Brilliant STUDY CENTRE
PALA

FOUNDATION PROGRAMME CLASS IX | **16-10-2021**
MOCK TEST

(Students who are studying in Class VIII)

PHYSICS + CHEMISTRY + BIOLOGY + MATHEMATICS

|	
Name of the Candidate :	
Mobile No. :	
E-mail Id :	
Class & Name of the School Studying :	
Roll number :	

INSTRUCTIONS

1. Please ensure stable internet connection before the commencement of the examination.
2. As this is an online exam please ensure that you have entered the personal and exam details without fail and ensure that there are 80 questions in your format.
3. The students may attend the exam from home or any other convenient place
4. Blank paper, clipboard, slide rules etc can be used for rough work.
5. Ensure that the candidate is not communicating with any other person throughout the exam duration.
6. Electronic gadgets in any form are not allowed to be used during the eaxm time.
7. The steady presence of the candidate in front of the system is absolutely necessary.
8. Presence of any other person near the system will not be allowed.
9. Each question has 4 possible options, of which only one is deemed as the most appropriate. **YOU ARE ASKED TO SELECT THE MOST APPROPRIATE OPTION AS THE CORRECT ANSWER.**
10. Each correct answer will be awarded **FOUR** mark each. There will be no negative marks.
11. Kindly be noted that your movements will be monitored under a proctoring suite and any malpractice will automatically result in the termination of the examination.

PHYSICS

1. Column I   Column II

   A) Wind   p) Wind transporting water

   B) Monsoon   q) Moving air

   C) Thunderstorms   r) Dark funnel shaped cloud

   D) Tornado   s) Swift movement of falling water droplets alongwith rising air that creates lightning and sound

   A) $A \rightarrow (p), B \rightarrow (q), C \rightarrow (r), D \rightarrow (s)$ B) $A \rightarrow (q), B \rightarrow (p), C \rightarrow (r), D \rightarrow (s)$

   C) $A \rightarrow (q), B \rightarrow (p), C \rightarrow (s), D \rightarrow (r)$ D) $A \rightarrow (p), B \rightarrow (q), C \rightarrow (s), D \rightarrow (r)$

2. Which of the following is not a unit of time

   A) Second   B) Parsec   C) Year   D) Shake

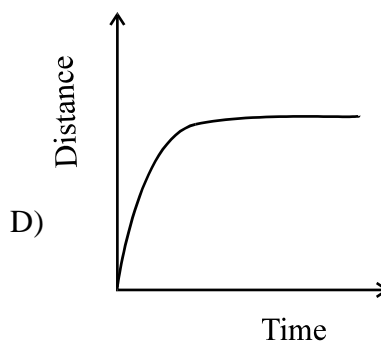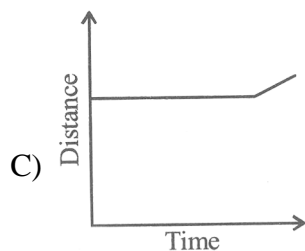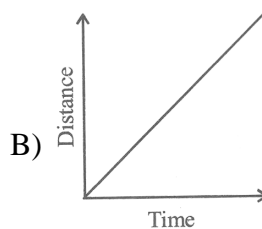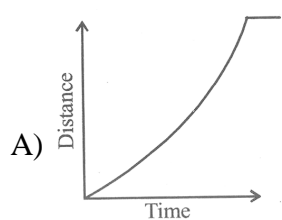3. In the fig below the length of the object is;
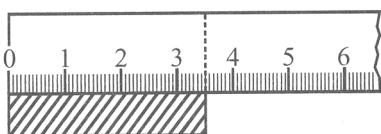
   A) 3.4 units   B) 3.5 units   C) 3.6 units   D) 3.3 units

4. The graph given here shows the motion of four runners-P,Q,R and S in a 5 km marathon. Whose motion is the fastest?
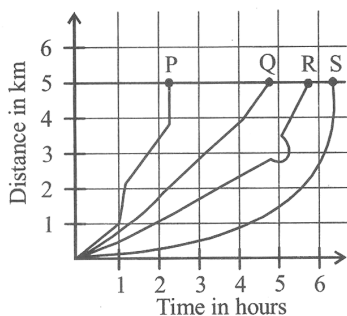
   A) P   B) Q   C) R   D) S

SPACE FOR ROUGH WORK

5. Which of the following graphs represents the movement of a car that is slowing down and comes to a complete stop?

A)

B)

C)

D)

6. In the picture is shown a time-distance graph of two moving bodies A and B.
Select the correct statement
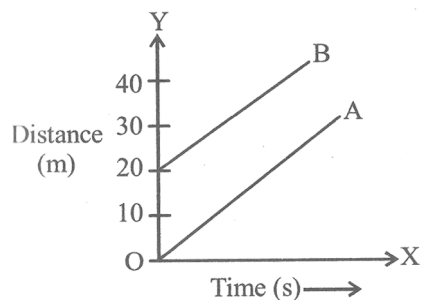
A) A is moving faster than B

B) A is moving slower than B

C) B is always 20 m behind A

D) B is always 20m ahead of A

SPACE FOR ROUGH WORK

7. A car and a bike are moving with same velocity on two different roads as shown below. If their K.E. are 100 J and 80 J respectively, then, the ratio of their respective masses is
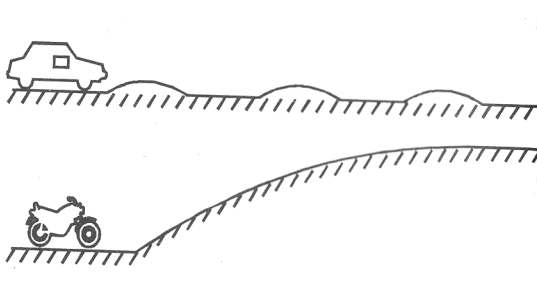
A) 4 : 5   B) 5 : 4   C) 2 : 5   D) 4 : 10

8. On which of the following scales of temperature, the temperature is never negative?

A) Celsius   B) Fahrenheit   C) Reumer   D) Kelvin

9. The final temperature of a mixture of water obtained by mixing equal volumes of water at 2^0C and 4^0C will be

A) 1^0C B) 2^0C C) 3^0C D) 4^0C

10. Four metal cans are identical except for the colour and texture of their outer surfaces. 100 cm^3 of water at 70^0C is poured into each can. Which can cools most rapidly?

| Outer Surface: | Black rough | Black shiny | White rough | White shiny |
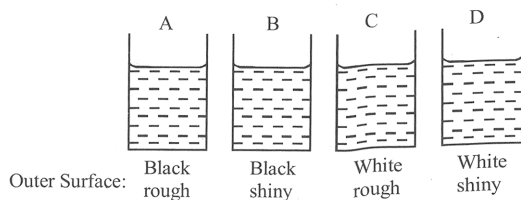
A) A   B) B   C) C   D) D

11. If the angle between the incident ray and the normal to the plane of the mirror is 40^0, the angle between the incident ray and the reflected ray will be

A) 40^0 B) 90^0 C) 80^0 D) 60^0

SPACE FOR ROUGH WORK

12. Beams of light are incident through the holes A and B and emerge out of box through the holes C and D respectively as shown in the figure. Which of the following could be inside the box?

Box
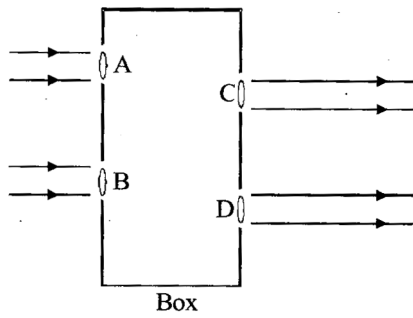
A) A rectangular glass slab

B) A convex lens

C) A concave lens

D) A prism

13. What energy changes take place in the figure given here, where a bulb glows with the help of a cell?
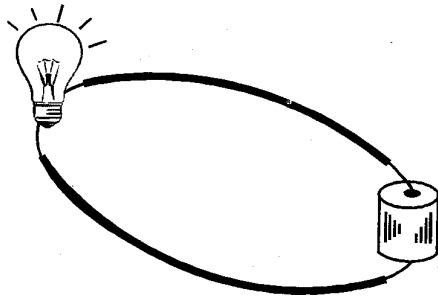
A) Electrical → light

B) Electrical → heat → light

C) Chemical → electrical → heat → light

D) Chemical → electrical → light → heat

SPACE FOR ROUGH WORK

14. Which of the following objects will make the bulb glow when put in position A of the material tester shown here

A) comb

B) iron nail

C) matchstick

D) book
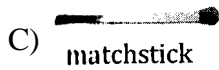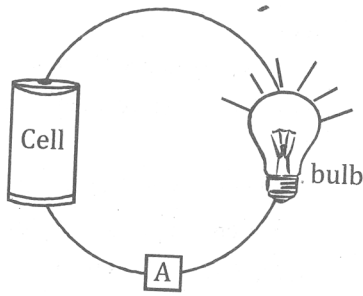
15.

Column I	Column II
A) Anemometer	p) Caused by high speed wind and air pressure differences
B) Cyclone	q) Accompanied by low pressure
C) High wind speed	r) Instrument used to measure wind speed
D) Wind movement	s) Caused by to uneven heating of earth surface

A) A → (r), B → (q) , C → (p), D → (s)   B) A → (r), B → (p), C → (q), D →(s)

C) A → (r), B → (s), C → (p), D → (q)   D) A → (r), B → (q) , C →(s), D → (p)

SPACE FOR ROUGH WORK

16. The bob of a simple pendulum is set in motion (to and fro motion). In the begining its time period was 1s. After 30 oscillations, the bob appears to have slowed down; the time of one complete oscillation then would be

    A) 1.5 s   B) 2s   C) 1 s   D) can't predict

17. If a body is moving at constant speed in a circular path, its

    A) Velocity is constant and its acceleration is zero

    B) Velocity and acceleration are both changing direction

    C) Velocity and acceleration are both increasing

    D) Velocity is constant and acceleration is changing direction

18. A man walks on a straight road from his home to market 2.5 km away with a speed of 5 km/h. Finding the market closed, he instantly turns and walks back home with a speed of 7.5 km/h. The average speed of the man over the interval of time 0 to 40 min. is equal to -

    A) 5 km/h   B) 25/4 km/h   C) 30/4 km/h   D) 45/8 km/h

19. The acceleration of a moving body can be found from

    A) area under velocity - time graph   B) area under distance - time graph

    C) slope of the velocity - time graph   D) slope of distance - time graph

20. If a train takes 5 hours to travel a distance of 250 km from Delhi to Jaipur, the average speed of the train is $A \times 10$ km/h, where A is

    A) 1   B) 2   C) 3   D) 5

21. A cat of mass 8 kg is running after a rat with a uniform acceleration of $1 m/sec^2$. After running 40 m it gets success to catch the rat. The work done by the cat in the process is

    A) 320 J   B) 640 J   C) 5 J   D) 10 J

22. A man throws a ball with a force of 20 N. Find the distance covered by the ball if work done is 60 J in this process.

    A) 3m   B) 9m   C) 6m   D) 12m

SPACE FOR ROUGH WORK

23. A boy pushes a toy cart along a level road and then lets it go.

As the cart is slowing down, the biggest energy change is from

A) heat to kinetic   B) kinetic to heat   C) kinetic to potential   D) potential to heat

24. No work is done when

A) a nail is plugged into a wooden board

B) a box is pushed along a horizontal floor

C) there is no component of force parallel to the direction of motion

D) there is no component of force normal to the direction of force

25. The potential energy of a freely falling object decreases progressively.

A) The low of conservation of energy is violated

B) Potential energy gets converted into kinetic energy progressively

C) Sum of Potential Energy and Kinetic Energy at any point during the free fall remains constant

D) Both B and C

CHEMISTRY

26. A chemical change may involve

A) Change in colour   B) Change in temperature

C) Evolution of gas   D) Any or all of the above

27. A man painted his main gate made up of iron, to

i) Prevent it from rusting   ii) Protect it from sun

iii) Make it look beautiful   iv) Make it dust free

Which of the above statement (s) is/ are correct?

A) i and ii   B) ii and iii   C) only i   D) i and iii

28. Which is the best method to prevent rusting?

A) Painting   B) Greasing   C) Galvanization   D) Precipitation

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SPACE FOR ROUGH WORK

29. Complete the following equation of rusting of iron

$$\text{Iron}\,(Fe) + A + \text{moisture} \rightarrow B$$
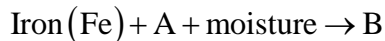
A) A = oxygen,   B = carbon dioxide

B) A = water,   B = oxygen

C) A = oxygen,   B = Rust (iron oxide)

D) A = Carbon dioxide, B = Oxygen

30. The reason for a physical change to be named as such is that:

A) The change occurs only in physical properties

B) Transfer of energy takes place

C) It is a reversible change

D) All of the above

31. Which of the process below involves change in state?

A) Evaporation   B) Condensation   C) Sublimation   D) All of the above

32. On which of the following day is world water day observed?

A) 22 march   B) 14 november   C) 2 october   D) 21 december

33. Water cycle does not involve which of the following?

A) Evaporation   B) Condensation   C) Formation of clouds   D) Rainwater harvesting

34. How much the earth's surface is covered with, water

A) 10%   B) 30%   C) 50%   D) 71%

35. The region covered by water is called....................

A) Hydrosphere   B) Ionosphere   C) Atmosphere   D) Water park

36. Which of the following is the reason for deptetion of water table?

A) Planting more trees   B) Heavy rainfall   C) Industrialization   D) Rainwater harvesting

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SPACE FOR ROUGH WORK

37. Which year is observed as the international year of fresh water

   A) 2005   B) 2003   C) 2006   D) 2008

38. H_2O exists in _____ number of physical states

   A) Three forms   B) Two forms   C) Five forms   D) No form

39. The solid form, snow and ice, is present.................. of the earth

   A) At the poles   B) At the equator

   C) Present in the atmosphere of the earth   D) In the oceans

40. The process of accumulation and storage of rain water for reuse is known as

   A) Water harvesting   B) Drip irrigation

   C) Infiltration   D) Bawri

41. The charge of proton is

   A) Positive   B) Negative   C) Neutral   D) None of these

42. The mass of electron is

   A) $1.6725 \times 10^{-24}\,g$ B) $9.109 \times 10^{-28}\,g$

   C) $1.6748 \times 10^{-24}\,g$ D) $9.109 \times 10^{28}\,g$

43. Number of neutrons in $^{27}_{13}Al$ is

   A) 13   B) 15   C) 17   D) 14

44. The electronic configuration of the calcium is

   A) 2,8,8,1   B) 2,8,8,2   C) 2,8,8   D) 2,8,8,3

45. The correct chemical formula of Gypsum is

   A) $CaSO_4. 2\,H_2O$ B) $CaSO_4. \dfrac{1}{2} H_2O$

   C) $CaCO_3. 2H_2O$ D) $CaOCl_2$

SPACE FOR ROUGH WORK

46. The molecular mass of sulphuric acid (H_2SO_4) is

   A) 100   B) 98   C) 80   D) 90

47. Cation is formed from a neutral atom by

   A) The gain of an electron   B) The loss of an electron

   C) No change   D) None of these

48. Atomicity of ozone is

   A) 4   B) 3   C) 2   D) 1

49. $FeSO_4 . 7H_2O$ is called

   A) Oil of vitriol   B) Blue vitriol

   C) Green vitriol   D) Washing Soda

50. Nylon is a

   A) Natural fibre   B) Semisynthetic fibre

   C) Variety of silk   D) Synthetic fibre

MATHEMATICS

51. Which of the following is a pythagorean triplet?

   A) 16, 18, 20   B) 1, 2, 3   C) 30, 40, 50   D) 50, 51, 52

52. If one of the interior angles of a regular polygon is to be equal to $\left(\dfrac{9}{8}\right)$ times of one of the interior angles of a regular hexagon, then the number of sides of the polygon is:

   A) 7   B) 8   C) 4   D) 5

53. In right triangles ABC and DEF if hypotenuse AB=EF and side AC=DE, then $\triangle ABC \cong$ _____

   A) $\triangle EFD$ B) $\triangle DEF$ C) $\triangle ABC$ D) $\triangle CBA$

SPACE FOR ROUGH WORK

54. If $\triangle ABC \cong \triangle QRP$, then which of the following statement is correct

A) $\angle A = \angle P$ B) $\angle B = \angle R$ C) $\angle A = \angle R$ D) $\angle C = \angle Q$

55. If $\triangle ONE \cong \triangle TWO$, then $\triangle NEO =$ _____ , $OE =$ _____

A) $\triangle WOT, TO$ B) $\triangle TOW, OT$ C) $\triangle ONE, TW$ D) $\triangle OWT, OT$

56. Which of the following figure are not congruent

A) Two squares of same perimeter

B) Two equilateral triangle of same perimeter

C) Two regular hexagon of same perimeter

D) Square and an equilateral triangle of same perimeter

57. $\left[6^{-1} + \left(\dfrac{3}{2} \right)^{-1} \right]^{-1} =$

A) $\dfrac{2}{3}$ B) $\dfrac{5}{6}$ C) $\dfrac{6}{5}$ D) $\dfrac{3}{2}$

58. Find the value of 'm' so that $(3)^{m+1} \times (3)^{5} = (3)^{7}$

A) 0   B) –1   C) 1   D) 2

59. By what number $\left(\dfrac{3}{4} \right)^{-3}$ should be divided so that quotient becomes 128?

A) $\dfrac{1}{54}$ B) $\dfrac{1}{72}$ C) $\dfrac{1}{90}$ D) $\dfrac{1}{108}$

60. Find the value of x for which $2^{x+4} - 2^{x+2} = 3$

A) $x = -2$ B) $x = 2$ C) $x = 1$ D) $x = -1$

SPACE FOR ROUGH WORK

61. Degree of a constant term is _____

 A) One B) Zero C) Two D) Three

62. If $x + \dfrac{1}{x} = 7$, then the value of $x^2 + \dfrac{1}{x^2}$ is

 A) 49 B) 51 C) 47 D) 7

63. The algebraic expression of the statement ' product of numbers a and b subtracted from 7' is

 A) ab –7 B) 7 – ab C) ab D) 7ab

64. The value of $(47)^2 + (43)^2 - 2(47)(43)$

 A) 4 B) 8 C) 16 D) 32

65. Ascending order of the fractions $\dfrac{3}{4}, \dfrac{5}{8}, \dfrac{7}{15}, \dfrac{4}{9}$

 A) $\dfrac{7}{15}, \dfrac{3}{4}, \dfrac{5}{8}, \dfrac{4}{9}$ B) $\dfrac{4}{9}, \dfrac{7}{15}, \dfrac{5}{8}, \dfrac{3}{4}$ C) $\dfrac{3}{4}, \dfrac{7}{15}, \dfrac{5}{8}, \dfrac{4}{9}$ D) $\dfrac{5}{8}, \dfrac{4}{9}, \dfrac{7}{15}, \dfrac{3}{4}$

66. If 7 is subtracted from five times a number, the result is 63. Find the number

 A) 10 B) 12 C) 14 D) 16

67. Solve the equation $\dfrac{x}{4} - \dfrac{x}{5} = 1$

 A) 20 B) 9 C) 1 D) $\dfrac{2x}{9} = 1$

68. If $\dfrac{3x - 5}{2} = \dfrac{5.005}{2.002}$, then x =

 A) $\dfrac{5}{3}$ B) $\dfrac{12.5}{3}$ C) $\dfrac{10}{3}$ D) 0

SPACE FOR ROUGH WORK

69. The denominator of a fraction is greater than numerator by 6. If 3 is added to numerator and 2 is subtracted from denominator, the fraction becomes $\dfrac{6}{7}$, then the equation so formed is

A) $\dfrac{x+4}{x+3}=\dfrac{6}{7}$ 　　　　B) $\dfrac{x}{x+6}+\dfrac{3}{-2}=\dfrac{6}{7}$ 　　　　C) $\dfrac{x}{x+6}+\dfrac{-2}{3}=\dfrac{6}{7}$ 　　　　D) $\dfrac{x+3}{x+4}=\dfrac{6}{7}$

70. If twice a certain number is diminished by five, the result is equal to twelve added to the number. Find the number:

A) 18 　　　　B) 16 　　　　C) 15 　　　　D) 17

71. Which is equivalent fraction of the decimal 3.46

A) $\dfrac{346}{10}$ 　　　　B) $\dfrac{346}{100}$ 　　　　C) $\dfrac{346}{1000}$ 　　　　D) $\dfrac{346}{10000}$

72. The value of $\dfrac{0.011 \times 0.110}{0.0121} =$

A) 0.01 　　　　B) 0.1 　　　　C) 10 　　　　D) 121

73. A car runs 16 km using 1 litre of petrol. How much distance will it cover using $2\dfrac{3}{4}$ litres of petrol

A) 44 km 　　　　B) 546 km 　　　　C) 48 km 　　　　D) 52 km

74. $1.01 \times 1.1 \times 0.01 \times 1 = $ ....

A) 0.01111 　　　　B) 0.1111 　　　　C) 0.01211 　　　　D) 0.12121

75. By what rational number should $\dfrac{-2}{9}$ be multiplied to obtain 5

A) $\dfrac{-15}{2}$ 　　　　B) $\dfrac{-25}{2}$ 　　　　C) $\dfrac{-45}{2}$ 　　　　D) –5

SPACE FOR ROUGH WORK

BIOLOGY

76. Trophic levels are formed by

    A) Plants

    B) Herbivores

    C) Carnivores

    D) Organisms linked in food chain

77. Which is not a greenhouse gas?

    A) NH_3
    B) CH_4
    C) CO_2
    D) CO

78. Deforestation has an alarming effect on

    A) Soil erosion

    B) Increase in grazing area

    C) Weed control

    D) Sunlight

79. The covering of large trees that serve as a roof to shelter an area or other plants in forests is called

    A) Canopy
    B) Crown
    C) Carnival
    D) None of these

80. Tiger, Lion, Leopard belong to which of the following group?

    A) Producers
    B) Herbivores
    C) Decomposers
    D) Carnivores

81. The soil which stay loose and allow moisture to penetrate easily but do not retain is _____

    A) Sandy soil
    B) Clayey soil
    C) Loamy soil
    D) Alluvial soil

82. Which soil horizon contains humus?

    A) A - horizon
    B) B - horizon
    C) C - horizon
    D) R - horizon

83. The water holding capacity is the highest in

    A) Sandy soil

    B) Clayey soil

    C) Loamy soil

    D) Mixture of sand & Loam

84. Growth of root in the soil is ?

    A) Geotropism
    B) Phototropism
    C) Chemotropism
    D) Heterotropism

SPACE FOR ROUGH WORK

85. Iodine solution is used for

   A) Testing of fat
   B) Testing of carbohydrate
   C) Testing of protein
   D) Testing of vitamins

86. The deficiency of vitamin C causes which of the following diseases?

   A) Beri -Beri   B) Rickets   C) Scurvy   D) Night blindness

87. Father of green revolution in India?

   A) Norman Borlaug   B) M.S Swaminathan   C) Varghese Kurian   D) Kurosawa

88. Two different organisms living together and benefitting from each other are known as _____

   A) Saprophytes   B) Heterotrophs   C) Parasites   D) Symbionts

89. An example of an autotrophic plant

   A) Mushroom   B) Neem   C) Green algae   D) Both 1 and 2

90. Maximum photosynthesis occurs in

   A) Blue light   B) Red light   C) Green light   D) Infra red light

91. Which of the following equations most adequately sums up the photosynthetic reaction?

   A) $CO_2 + H_2O \longrightarrow CH_2O + O_2$

   B) $C_6H_{12}O_6 + 6O_2 \longrightarrow 6CO_2 + 6H_2O$

   C) $6CO_2 + 6H_2O \longrightarrow C_6H_{12}O_6 + 6O_2$

   D) $6CO_2 + 12H_2O \longrightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$

92. Hibernation means

   A) Long sleep during winter
   B) Short sleep during winter
   C) Short sleep during summer
   D) long sleep during summer

SPACE FOR ROUGH WORK

93. The bones are light, hollow, spongy and contain many air cavities, are the adaptations?

   A) Aquatic animals   B) Aerial animals   C) Amphibians animals   D) All of these

94. The day to day condition of the atmosphere at a place is called

   A) climate   B) weather   C) temperature   D) None of these

95. The value of diastolic blood pressure is

   A) 120 mm Hg   B) 80 mm Hg   C) 120/80 mm Hg   D) 40 mm Hg

96. Which among the following is not true regarding transpiration?

   A) Transpiration cools the plant

   B) It helps in the conduction of water and dissolved salt through xylem

   C) It helps in the conduction of food through phloem

   D) Water is lost in the form of vapour through stomata

97. Which of the following is not a component of phloem?

   A) sieve tube   B) Companion cells   C) Tracheids   D) Parenchyma

98. Urine is exerted out of the body through

   A) Pelvis   B) Ureter   C) Urinary bladder   D) Urethra

99. Average weight of kidney is about:

   A) 1.2 to 1.5 kg   B) 1.2 to 1.7 kg   C) 0.12 to 0.15 kg   D) 0.12 to 0.17 kg

100. Scion is a term in relation to:

   A) Layering   B) Cutting   C) Grafting   D) Micropropagation

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SPACE FOR ROUGH WORK

FOUNDATION - CLASS IX (STUDYING VIII) - KEY

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