Monthly Progressive Test

Class: X (G)

Subject: PCMB

Academic Excellence Programme TECHNO ACE

Test Booklet No.: MPT06 (G) **Test Date:** 03102024

Time: 120 mins **Full Marks: 200**

Important Instructions :

1. The Test is of 120 mins duration and the Test Booklet contains 100 multiple choice questions of single correct option only. There are four sections with four subjects. You have to attempt all 100 questions (Candidates are advised to read all 100 questions). Questions 1 to 25 contain Physics, Questions 26 to 50 contain Chemistry, Questions 51 to 75 contain Mathematics, Questions 76 to 100 contain Biology.
2. Each question carries 2 marks. For each correct response, the candidate will get 2 marks. There is no negative mark for wrong response. The maximum mark is 200.
3. Use Blue / Black Ball point Pen only for writing particulars marking responses on Answer Sheet.
4. Rough work is to be done in the space provided for this purpose in the Test Booklet only.
5. On completion of the test, the candidate must handover the Answer Sheet to the invigilator before leaving the Room / Hall. The candidates are allowed to take away this Test Booklet with them.
6. The CODE for this Booklet is Off Line MPT06(G)03102024.
7. The candidates should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet. Do not write your UID No. anywhere else except in the specified space. Use of white fluid for correction is NOT permissible on the Answer Sheet. **Do not scrible or write on or beyond discrete bars of OMR Sheet at both sides**.
8. Each candidate must show on-demand his/her Registration document to the Invigilator.
9. No candidate, without special permission of the Centre Superintendent or Invigilator, would leave his/her seat.
10. Use of Electronic Calculator/Cellphone is prohibited.
11. The candidates are governed by all Rules and Regulations of the examination with regard to their conduct in the Examination Hall. All cases of unfair means will be dealt with as per Rules and Regulations of this examination.
12. No part of the Test Booklet and Answer Sheet shall be detached under any circumstances.
13. There is no scope for altering response mark in Answer Sheet.

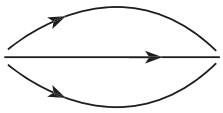
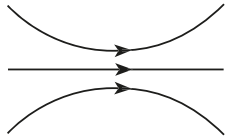
Space For Rough Works

Physics

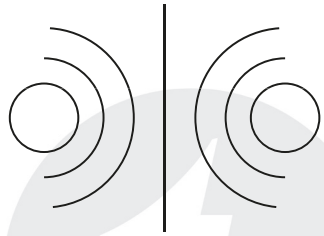
1. Alnico is alloy, used for making strong permanent magnet than those made of ordinary steel. It is alloy of

   Ⓐ Aluminium Ⓑ Nickel Ⓒ Cobalt Ⓓ All of the above

2. The magnetic field line which exists well inside a current-carrying solenoids

   Ⓐ  Ⓑ  Ⓒ  Ⓓ None of the above

3. Below, represents magnetic field lines caused by a current-carrying conductor which is

   Ⓐ A short straight wire Ⓑ A solenoid

   Ⓒ A circular coil Ⓓ A long straight wire

4. The direction of current in the coil at one end of an electromagnet is clockwise. This end of electromagnet will be

   Ⓐ N-pole Ⓑ S-pole Ⓒ East pole Ⓓ West pole

5. The effect of current can be utilised in detecting a current-carrying wire conceals in a wall is

   Ⓐ Magnetic Ⓑ Electric Ⓒ Gravity Ⓓ Heating

6. The magnetic effect of current was discovered by

   Ⓐ Maxwell Ⓑ Fleming Ⓒ Oerested Ⓓ Faraday

7. The strength of the magnetic field between the poles of an electromagnet would be unchanged if:

   Ⓐ Distance between the poles of electromagnet were doubled

   Ⓑ Material of the core of electromagnet were changed

   Ⓒ Current in the electromagnet winding were doubled

   Ⓓ Direction of current in electromagnet winding were reversed

8. Magnets are commonly found in
   Ⓐ Science laboratory Ⓑ Toys
   Ⓒ Both Ⓐ and Ⓑ Ⓓ None of the above
9. The earth itself behaves as a tiny magnet
   Ⓐ True Ⓑ Sometimes True Ⓒ False Ⓓ None of these
10. MRI is
   Ⓐ Magnetic resonance imaging
   Ⓑ A diagnostic technique
   Ⓒ Magnetism inside human body is used to form images of tissues
   Ⓓ All of the above
11. Certain rocks
   Ⓐ Behave as natural magnets
   Ⓑ Contain magnetite, a magnetic compound
   Ⓒ Act as direction finding N and S
   Ⓓ All of the above
12. Materials used to make permanent magnet
   Ⓐ Alnico Ⓑ Carbon steel Ⓒ Cobalt steel Ⓓ All of the above

Assertion-Reason type Questions (13–14):

Directions: Read the following questions and choose any one of the following four responses.

A. If both Assertion and Reason are true and Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If Assertion is false but Reason is true.

13. **Assertion:** A coil is made by winding several turns of insulated wire in a circular form.
   Reason: If a current passes through the coil,each turn produces it's own magnetic field.
   Ⓐ A Ⓑ B Ⓒ C Ⓓ D
14. **Assertion:** If a coil has n turns,the magnetic field due to the coil is n times stronger than the that due to a single turn.
   Reason: The strength of the magnetic field due to a current carrying circular coil is proportional to the number of turns.
   Ⓐ A Ⓑ B Ⓒ C Ⓓ D

Case Based Question : (Question No. 15)

The most striking thing about magnets is the attraction and repulsion between them. How do we explain these forces between two magnets? We say that a magnet produces a magnetic field in the space around it, which exerts a force on any other magnet placed near it. Each point in this field has a particular strength. The direction of the magnetic field due to a magnet at a point near it can be found by placing a magnetic compass at that point. The compass needle comes to rest along a particular direction. The direction of net magnetic field at that point is the direction from the south pole to the north pole of the needle.

15. Write the nature of force between N-N or S-S poles between two magnets.

Ⓐ Attraction Ⓑ No force Ⓒ Repulsion Ⓓ None of these

16. The image of a distant window is formed at a distance of 20 cm from a convex lens, then the focal length of this convex lens will be

Ⓐ 15 cm Ⓑ 30 cm Ⓒ 25 cm Ⓓ 20 cm

17. A convex lens has a focal length of 30 cm. Where should an object be placed infront of this convex lens so as to obtain a real, inverted, same size (of object) image

Ⓐ 40 cm Ⓑ 60 cm Ⓒ 30 cm Ⓓ 50 cm

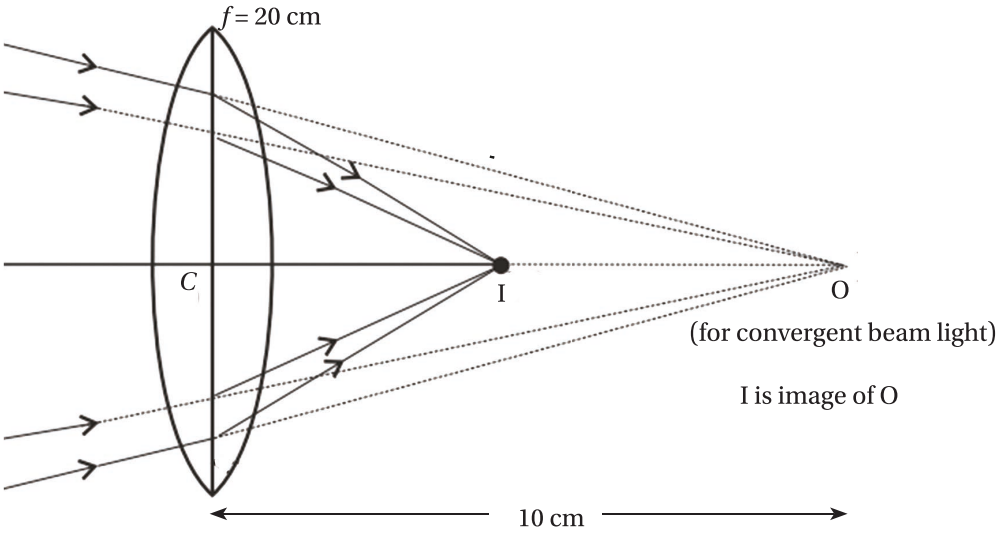
18. An object is placed infront of convex lens of focal length 15 cm. In order to obtain a virtual magnified image, the object distance u =

Ⓐ 10 cm Ⓑ 15 cm Ⓒ 20 cm Ⓓ 25 cm

19. A lens of focal length 12 cm forms an erect image three times the size of the object. The distance between object and image is

Ⓐ 8 cm Ⓑ 24 cm Ⓒ 20 cm Ⓓ 16 cm

20.



Then CI =

Ⓐ 5 cm Ⓑ 6.67 cm Ⓒ 8 cm Ⓓ 5.5 cm

21. Magnetic field strength in coil can be increased by

Ⓐ Increasing turns Ⓑ Decreasing current

Ⓒ Increasing radius Ⓓ None of these

22. Magnetic field strength in the coil can be increased by

Ⓐ Decreasing no of turns Ⓑ Increasing current

Ⓒ Increasing radius Ⓓ None of these

23. Magnetic field strength in the solenoid can be increased

Ⓐ By increasing current Ⓑ By increasing no of turns

Ⓒ Both Ⓐ and Ⓑ are correct Ⓓ None of these

24. In clock rule for clockwise current in a loop, front face is

Ⓐ South pole Ⓑ N-pole Ⓒ No pole Ⓓ None of these

25. In Fleming's left hand rule middle finger represents

Ⓐ Thrust Ⓑ Field Ⓒ Current Ⓓ Pressure

Chemistry

26. Among the given molecules, which is an amphoteric oxide ?

Ⓐ N_2O Ⓑ As_2O_3 Ⓒ CaO Ⓓ Fe_2O_3

27. An element has the electronic configuration 2.8.8.2. In modern periodic table, it is at

Ⓐ 4th period & 10th group Ⓑ 4th period & 8th group

Ⓒ 4th period & 2nd group Ⓓ 4th period & 6th group

28. Correct order of atomic radius is

Ⓐ N > O > F Ⓑ N > F > O Ⓒ F > O > N Ⓓ F > N > O

29. Which non-metal is used as a food preservative?

Ⓐ N_2 Ⓑ Cl_2 Ⓒ H_2 Ⓓ O_2

30. During galvanization, which metal is coated over iron material?

Ⓐ Cu Ⓑ Sn Ⓒ Zn Ⓓ Pt

31. In N_2 molecule, lone pair present = X and bonds present = Y. The value of $(x + y)$ will be

Ⓐ 7 Ⓑ 4

Ⓒ 6 Ⓓ No option is correct

32. Among the given statements which are correct?

(i) Due to corrosion of aluminium, $AlCl_3$ is formed.

(ii) Sodium is extracted by electrolytic reduction method.

(iii) Roasting is done for sulphide ores.

Ⓐ i, ii, iii Ⓑ i, ii Ⓒ ii, iii Ⓓ i, iii

33. According to IUPAC rules of naming of elements the formula of the element having atomic number 108 is

Ⓐ Uns Ⓑ Uno Ⓒ Uuu Ⓓ Uon

34. An element 'X' have atomic number 20 and another element 'Y' have atomic number 16. When they react with each other then the correct formula of the formed compound is

Ⓐ XY_2 Ⓑ X_2Y Ⓒ X_2Y_3 Ⓓ XY

Assertion Reason Type Question (35–36):

Read the two statements carefully and select the correct option given below.

A: Assertion and Reason both are correct and Reason is the correct explanation of Assertion

B: Assertion and Reason both are correct and Reason is not the correct explanation of Assertion

C: Assertion is correct but Reason is wrong

D: Assertion is wrong but Reason is correct

35. **Assertion :** Mendeleev's periodic table cannot give complete idea about the chemical properties of the elements.

Reason : This periodic table is based on the atomic weight of the elements.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

36. **Assertion :** In the modern periodic table, if we move from top to bottom in a group then radius increases.

Reason : All elements in the same group have same number of electrons in the outermost shell.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

Case Study Based Question (37–38):

Modern periodic table contains 18 groups and 7 periods among them group 1 and group 2 are strong metals, group 3 to 12 are transitional elements and group 13 to 18 are non-metals. Two rows are placed below the main body of the periodic table and they are known as Lanthanides (atomic number 58 to 71) and actinides (atomic number 90 to 103). In the modern periodic table the elements are arranged according to their atomic numbers.

37. In modern periodic table, the elements are arranged according to their

Ⓐ effective nuclear charge Ⓑ radius

Ⓒ mass number Ⓓ number of protons

38. Transitional elements are placed in the groups

Ⓐ Group 1 and 2 Ⓑ Group 13 to 18 Ⓒ Group 3 to 12 Ⓓ Group 4 to 10

39. Metal 'X' reacts with both $FeSO_4$ and $CuSO_4$ solution and metal 'Y' reacts with only $CuSO_4$ solution while metal 'Z' does not react neither with $FeSO_4$ nor $CuSO_4$ solutions. The correct order of reducing power of the metals is

Ⓐ $Z > Y > X$ Ⓑ $X > Z > Y$ Ⓒ $X > Y > Z$ Ⓓ $Z > X > Y$

40. Consider the equation $x\,Al_2O_3 + y\,NaOH \longrightarrow z\,NaAlO_2 + p\,H_2O$. The correct value of $(x + y + z + p)$ is equal to

Ⓐ 8 Ⓑ 6 Ⓒ 7 Ⓓ 4

41. In which of the following option, all metals do not react with hot or cold water but reacts with steam only?

Ⓐ Na, Ca, K Ⓑ Fe, Mg, Zn Ⓒ Fe, Ca, Zn Ⓓ Fe, Al, Ca

42. In which of the following option both the elements have same number of electrons in their outermost shells ?

Ⓐ Nitrogen and phosphorus Ⓑ Calcium and carbon

Ⓒ Chlorine and sodium Ⓓ Nitrogen and boron

43. Which ore needs calcination ?

Ⓐ Carbonate Ⓑ Chloride Ⓒ Sulphide Ⓓ Bromide

44. CuO reacts with H_2 gas the correct statement is

Ⓐ CuO is reduced to Cu and H_2 is oxidise to H_2O_2

Ⓑ CuO is reduced to Cu and H_2 is oxidise to H_2O

Ⓒ CuO is oxidised to Cu and H_2 is reduced to H_2O

Ⓓ None of CuO or H_2 suffer oxidation or reduction

45. When a small amount of phenolphthalein is added to dilute sulphuric solution then the colour of the solution becomes

Ⓐ Colourless to blue
Ⓑ Colourless to pink
Ⓒ Solution remains colourless
Ⓓ Colourless to green

Case Study Based Questions (46–47):

Read the passage carefully and answer the following questions:

All metals do not react with oxygen at the same rate. Different metals show different reactivities towards oxygen. Almost all metals combine with oxygen to form metal oxides. Metal oxides are basic in nature but some metal oxides, such as aluminium oxide, zinc oxide etc show both acidic as well as basic behaviour. Most metal oxides are insoluble in water but some like sodium oxide and potassium oxide dissolve in water to produce alkalis.

46. Arrange the metals in the correct order of their reactivity

Ⓐ Mg > Al > Zn > Fe
Ⓑ Al > Mg > Fe > Zn
Ⓒ Mg > Zn > Al > Fe
Ⓓ Al > Fe > Zn > Mg

47. Why does the magnesium ribbon need to be cleaned before burning it in air?

Ⓐ To increase efficiency
Ⓑ To remove the oxide layer from it
Ⓒ To decrease its efficiency
Ⓓ All of the above

Assertion Reason Type Question (48–49):

Read the two statements carefully and select the correct option given below.

A: Assertion and Reason both are correct and Reason is the correct explanation of Assertion

B: Assertion and Reason both are correct and Reason is not the correct explanation of Assertion

C: Assertion is correct but Reason is wrong

D: Assertion is wrong but Reason is correct

48. **Assertion :** Sodium is kept immersed in kerosene oil.

Reason : Sodium is very reactive metal.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

49. **Assertion :** Platinum, gold and silver are used to make Jewellery.

Reason : It is because they are very lustrous.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

50. The compound obtained on reaction of red hot iron with steam is/are:

Ⓐ Fe_2O_3 Ⓑ FeO Ⓒ Fe_3O_4 Ⓓ Fe_2O_3 and Fe_3O_4

Mathematics

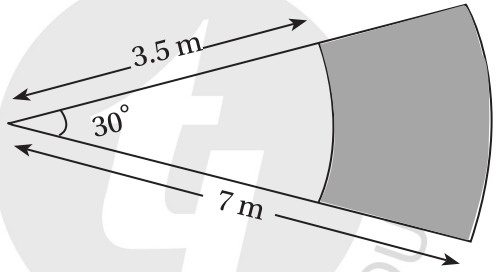
51. A blacksmith Rajesh bent a steel wire, in the form of a square, encloses an area of 121 sq cm. The same wire he bent in the form of a circle, then the area of the circle is

Ⓐ $22\ cm^2$ Ⓑ $154\ cm^2$ Ⓒ $44\ cm^2$ Ⓓ $77\ cm^2$

52. A square of side 4cm is inscribed in a circle, then the area enclosed between the circle and the square is

Ⓐ $10\frac{1}{7}\ cm^2$ Ⓑ $9\frac{1}{7}\ cm^2$ Ⓒ $25\frac{1}{7}\ cm^2$ Ⓓ $16\ cm^2$

53. Flowers are to be planted in the shaded portion which is shown by sectors of two concentric circles of radii 7 m and 3.5 m, then the area of the shaded region is $\left(\text{use } \pi = \frac{22}{7}\right)$



Ⓐ $9.625\ m^2$ Ⓑ $9\ m^2$ Ⓒ $10\ m^2$ Ⓓ $8.5\ m^2$

54. If the n^{th} term of sequence is $3 + 2n$, then the sum of its first 20 terms is

Ⓐ 480 Ⓑ 520 Ⓒ 500 Ⓓ 460

55. ABC is a triangle and DE is drawn parallel to BC cutting the other sides at D and E. If AB = 3.6 cm, AC = 2.4 cm and AD = 2.1 cm, then AE is equal to

Ⓐ 1.4 cm Ⓑ 1.8 cm Ⓒ 1.2 cm Ⓓ 1.05 cm

56. Mid-point of the line-segment joining the points (-5, 4) and (9, - 8) is

Ⓐ (–7, 6) Ⓑ (2, – 2) Ⓒ (7, – 6) Ⓓ (–2, 2)

57. If $\sec\theta = \frac{5}{4}$, then find the value of $\frac{1-\tan^2\theta}{1+\tan^2\theta}$.

Ⓐ $\frac{9}{25}$ Ⓑ $\frac{9}{16}$ Ⓒ $\frac{7}{25}$ Ⓓ $\frac{7}{16}$

Assertion Reason based Questions (58–59):

Directions: In the following questions, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

(c) Assertion (A) is true but reason (R) is false.

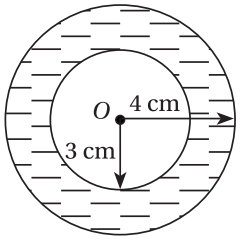
(d) Assertion (A) is false but reason (R) is true.

58. **Assertion (A) :** A sector is cut from a circle of radius 21 cm. The angle of the sector is 150°. Then the length of the arc is 55 cm.

Reason (R) : Length of arc $= \frac{\theta}{360^\circ} \times 2\pi r$.

Ⓐ a Ⓑ b Ⓒ c Ⓓ d

59. **Assertion (A) :** In the adjoining figure, area of the ring = 22 cm^2.



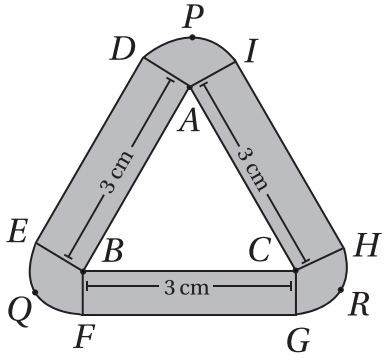
Reason (R) : Area of the ring $= \pi r_1^2 - \pi r_2^2$

Ⓐ a Ⓑ b

Ⓒ c Ⓓ d

Case Study Based Questions (60–62):

Consider an equilateral triangle with side 3 cm. Now an ant runs around the triangle in such a way that the ant is always at a distance of 1 cm from the side of a triangle.



On the basis of the above information answer the following questions.

60. $DE = FG = HI =$ **?**

Ⓐ 3 cm Ⓑ 6 cm Ⓒ 9 cm Ⓓ 12 cm

61. $\overset{\frown}{DPI} = \overset{\frown}{EQF} = \overset{\frown}{GRH} =$?

Ⓐ $\frac{\pi}{3}$ cm Ⓑ $\frac{2\pi}{3}$ cm Ⓒ $\frac{7\pi}{6}$ cm Ⓓ $\frac{5\pi}{9}$ cm

62. Total distance travelled by the ant

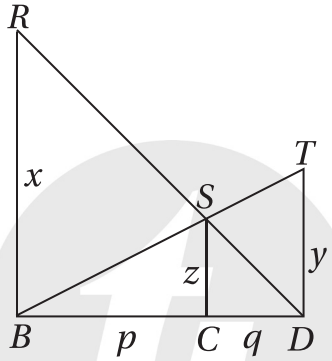
Ⓐ $(\pi + 9)$ cm Ⓑ $(2\pi - 9)$ cm Ⓒ $(2\pi + 9)$ cm Ⓓ $(\pi - 9)$ cm

63. Which of these terms of the sequence given is the first negative term?

$15, 13\frac{3}{4}, 12\frac{1}{2}, 11\frac{1}{4}, \ldots$

Ⓐ 12^{th} Ⓑ 13^{th} Ⓒ 14^{th} Ⓓ 18^{th}

64. In the figure given below, if *RB*, *SC* and *TD* are perpendiculars to *BD* with the lengths indicated, then $\frac{x}{y}$ is equal to



Ⓐ $\frac{p}{q}$ Ⓑ $\frac{p}{p-q}$ Ⓒ $\frac{q}{p}$ Ⓓ $\frac{p}{p+q}$

65. If the line joining $A(2, 3)$ and $B(-5, 7)$ is cut by x-axis at P, then $AP : PB$ is

Ⓐ 3: 7 Ⓑ –3 : 7 Ⓒ 7 : 3 Ⓓ 7 : –3

66. The LCM of two numbers is 1200.Which of the following cannot be their HCF?

Ⓐ 600 Ⓑ 400 Ⓒ 500 Ⓓ 200

67. The pair of linear equations $7x - 3y = 4$, $3x + \frac{k}{7}y = 4$ is consistent only when

Ⓐ $k = 9$ Ⓑ $k = -9$ Ⓒ $k \neq -9$ Ⓓ $k \neq 7$

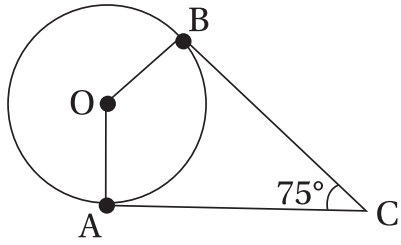
68. If $x^2 + k(4x + k - 1) + 2 = 0$ has equal roots, then $k =$

Ⓐ $1, -\frac{2}{3}$ Ⓑ $-1, \frac{2}{3}$ Ⓒ $\frac{3}{2}, \frac{1}{3}$ Ⓓ $-\frac{3}{2}, -\frac{1}{3}$

69. The sum of the digits of a two digit number is 9. If 27 is added to it, the digits of the number get reversed. The number is

Ⓐ 25 Ⓑ 72 Ⓒ 63 Ⓓ 36

70. In figure, O is the centre of the circle, CA is tangent at A and CB is tangent at B drawn to the circle. if $\angle ACB = 75°$, then $\angle AOB =$



Ⓐ 75° Ⓑ 85° Ⓒ 95° Ⓓ 105°

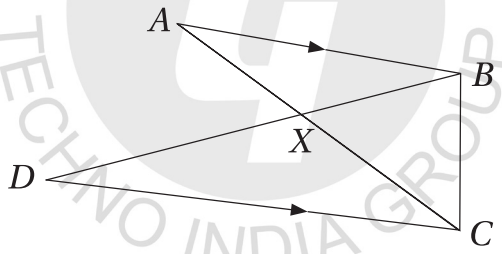
71. If the sum of the area of two circles with radii 3 cm and 4 cm is equal to the area of a circle of radius *r*, then $r =$

Ⓐ 3 cm Ⓑ 4 cm Ⓒ 5 cm Ⓓ 6 cm

72. The centre of a circle passing through the points (7, –5), (3, –7) and (3, 3) is

Ⓐ (5, –6) Ⓑ (5, –1) Ⓒ (3, 2) Ⓓ (3, –2)

73. In the given diagram, *AB* is parallel to *DC*. *AC* and *BD* intersect at *X*. If $AX = 4$ cm, $XC = 6$ cm and $BD = 14$ cm, then find *BX*



Ⓐ 4.5 cm Ⓑ 5.6 cm Ⓒ 8.5 cm Ⓓ 12 cm

74. If the first term of an AP is 17, the last term is $-12\frac{3}{8}$ and the sum is $25\frac{7}{16}$, then find the common difference

Ⓐ $-\frac{43}{18}$ Ⓑ $-\frac{45}{17}$ Ⓒ $-\frac{47}{16}$ Ⓓ $\frac{47}{16}$

75. The value of $\frac{\sin\theta}{1+\cos\theta}+\frac{1+\cos\theta}{\sin\theta}$ is

Ⓐ $2\sin\theta$ Ⓑ $2\operatorname{cosec}\theta$ Ⓒ $2\tan\theta$ Ⓓ $2\cot\theta$

76. 'Homeostasis' term was proposed by:

Ⓐ Claude Bernard Ⓑ Walter Cannon

Ⓒ Marcello Malphigi Ⓓ Henle

77. Excretory materials are formed in :

Ⓐ Kidney Ⓑ Rectum Ⓒ Liver Ⓓ Every cell in body

78. Urine leaves the kidney through :

Ⓐ Urethra Ⓑ Collecting duct Ⓒ Renal vein Ⓓ Ureter

79. The cerebellum is concerned with-

Ⓐ Perception Ⓑ Coordination and movement

Ⓒ Vision Ⓓ Memory

80. Afferent nerve fibre conducts impulse from—

Ⓐ CNS to effector Ⓑ Receptor to CNS

Ⓒ Receptor to effector Ⓓ Effector to receptor

81. Which of the following structures shows a diploid set of genome?

Ⓐ Egg Ⓑ Zygote Ⓒ Pollen Ⓓ Endosperm

82. A mechanical barrier to avoid pregnancy is

Ⓐ Condom Ⓑ Contraceptive pills

Ⓒ Surgical method Ⓓ Abortion

Case Study Based Question (83–85):

Answer the questions on the basis of your understanding of the following passage :

The excretory system of human beings includes a pair of kidneys, a pair of ureters, a urinary bladder and an urethra. Kidneys are located in the abdomen, one on either side of the backbone. Urine is produced in the kidneys by the purification of blood.

83. One of the waste products which is not released through urine?

Ⓐ CO_2 Ⓑ Urea Ⓒ Uric acid Ⓓ Hormones

84. Which structure contains nephrons ?

Ⓐ Kidney Ⓑ Ureter Ⓒ Urinary bladder Ⓓ Urethra

85. The process of release of urine from the urinary bladder is called —

Ⓐ Egestion Ⓑ Defaecation Ⓒ Micturition Ⓓ Filtration

Assertion-Reason type Questions (86–88):

Directions: Read the following questions and choose any one of the following four responses.

A. Both Assertion and Reason are true and Reason is the correct explanation of the Assertion.

B. Both Assertion and Reason are true but Reason is not the correct explanation of the Assertion.

C. Assertion is true but Reason is false.

D. Assertion is false but Reason is true.

86. **Assertion:** The main organ of human excretory system is kidney.

Reason: Kidneys perform the function of removing excess water and nitrogeneous wastes from the body.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

87. **Assertion:** Urine formed, enters the ureter from the kidneys.

Reason: It is temporarily stored in the bladder.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

88. **Assertion:** Useful plant wastes are essential oils, gums, natural rubber, etc.

Reason: Rubber plant is the common example of a plant which exudes latex (used in tyre industry) as an excretory product.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

89. Which of the following is not a normal constituent of normal urine ?

Ⓐ Uric acid Ⓑ Urea Ⓒ Lipoproteins Ⓓ Creatinine

90. Bowman's capsule occurs in

Ⓐ Urethra Ⓑ Collecting duct Ⓒ Nephron Ⓓ Urinary bladder

91. Which one of the endocrine glands is known as 'master gland' ?

Ⓐ Pituitary Ⓑ Adrenal Ⓒ Thyroid Ⓓ Parathyroid

92. Cerebrum is a part of—

Ⓐ Forebrain Ⓑ Hindbrain Ⓒ Midbrain Ⓓ Neurons

93. Which of the following is not naturally occurring plant hormone—

Ⓐ 2, 4-D Ⓑ Cytokinin Ⓒ Gibberellin Ⓓ IAA

94. The end product of protein digestion is

Ⓐ Glucose Ⓑ Fatty acids Ⓒ Glycerol Ⓓ Amino acids

95. Role of transpiration is

Ⓐ Conduction of water and mineral salts Ⓑ Cooling effect

Ⓒ Maintenance of cell turgidity Ⓓ All of these

Case Study Based Question (96–98):

Answer the questions on the basis of your understanding of the following passage :

A brain is displayed at the Allen Institute for Brain Science. The human brain is a 3-pound (1.4-kilogram) mass of jelly-like fats and tissues—yet it's the most complex of all known living structures. The human brain is more complex than any other known structure in the universe. Weighing in at three pounds, on average, this spongy mass of fat and protein is made up of billions of neurons. Neurons are notable for their branch-like projections called axons and dendrites, which gather and transmit electrochemical signals. We could not breathe, play, love, or remember without the brain.

96. Which among these is not a function of cerebrum?

Ⓐ Speech Ⓑ Learning Ⓒ Posture Ⓓ Emotion

97. Which among these protects our brain?

Ⓐ Neurotransmitter Ⓑ Vertebral column

Ⓒ Meninges Ⓓ Grey matter

98. CSF protects which of the following pairs?

(I) Brain (II) Cranium (III) Spinal cord (IV) Vertebral column

Ⓐ I & III Ⓑ II & III Ⓒ III & IV Ⓓ I & III

Assertion-Reason type Questions (99–100):

Directions: Read the following questions and choose any one of the following four responses.

A. Both Assertion and Reason are true and Reason is the correct explanation of the Assertion.

B. Both Assertion and Reason are true but Reason is not the correct explanation of the Assertion.

C. Assertion is true but Reason is false.

D. Assertion is false but Reason is true.

99. **Assertion:** Many trees shed bark periodically.

Reason: Shedding bark is a mode of excretion.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

100. **Assertion:** Fusion of a Y-sperm with an ovum produces a female foetus.

Reason: The sex of the child is determined by the father's sperm.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

Space For Rough Works