displacement reaction
- (c) Decomposition reaction
- (d) Displacement reaction

Q36. Which gas is evolved when an acid reacts with a metal?

- (a) Oxygen
- (b) Nitrogen
- (c) Hydrogen
- (d) Carbon dioxide

Q37. Rusting of iron is an example of:

- (a) Oxidation reaction
- (b) Reduction reaction
- (c) Neutralization reaction
- (d) Decomposition reaction

Q38. What is the pH value of a neutral aqueous solution at 25°C ?

- (a) 0
- (b) 7
- (c) 14
- (d) 1

Q39. Plaster of Paris is chemically known as:

- (a) Calcium sulphate dihydrate
- (b) Calcium sulphate hemihydrate
- (c) Calcium carbonate
- (d) Calcium chloride

Q40. Which non-metal is liquid at room temperature?

- (a) Mercury
- (b) Bromine
- (c) Iodine
- (d) Chlorine

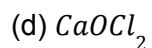
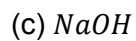
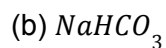
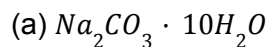
Q41. Hydrocarbons containing at least one carbon-carbon double bond are called:

- (a) Alkanes
- (b) Alkenes
- (c) Alkynes
- (d) Cycloalkanes

Q42. What is the functional group present in aldehydes?

- (a) – OH
- (b) – CHO
- (c) – COOH
- (d) – CO –

Q43. Chemical formula of Washing Soda is:



Q44. Which process is used to convert sulfide ores into oxides by heating strongly in the presence of excess air?

(a) Calcination

(b) Roasting

(c) Smelting

(d) Electrolytic refining

Q45. Vinegar is an aqueous solution of:

(a) 50\text{\%} Acetic acid

(b) 5\text{\%} Acetic acid

(c) 10\text{\%} Formic acid

(d) 100\% Citric acid

Q46. Which element exhibits maximum catenation capacity?

(a) Silicon

(b) Carbon

(c) Sulfur

(d) Nitrogen

Q47. Tooth enamel is made up of:

(a) Calcium phosphate

(b) Calcium carbonate

- (c) Calcium oxide
- (d) Potassium phosphate

Q48. The reaction of an acid with a base to form salt and water is called:

- (a) Oxidation
- (b) Reduction
- (c) Neutralization
- (d) Combination

Q49. Chemical formula of Bleaching Powder is:

- (a) $CaOCl_2$
- (b) $Ca(OH)_2$
- (c) $CaCO_3$
- (d) $CaCl_2$

Q50. Pure gold is expressed in terms of:

- (a) 18 Karat
- (b) 20 Karat
- (c) 22 Karat
- (d) 24 Karat

Q51. Which alloy is composed of copper and zinc?

- (a) Bronze
- (b) Brass
- (c) Solder
- (d) Steel

Q52. Covalent compounds generally have:

- (a) High melting and boiling points

- (b) Low melting and boiling points
- (c) High electrical conductivity
- (d) Ionic lattice structures

Q53. Oxidation is a process which involves:

- (a) Gain of electrons
- (b) Addition of hydrogen
- (c) Addition of oxygen
- (d) Removal of oxygen

Q54. Solder is an alloy of:

- (a) Lead and Tin
- (b) Copper and Tin
- (c) Iron and Carbon
- (d) Copper and Zinc

Q55. Modern Periodic Law states that properties of elements are periodic functions of their:

- (a) Atomic masses
- (b) Atomic numbers
- (c) Mass numbers
- (d) Atomic volume

Q56. What is the chemical formula of ethanol?

- (a) CH_3OH
- (b) C_2H_5OH
- (c) C_3H_7OH
- (d) CH_3COOH

Q57. Acid present in ant sting is:

- (a) Methanoic acid (Formic acid)
- (b) Lactic acid
- (c) Oxalic acid
- (d) Tartaric acid

Q58. Cinnabar is an ore of which metal?

- (a) Copper
- (b) Aluminum
- (c) Mercury
- (d) Iron

Q59. Reaction of fats or oils with sodium hydroxide solution is called:

- (a) Esterification
- (b) Saponification
- (c) Hydrogenation
- (d) Oxidation

Q60. Modern Periodic Table consists of how many groups and periods?

- (a) 7 Groups, 18 Periods
- (b) 18 Groups, 7 Periods
- (c) 8 Groups, 7 Periods
- (d) 18 Groups, 8 Periods

Q61. Soaps form scum when mixed with hard water due to the presence of:

- (a) Sodium and Potassium salts
- (b) Calcium and Magnesium salts
- (c) Iron and Gold salts

(d) Ammonium salts

Q62. Addition of hydrogen to unsaturated hydrocarbons in the presence of nickel catalyst is called:

(a) Substitution reaction

(b) Hydrogenation reaction

(c) Oxidation reaction

(d) Combustion reaction

Q63. Which metal burns with a dazzling white flame in air?

(a) Sodium

(b) Magnesium

(c) Iron

(d) Copper

Q64. What is the nature of metallic oxides?

(a) Acidic

(b) Basic

(c) Neutral

(d) Amphoteric (all)

Q65. Amphoteric oxides react with:

(a) Acids only

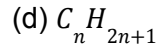
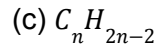
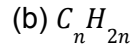
(b) Bases only

(c) Both acids and bases

(d) Neither acids nor bases

Q66. General formula for alkanes is:

(a) $C_n H_{2n+2}$



Section 3: Life Sciences (Biology)

Q67. The green color of plant leaves is due to the presence of:

- (a) Hemoglobin
- (b) Chlorophyll
- (c) Xanthophyll
- (d) Carotene

Q68. Which organelle is known as the 'Powerhouse of the cell'?

- (a) Ribosome
- (b) Golgi apparatus
- (c) Mitochondria
- (d) Lysosome

Q69. In human digestive system, bile juice is secreted by:

- (a) Stomach
- (b) Pancreas
- (c) Liver
- (d) Small Intestine

Q70. Breakdown of pyruvate to give carbon dioxide, water, and energy takes place in:

- (a) Cytoplasm
- (b) Mitochondria
- (c) Chloroplast
- (d) Nucleus

Q71. Structural and functional unit of human kidney is:

- (a) Neuron
- (b) Nephron
- (c) Alveoli
- (d) Glomerulus

Q72. Which hormone lowers blood glucose level in human body?

- (a) Glucagon
- (b) Insulin
- (c) Adrenaline
- (d) Thyroxine

Q73. Movement of water molecules through a selectively permeable membrane is called:

- (a) Diffusion
- (b) Osmosis
- (c) Transpiration
- (d) Translocation

Q74. Which plant hormone promotes cell division?

- (a) Auxin
- (b) Gibberellin
- (c) Cytokinin
- (d) Absciscic acid

Q75. The gap between two neurons is called a:

- (a) Axon
- (b) Dendrite
- (c) Synapse

(d) Impulse

Q76. Amoeba captures its food with the help of:

(a) Cilia

(b) Flagella

(c) Pseudopodia

(d) Oral groove

Q77. Human heart consists of how many chambers?

(a) 2

(b) 3

(c) 4

(d) 5

Q78. Oxygenated blood from lungs reaches which chamber of the heart first?

(a) Right Atrium

(b) Left Atrium

(c) Right Ventricle

(d) Left Ventricle

Q79. Deficiency of Iodine in diet causes which disease?

(a) Beriberi

(b) Goitre

(c) Rickets

(d) Scurvy

Q80. Transport of soluble products of photosynthesis in plants is called:

(a) Transpiration

(b) Translocation

- (c) Evaporation
- (d) Absorption

Q81. Xylem tissue in plants is mainly responsible for transport of:

- (a) Food
- (b) Water and Minerals
- (c) Amino acids
- (d) Oxygen

Q82. Master gland of the human endocrine system is:

- (a) Thyroid gland
- (b) Adrenal gland
- (c) Pituitary gland
- (d) Pancreas

Q83. Reproductive part of an angiosperm plant is the:

- (a) Leaf
- (b) Stem
- (c) Root
- (d) Flower

Q84. Male reproductive unit in a flower is called:

- (a) Carpel / Pistil
- (b) Stamen
- (c) Sepal
- (d) Petal

Q85. Binary fission is a mode of asexual reproduction observed in:

- (a) Hydra

- (b) Amoeba
- (c) Spirogyra
- (d) Yeast

Q86. Planaria possesses high capacity of:

- (a) Budding
- (b) Regeneration
- (c) Spore formation
- (d) Fragmentation

Q87. Sexual reproduction leads to greater genetic variation because:

- (a) It involves only one parent
- (b) DNA comes from two parents
- (c) No cell division occurs
- (d) Chromosomes do not replicate

Q88. Which structure connects the fetus to the uterine wall in mammals?

- (a) Fallopian tube
- (b) Placenta
- (c) Cervix
- (d) Oviduct

Q89. Who is considered as the 'Father of Genetics'?

- (a) Charles Darwin
- (b) Gregor Mendel
- (c) Jean-Baptiste Lamarck
- (d) Watson and Crick

Q90. Human somatic cells contain how many pairs of chromosomes?

- (a) 22 pairs
- (b) 23 pairs
- (c) 46 pairs
- (d) 44 pairs

Q91. Sex of a child in humans is determined by the chromosome inherited from:

- (a) Mother
- (b) Father
- (c) Both parents equally
- (d) Grandparents

Q92. Anaerobic respiration in yeast produces:

- (a) Lactic acid + Energy
- (b) Ethanol + Carbon Dioxide + Energy
- (c) Pyruvate + Water
- (d) Glucose + Oxygen

Q93. Accumulation of which acid causes muscle cramps during severe physical exercise?

- (a) Pyruvic acid
- (b) Lactic acid
- (c) Acetic acid
- (d) Carbonic acid

Q94. Loss of water in the form of vapor from aerial parts of a plant is termed:

- (a) Translocation
- (b) Transpiration
- (c) Guttation
- (d) Exudation

Q95. Primary function of blood platelets is:

- (a) Transport of oxygen
- (b) Immunity
- (c) Blood clotting
- (d) Transport of food

Q96. Which component of blood carries oxygen to all cells of the human body?

- (a) White Blood Cells (WBCs)
- (b) Red Blood Cells (RBCs / Hemoglobin)
- (c) Plasma
- (d) Platelets

Q97. In human brain, center for maintaining posture and body balance is located in:

- (a) Cerebrum
- (b) Cerebellum
- (c) Medulla oblongata
- (d) Hypothalamus

Q98. Female sex hormone produced by ovaries is:

- (a) Testosterone
- (b) Estrogen
- (c) Insulin
- (d) Thyroxine

Q99. Deconstructive process that breaks down food substances into simpler absorbable nutrients is:

- (a) Excretion
- (b) Respiration
- (c) Digestion

(d) Circulation

Q100. Organism that reproduces by budding is:

(a) Amoeba

(b) Hydra

(c) Leishmania

(d) Plasmodium

Answer Key

Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
1	(b)	21	(b)	41	(b)	61	(b)	81	(b)
2	(b)	22	(c)	42	(b)	62	(b)	82	(c)
3	(b)	23	(b)	43	(a)	63	(b)	83	(d)
4	(c)	24	(b)	44	(b)	64	(b)	84	(b)
5	(b)	25	(a)	45	(b)	65	(c)	85	(b)
6	(b)	26	(c)	46	(b)	66	(a)	86	(b)
7	(b)	27	(a)	47	(a)	67	(b)	87	(b)

8	(d)	28	(b)	48	(c)	68	(c)	88	(b)
9	(b)	29	(b)	49	(a)	69	(c)	89	(b)
10	(c)	30	(c)	50	(d)	70	(b)	90	(b)
11	(b)	31	(b)	51	(b)	71	(b)	91	(b)
12	(a)	32	(b)	52	(b)	72	(b)	92	(b)
13	(c)	33	(b)	53	(c)	73	(b)	93	(b)
14	(b)	34	(b)	54	(a)	74	(c)	94	(b)
15	(c)	35	(d)	55	(b)	75	(c)	95	(c)
16	(c)	36	(c)	56	(b)	76	(c)	96	(b)
17	(c)	37	(a)	57	(a)	77	(c)	97	(b)
18	(b)	38	(b)	58	(c)	78	(b)	98	(b)
19	(b)	39	(b)	59	(b)	79	(b)	99	(c)

20	(a)	40	(b)	60	(b)	80	(b)	100	(b)
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