

**ACE OF PACE (MEDICAL) CLASS 10<sup>th</sup>**  
**(ANSWER KEY)**

PHYSICS	CHEMISTRY	BIOLOGY	
1. (D)	26. (A)	51. (D)	76. (D)
2. (D)	27. (B)	52. (A)	77. (A)
3. (A)	28. (B)	53. (B)	78. (B)
4. (A)	29. (A)	54. (B)	79. (C)
5. (D)	30. (B)	55. (B)	80. (C)
6. (C)	31. (D)	56. (D)	81. (D)
7. (D)	32. (A)	57. (D)	82. (C)
8. (C)	33. (A)	58. (D)	83. (B)
9. (A)	34. (A)	59. (C)	84. (B)
10. (A)	35. (D)	60. (A)	85. (D)
11. (A)	36. (A)	61. (B)	86. (B)
12. (B)	37. (C)	62. (C)	87. (C)
13. (B)	38. (A)	63. (A)	88. (D)
14. (B)	39. (C)	64. (D)	89. (D)
15. (B)	40. (D)	65. (B)	90. (A)
16. (C)	41. (B)	66. (A)	91. (D)
17. (C)	42. (C)	67. (D)	92. (B)
18. (A)	43. (D)	68. (B)	93. (A)
19. (B)	44. (C)	69. (D)	94. (A)
20. (A)	45. (D)	70. (B)	95. (D)
21. (C)	46. (A)	71. (A)	96. (B)
22. (B)	47. (D)	72. (B)	97. (A)
23. (B)	48. (C)	73. (A)	98. (A)
24. (A)	49. (B)	74. (C)	99. (D)
25. (D)	50. (B)	75. (B)	100. (B)

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## (SOLUTION)

1. (D) Theoretical question

2. (D)  $v^2 = u^2 + 2as$ 

$$v^2 \propto s$$

$$(50)^2 \propto 6 \quad (\text{i})$$

$$(100)^2 \propto s \quad (\text{ii})$$

Divide equation (i) and (ii)

$$\frac{50 \times 50}{100 \times 100} = \frac{6}{s}$$

$$s = 6 \times 4 = 24\text{m}$$

3. (A) ohm

4. (A) Scalar

5. (D) Theoretical question

6. (C) Theoretical question

7. (D) Sound is a form of energy.

8. (C)  $P = \frac{v^2}{R}$ 

$$100 = \frac{(200)^2}{R}$$

$$R = \frac{200 \times 200}{100} = 400\Omega$$

9. (A)  $v = u + at$ 

$$\frac{v - u}{t} = a$$

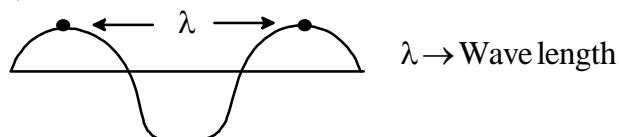
$$\frac{40 - 20}{2} = \frac{20}{2} = 10\text{sec}$$

10. (A)

$$1\text{kg/mm} = 10^6\text{mg}/10^{-6}\text{km} = 10^{12}\text{mg/km}$$

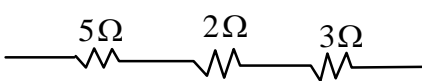
11. (A)  $V_{\text{solid}} > V_{\text{liq}} > V_{\text{gas}} \rightarrow$  for sound

12. (B)



13. (B) Constant velocity means it is travelling in uniform motion.

14. (B)

15. (B) 

$R_{\text{eq}} = 10\Omega$

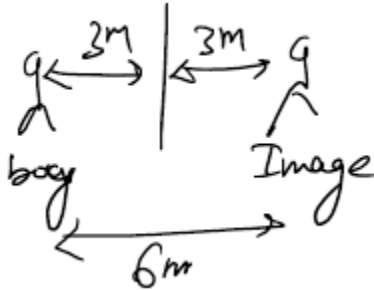
16. (C)  $\langle \text{speed} \rangle = 10 \text{ m/s}$

$\langle \text{velocity} \rangle = 0$

Because net displacement = 0

$\text{s}^2$

17. (C)



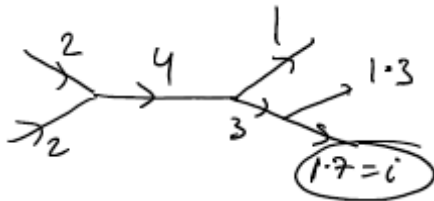
18. (A)

$$\mu = \frac{c}{v} \Rightarrow v = \frac{c}{\mu}$$

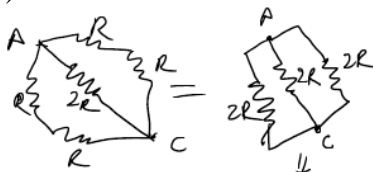
$$v = \frac{3 \times 10^8}{4/3} = \frac{9}{4} \times 10^8 \text{ m/s} = 2.25 \times 10^8 \text{ m/s}$$

19. (B)

20. (A)



21. (C)



$$\frac{1}{R_{eq}} = \frac{1}{2R} + \frac{1}{2R} + \frac{1}{2R} \quad \text{parallel}$$

$$= \frac{3}{2R} \Rightarrow \left[ R_{eq} = \frac{2R}{3} \right]$$

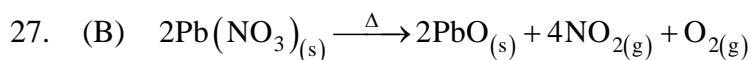
22. (B)

23. (B)

24. (A)

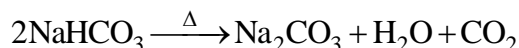
25. (D) – (only fossil fuel)

26. (A) Silver is the best conductor of both heat and electricity among metals. Copper and gold are used more often in electrical applications because copper is less expensive and gold has a much higher corrosion resistance



28. (B)  $(\text{NH}_4)_2\text{SO}_4$  is a salt of strong acid ( $\text{H}_2\text{SO}_4$ ) and weak base ( $\text{NH}_4\text{OH}$ ).

29. (A) The following reaction takes place when  $\text{NaHCO}_3$  is heated during cooking.



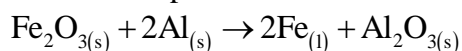
30. (B) 'Al' is a very reactive element, obtained by the electrolytic reduction of aluminium oxide.

31. (D)

32. (A)

33. (A)

34. (A) The reaction of iron (III) oxide ( $\text{Fe}_2\text{O}_3$ ) with aluminium is used to join railway tracks or cracked machine parts. This reaction is known as the thermite reaction.



35. (D) Calcium sulphate hemihydrate  $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$  is 'Plaster of Paris'.

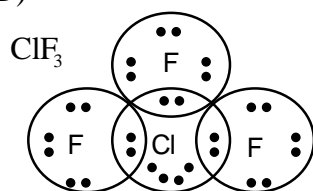
36. (A)

37. (C)

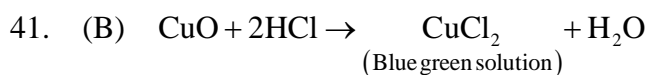
38. (A)

39. (C)

40. (D)

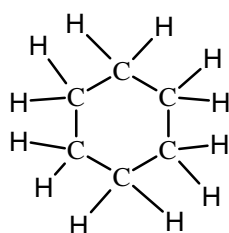


$\text{ClF}_3$  is not following octet Rule



42. (C) C – F  
Since the electronegativity difference is more in between C & F

43. (D) (Cyclohexane is  $\text{C}_6\text{H}_{12}$ )



44. (C) Vinegar contains acetic acid ( $\text{CH}_3\text{COOH}$ )
45. (D)
46. (A) Milk of magnesia is a  $\text{Mg}(\text{OH})_2$  solution of pH 10. It is alkaline solution
47. (D) Test tube A :  $\text{Na}_2\text{CO}_{3(s)} + 2\text{HCl}_{(aq)} \rightarrow 2\text{NaCl}_{(aq)} + \text{H}_2\text{O}_{(l)} + \text{CO}_{2(g)}$   
 Test tube B :  $\text{NaHCO}_{3(s)} + \text{HCl}_{(aq)} \rightarrow \text{NaCl}_{(aq)} + \text{H}_2\text{O}_{(l)} + \text{CO}_{2(g)}$   
 $\text{Ca}(\text{OH})_{2(aq)} + \text{CO}_{2(g)} \rightarrow \text{CaCO}_{3(s)} + \text{H}_2\text{O}_{(l)}$   
 (line water) (White precipitate)  
 $\text{CaCO}_{3(s)} + \text{H}_2\text{O}_{(l)} + \text{CO}_{2(g)} \rightarrow \text{Ca}(\text{HCO}_3)_{2(aq)}$   
 (Soluble in water)
48. (C)  
 The balanced chemical equation is  
 $3\text{Fe} + 4\text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + 4\text{H}_2$
49. (B) Magnesium ribbon burns with a dazzling white flame and change into a magnesium oxide a white powder.
50. (B) Isotopes are the atoms having same atomic number but difference mass number. Isotones are the atoms of different elements having different. Same no. of neutrons. Isobars are the atoms of different element having same mass number.
51. (D) Watson and Crick discovered DNA structure in 1953.
52. (A) Genotype is called as genetic constituent of an organism.
53. (B) Man. The harmful chemicals will get accumulated at all trophic levels and would be maximum at the level of secondary consumer which is man in this case.
54. (B) Hormones are either, amines, peptide or steroid in nature.
55. (B) ADH or vasopressin promotes reabsorption of water by acting on aquaporins.
56. (D) Lungs perform only exchange of gases and water vapour.
57. (D) Carbon dioxide, salts and excess water is considered as waste product.
58. (D) All plants performing photosynthesis conduct Calvin cycle /  $\text{C}_3$  cycle.
59. (C) Asphyxiation is due to strangulation, where exchange of gases is highly limited and results in more accumulation of  $\text{CO}_2$  and the venous blood.
60. (A) On inspiration oxygen is used up and during expiration carbon dioxide is released out.
61. (B) Malaria is transmitted via anopheles vector.
62. (C) Stapes is the smallest bone in humans.
63. (A) Dental formula of adult human is  $\frac{2123}{2123}$

64. (D) Gastrovascular cavity is the site for digestion in hydra.
65. (B) The first mammal cloned from an adult somatic cell, using the process of nuclear transfer was Dolly, a sheep.
66. (A) Osteoporosis is a condition characterized by decrease in bone density.
67. (D)
68. (B) Xerophthalmia is Vit A deficiency disorder.
69. (D) Only ETC involves direct oxygen use may or may not occur in absence of it, but doesn't require direct O<sub>2</sub> supply.
70. (B) Incomplete C-shaped cartilages provide flexibility to trachea.
71. (A)
72. (B) During inspiration the internal intercostal muscles relax and external intercostal muscles contract.
73. (A) Salivary amylase is also called as ptyalin.
74. (C) Amylase acts on starch, Bile salts do emulsification of fats, steapsin acts on lipids, pepsin acts on protein, rennin curdles the milk.
75. (B) Bile juice contains only salts, water and pigments, it does not contain any enzyme.
76. (D) Thigmo is touch, nasto is non-directed movement.
77. (A) Pollen tube follows sugars and other organic molecules to reach towards egg cell.
78. (B) Retina is site for Rods and Cones.
79. (C) Regulation of carbohydrate, fat and protein results of thyroid gland hormones T<sub>3</sub> and T<sub>4</sub>.
80. (C) Ethene/Ethylene causes ripening of fruits.
81. (D) Occipital lobe controls the vision function.
82. (C) Sympathetic nervous system deals with emergency situation.
83. (B) Roots of plants grow towards gravity thus show positive geotropism.
84. (B) Auxins promote apical growth.
85. (D) Family leads to genus, genus leads to species.
86. (B) Dicot leaves only have well differentiated palisade and spongy parenchyma.
87. (C) Fruit and flower occur only in Angiosperm.

88. (D) Amoeba, paramecium and euglena all shows contractile vacuole.
89. Serum is plasma – fibrinogen.
90. (A) Viruses are not categorized into any of 5 kingdom classification.
91. (D) Deposition of lignin is more in dead cells and is one of characteristic feature of sclerechyma cells.
92. (B) Thallophyta are auto-trophic and are not differentiated into stem, root and leaves. They also are the only one, without jacketed sex organs.
93. (A)  $R.Q. = \frac{CO_2 \text{ released}}{O_2 \text{ consumed}}$
94. (A) Inspiration is active process, since contraction of muscle requires energy and expiration is passive process.
95. (D) Filtration from glomerular contains urea, uric acid, glucose, amino acid and water
96. (B) Double fertilization is fusion of one male gametes with egg and other male gamete with control cell.
97. (A) Myxoedema is due to hypothyroidism, oxytocin is released from posterior pituitary, advenalin is released from adrenal glands.
98. (A) 1 meiotic division results in 4 functional male gamete and 1 meiotic division results in only one functional female gamete.
99. (D) More no. of hydrogen bonds will need higher temperature to break and separate the sequence.
100. (B) Erythrocytes doesnt contain DNA, so cannot be used for DNA fingerprinting.