Monthly Progressive Test

Class: XII

Subject: PCMB

Academic Excellence Programme
TECHNO ACE

Test Booklet No.: **MPT03**

Test Date: 1 4 0 6 2 0 2 4

Time: 180 mins

Full Marks: 200

Important Instructions :

1. The Test is of 180 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 MPT0314062024.

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 scribble 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.

Physics

1. Charge $q = \pm ne$ where n is integer, is called

   Ⓐ quantization of charge   Ⓑ fractional charge

   Ⓒ Integral of charge   Ⓓ superposition of charge

2. $\dfrac{\Delta Q}{\Delta V}$ (C/m³) is called

   Ⓐ linear charge density   Ⓑ surface charge density

   Ⓒ volume charge density   Ⓓ All of the above

3. Two electrons and a $+q$ charge are held along a straight line as
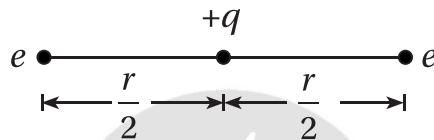
   then $\left|\dfrac{e}{q}\right| =$

   Ⓐ $\dfrac{1}{4}$ Ⓑ 4   Ⓒ 2   Ⓓ $\dfrac{1}{2}$

4. The force on an electron in a uniform electric field of 10^5 N/C due South is

   Ⓐ 16×10^{-15} due North   Ⓑ 16×10^{-15} due South

   Ⓒ 8×10^{-15} due North   Ⓓ 4×10^{-15} due South

5. For a dipole, $\dfrac{E_{\text{axial}}}{E_{\text{equatorial}}} =$

   Ⓐ 1   Ⓑ 1.5   Ⓒ 2   Ⓓ 2.5

6. Potential energy of a capacitor

   Ⓐ $\dfrac{Q^2}{2C}$ Ⓑ $\dfrac{1}{2}CV^2$ Ⓒ $\dfrac{QV}{2}$ Ⓓ All the above

7. Capacity of a parallel plate capacitor with a conducting slab of thickness $d/2$ in between the plates separated by a distance d is

   Ⓐ $\dfrac{1}{2} \times$ original capacitance   Ⓑ $2 \times$ original capacitance

   Ⓒ Original capacitance   Ⓓ None of these

8. The electrostatic potential due to electric dipole at an equatorial point is

   Ⓐ 1 Volt   Ⓑ 2 Volt   Ⓒ –3 Volt   Ⓓ 0 Volt

9. Ordinary capacitors are in the range of

   Ⓐ microfarad   Ⓑ milifarad   Ⓒ mega farad   Ⓓ None of these

10. Select the correct option

   Ⓐ In case of an electric dipole, $V \propto \dfrac{1}{r^2}$ Ⓑ In case of an electric monopole, $V \propto \dfrac{1}{r}$

   Ⓒ both Ⓐ and Ⓑ are correct   Ⓓ None of these

11. The capacity of a capacitor which when connected in series with a capacitor of 12 μF gives a capacitance of 3 μF is

   Ⓐ 3 μF   Ⓑ 2 μF   Ⓒ 6 μF   Ⓓ 4 μF

12. The force on each plate of a parallel plate capacitor is

   Ⓐ $\dfrac{1}{2}(QE)$ Ⓑ QE Ⓒ $2QE$ Ⓓ $\dfrac{1}{3}(QE)$

13. Select the correct option

   Ⓐ Electric potential is a scalar quantity

   Ⓑ Electric potential gradient is a vector quantity

   Ⓒ Both Ⓐ and Ⓑ are correct

   Ⓓ None of these are correct

14. The angle between electric field and tangent to equipotential surface at the point on the equipotential surface is
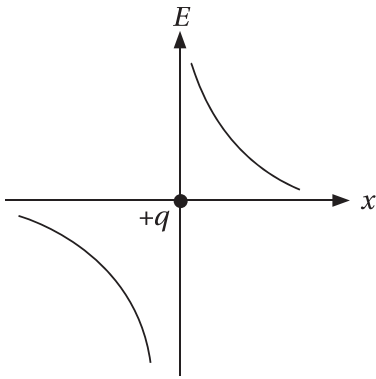
   Ⓐ 30°   Ⓑ 60°   Ⓒ 45°   Ⓓ 90°

15.
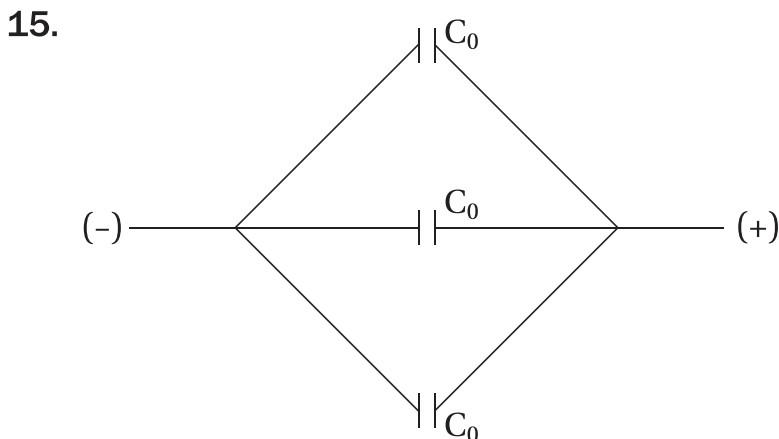
The equivalent capacitance is
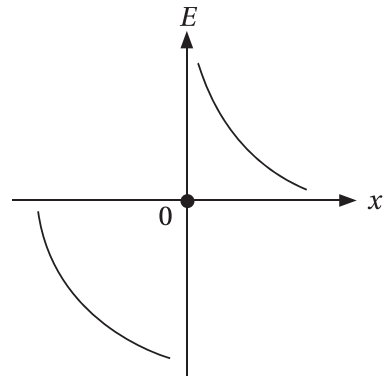
   Ⓐ $3C_0$ Ⓑ $2C_0$ Ⓒ C_0 Ⓓ $4C_0$

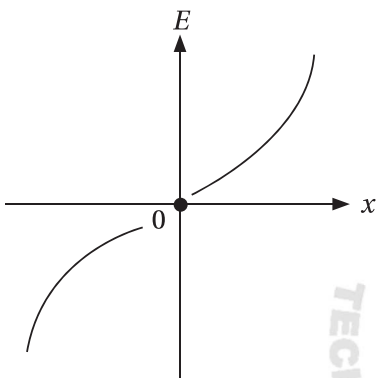**16.** Select the correct graphical variation of $\vec{E}$ on x-axis due to a point positive charge.
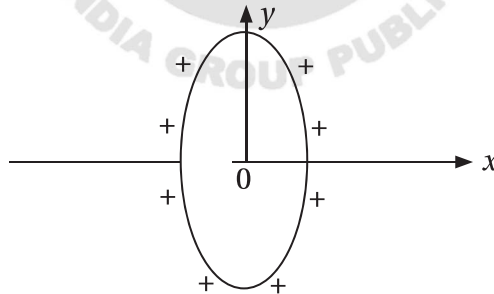
Ⓐ

Ⓑ

Ⓒ

Ⓓ None of these

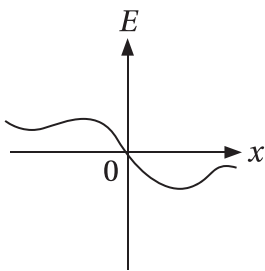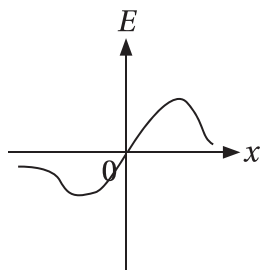**17.** Select the correct graphical variation of $\vec{E}$ on x-axis due to a ring shaped conductor carries a total charge Q uniformly distributed in it.
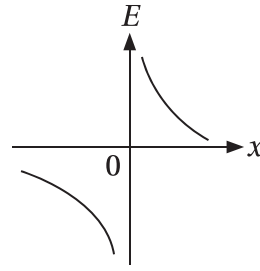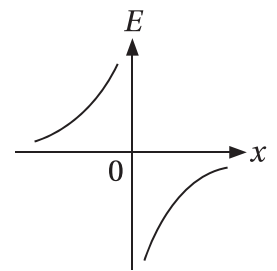

Ⓐ

Ⓑ

Ⓒ

Ⓓ

18. The electric field at a point due to a point charge is 30 N/C and the electric potential at that point is 15 J/C. Then the distance of the point from the charge is

Ⓐ 1 m   Ⓑ 0.1 m   Ⓒ 0.5 m   Ⓓ 1.5 m

19. Two identical capacitors have the same capacitance C. They are charged to potential V and $2V$ respectively. The negative ends of the capacitors are connected together. When the positive ends are also connected, the common potential becomes

Ⓐ V Ⓑ $2V$ Ⓒ $1.5V$ Ⓓ $3V$

20. When battery across the plates of charged capacitor is put off and dielectric slab is introduced inbetween the plates of the capacitors, then charge on plate

Ⓐ Increases   Ⓑ Decreases   Ⓒ Remains same   Ⓓ None of these

21. Select the correct option

Ⓐ Magnitude of electric dipole moment is the product of either charge ($\pm q$) and the distance ($2l$) between the charges.

Ⓑ Dipole moment is a vector quantity.

Ⓒ Dipole moment is directed from $-q$ to $+q$.

Ⓓ All the above are correct.

22. If an electric dipole is placed at rest in a uniform electric field, and released

Ⓐ A torque will develop and align the electric dipole in the direction of electric field, if the dipole is not aligned already.

Ⓑ The dipole shall not move as net force on the dipole is zero.

Ⓒ Both Ⓐ and Ⓑ are correct

Ⓓ None of these

23. Name the physical quantity whose SI unit is NC^{-1}.

Ⓐ Electric field   Ⓑ Electric potential energy

Ⓒ Electric potential   Ⓓ None of these

24. Two small identical electric dipoles, each of dipole moment P are kept at an angle of $120°$ then the resultant dipole moment of this combination is

Ⓐ P Ⓑ $2P$ Ⓒ $P/2$ Ⓓ $1.5P$

25. Potential energy of an electric dipole held at angle θ in a uniform electric field is zero when $\theta =$

Ⓐ $0°$ Ⓑ $90°$ Ⓒ $180°$ Ⓓ $360°$

Chemistry

26. False statement about simple Galvanic cell is

Ⓐ Copper rod gets corroded gradually

Ⓑ Mass of zinc rod increases

© Blue colour of copper sulphate gets faded

① Concentration of $ZnSO_4$ decreases

27. Consider the given data and select the correct reducing power,

$E^o_{Zn^{2+}/Zn} = -0.76$ volt, $E^o_{Cu^{2+}/Cu} = +0.34$ volt, $E^o_{Cd^{2+}/Cd} = -0.40$ volt, $E^o_{Ag^{2+}/Ag} = +0.80$ volt

Ⓐ Ag > Cu > Cd > Zn   Ⓑ Zn > Cd > Cu > Ag

Ⓒ Ag > Cd > Cu > Zn   Ⓓ Zn > Cu > Cd > Ag

28. Which of the following conditions will increase the voltage of the cell of given representation $Zn \mid Zn^{2+} \parallel Ag^+ \mid Ag$?

Ⓐ By increasing the dimension of zinc electrode

Ⓑ By increasing concentration of Ag^+

Ⓒ By increasing the dimension of silver electrode

Ⓓ By increasing concentration of Zn^{2+}

29. What is the correct $[(10).(E_{cell})]$ value of the given representation $A \mid A^+ \parallel B^+ \mid B$ is

$E^o_{(A^+/A)} = -1.35$ v, $E^o_{(B^+/B)} = +0.45$ v ?

Ⓐ 19   Ⓑ 9   Ⓒ 18   Ⓓ 17

30. The E° for the redox reaction $A + 2B^{3+} \rightarrow 2B^{2+} + A^{2+}$ will be:

Given that $E^o_{(A^{2+}/A)} = +x$ volt, $E^o_{(B^{3+}/B^{2+})} = +y$ volt

Ⓐ (x – 2y)   Ⓑ (x + 0.5y)   Ⓒ (x - y)   Ⓓ (y - x)

Question number 31 to 35 are ASSERTION - REASON TYPE. Select the correct option

OPTION A : Assertion and reason both are correct and reason is the correct explanation of assertion

OPTION B : Assertion and reason both are correct and reason is not the correct explanation of assertion

OPTION C : Assertion is correct but reason is wrong

OPTION D : Assertion is wrong but reason is correct

31. Assertion : When current passes through a copper wire, then chemical properties of copper do no suffer any change

Reason : Metallic conduction is not associated with either electron gain or loss permanently

32. Assertion : Salt bridge is applied in Daniel cell

Reason : It increases the liquid - liquid junction potential value

33. Assertion : Electrolysis of aqueous solution of $CuSO_4$ is easier than CCl_4

Reason : $CuSO_4$ is more ionic than CCl_4

34. Assertion : Platinum is a good electrode

Reason : Platinum does not react with both electrolyte and the product

35. Assertion : In case of experiments with simple Galvanic cell, temperature remains constant

Reason : Simple Galvanic cell consists of two electrodes and two electrolytes

36. Find out the correct statement

Ⓐ Metallic conduction obeys Ohm's law but electrolytic conduction does not

Ⓑ Electrolytic conduction obeys Ohm's law but metallic conduction does not

Ⓒ Both metallic conduction and electrolytic conduction obey Ohm's law

Ⓓ None of metallic conduction and electrolytic conduction obey Ohm's law

37. If $E^o_{(A^+/A)} = -0.287\,v, E^o_{(B^+/B)} = +0.106\,v, E^o_{(D^+/D)} = -1.04\,v, E^o_{(H^+/\frac{1}{2}H_2)} = 0.0\,v$, then which metal cannot release H_2 gas from dilute H_2SO_4 solution ?

Ⓐ Metal A

Ⓑ Metal B

Ⓒ Metal C

Ⓓ A, B, C all can release H_2 gas from dilute H_2SO_4 solution

38. What is the E_{cell} of the following cell $Na\,|\,Na^+\,||\,Zn^{2+}\,|\,Zn$ considering the following data

$E^o_{(Na^+/Na)} = -2.7\,V, E^o_{(Zn^{2+}/Zn)} = -0.76\,V$?

Ⓐ + 3.46 volt   Ⓑ – 3.46 volt   Ⓒ + 1.94 volt   Ⓓ – 1.94 volt

39. If salt bridge is removed from Galvanic cell then voltage

Ⓐ gradually increases   Ⓑ gradually decreases

Ⓒ drops to zero   Ⓓ does not suffer any change

40. The electrochemical series is formed on the basis of

Ⓐ size of the ion

Ⓑ melting points of the metal

© the positions of the metals in the periodic table

⒟ electron releasing capacity

41. 0.004 M Na_2SO_4 solution is isotonic with 0.010 M $C_6H_{12}O_6$ solution at 298 K. What is the apparent degree of dissociation of Na_2SO_4 ?

Ⓐ 90%   Ⓑ 80%   © 75%   Ⓓ 85%

42. Activation energy is associated

Ⓐ Only with reaction rate constant but not with equilibrium constant

Ⓑ Only with equilibrium constant but not with reaction rate constant

© With both reaction rate constant and equilibrium constant

Ⓓ neither with reaction rate constant nor with equilibrium constant

43. The rate equation of a homogeneous and gaseous reaction is expressed as Rate = k.[A].[B]. Suddenly the volume of the vessel is reduced to one - fourth of the original volume. How much time the rate of reaction will increase ?

Ⓐ 16   Ⓑ 32   © 8   Ⓓ 4

44. Catalyst

Ⓐ can change both equilibrium constant and reaction rate constant

Ⓑ can change equilibrium constant but cannot change reaction rate constant

© cannot change equilibrium constant but can change reaction rate constant

Ⓓ cannot change both equilibrium constant and reaction rate constant

45. When sugar is added to water then boiling point of the solution is higher than that of pure water. This is due to

Ⓐ Increase in the escaping character of water

Ⓑ Increase in the extent of hydrogen bonding in the solvent

© Increase in the solute-solvent interaction in the system

Ⓓ Decrease in the conductivity of water

46. Both the chambers of Galvanic cell are made up of glass because

Ⓐ temperature does not change

Ⓑ glass is transparent

© glass does not react with the electrolytes

Ⓓ conductivity of electrolyte increase in glass container

47. Consider the following data and select the correct order of oxidising power

$$E^O_{(A^+/A)} = +1.09\,V, E^O_{(B^+/B)} = -0.32\,V, E^O_{(X^+/X)} = -1.33\,V, E^O_{(Y^+/Y)} = +0.88\,V$$

Ⓐ $Y^+ > A^+ > B^+ > X^+$
Ⓑ $X^+ > B^+ > A^+ > Y^+$

Ⓒ $Y^+ > B^+ > A^+ > X^+$
Ⓓ $X^+ > A^+ > B^+ > Y^+$

48. $E^O_{(MnO_4^-/Mn^{2+})} = +1.51\,volt, E^O_{(Cr_2O_7^{2-}/Cr^{3+})} = +1.31\,volt, E^O_{(\frac{1}{2}Cl_2/Cl^-)} = +1.36\,volt$

According to the given data, the correct statement is

Ⓐ $K_2Cr_2O_7$ can oxidise HCl but $KMnO_4$ cannot

Ⓑ $KMnO_4$ can oxidise HCl but $K_2Cr_2O_7$ cannot

Ⓒ Both $K_2Cr_2O_7$ and $KMnO_4$ can oxidise HCl

Ⓓ Neither $K_2Cr_2O_7$ nor $KMnO_4$ can oxidise HCl

49. Electrode potential of the cathode chamber is

Ⓐ A potential difference developed between electrode at cathode and electrolyte at anode chamber

Ⓑ A potential difference developed between electrode at anode and electrolyte at cathode chamber

Ⓒ A potential difference developed between electrode and electrolyte at cathode chamber

Ⓓ A potential difference developed between electrode and electrolyte at cathode chamber and the salt bridge

50. Find out the correct statement

Ⓐ Neither standard reductional potential nor resistance is an extensive property

Ⓑ Both standard reductional potential and resistance are extensive property

Ⓒ Standard reductional potential is intensive property while resistance is extensive property

Ⓓ Standard reductional potential is extensive property while resistance is intensive property

Mathematics

51. The value of p and q for which the function

$$f(x) = \begin{cases} \dfrac{\sin(p+1)x + \sin x}{x} & , \quad x < 0 \\ q & , \quad x = 0 \\ \dfrac{\sqrt{x + x^2} - \sqrt{x}}{x^{\frac{3}{2}}} & , \quad x > 0 \end{cases}$$ is continuous for all $x \in R$, is

Ⓐ $p = \dfrac{5}{3}, q = \dfrac{1}{2}$　　Ⓑ $p = -\dfrac{3}{2}, q = \dfrac{1}{2}$　　Ⓒ $p = \dfrac{1}{2}, q = \dfrac{3}{2}$　　Ⓓ $p = \dfrac{1}{2}, q = -\dfrac{3}{2}$

52. The number of points of discontinuities of the greatest integer function $f(x) = [x]$, $x \in \left(-\dfrac{7}{2}, 100\right)$ is equal to

Ⓐ 101　　　　Ⓑ 102　　　　Ⓒ 103　　　　Ⓓ 104

53. The points of discontinuity of $\tan x$ are

Ⓐ $n\pi, n \in I$　　Ⓑ $2n\pi, n \in I$　　Ⓒ $(2n+1)\dfrac{\pi}{2}, n \in I$　　Ⓓ none of these

54. If $f(x) = \begin{cases} \dfrac{1 - \cos \lambda x}{x \sin x} & , \quad x \neq 0 \\ \dfrac{1}{2} & , \quad x = 0 \end{cases}$ is continuous at $x = 0$, then λ is

Ⓐ 0　　　　Ⓑ ± 1　　　　Ⓒ 1　　　　Ⓓ none of these

55. The function $f(x) = \dfrac{x - |x|}{x}$ is

Ⓐ Continuous everywhere　　　　　　Ⓑ Continuous no-where

Ⓒ Continuous for all x except $x = 1$　　Ⓓ Continuous for all x except $x = 0$

56. If $f(x) = \begin{cases} x & , \quad \text{if } x \text{ is rational} \\ 1 - x & , \quad \text{if } x \text{ is irrational} \end{cases}$ then

Ⓐ f is only right continuous at $x = \dfrac{1}{2}$　　Ⓑ f is only left continuous at $x = \dfrac{1}{2}$

© f is continuous at $x=\dfrac{1}{2}$ Ⓓ f is discontinuous at all points

57. $f(x)=\begin{cases}\dfrac{\sqrt{1+px}-\sqrt{1-px}}{x} & , \quad -1\le x<0 \\[3mm] \dfrac{2x+1}{x-2} & , \quad 0\le x\le 1\end{cases}$ is continuous in the interval $[-1, 1]$, then p equals

Ⓐ -1 Ⓑ $-\dfrac{1}{2}$ © $\dfrac{1}{2}$ Ⓓ 1

58. If $f(x)=\begin{cases}\dfrac{\log(1+ax)-\log(1-bx)}{x} & x\ne 0 \\[3mm] k & x=0\end{cases}$ and $f(x)$ is continuous at $x=0$, then the value of k is

Ⓐ $a-b$ Ⓑ $a+b$ © $\log a+\log b$ Ⓓ None of these

59. Let $f(x)=\begin{cases}|x|\cos\dfrac{1}{x}+15x^3 & , \quad x\ne 0 \\[3mm] k & , \quad x=0\end{cases}$, then $f(x)$ is continuous at $x=0$ if k is equal to

Ⓐ 15 Ⓑ -15 © 0 Ⓓ 6

60. If $f(x)=\begin{cases}x+2, & x<0 \\ -x^2-2, & 0\le x<1 \\ x, & x\ge 1\end{cases}$ then the number of points of discontinuity of $|f(x)|$ is

Ⓐ 1 Ⓑ 2 © 3 Ⓓ none of these

61. If $f(x)=\begin{cases}(\cos x)^{1/\sin x} & \text{for} \quad x\ne 0 \\ k & \text{for} \quad x=0\end{cases}$

The value of k, so that f is continuous at $x=0$ is

Ⓐ 0 Ⓑ 1 © $1/2$ Ⓓ none of these

62. The value of $f(0)$, so that the function $f(x)=\dfrac{(27-2x)^{1/3}-3}{9-3(243+5x)^{1/5}}\,(x\ne 0)$ is continuous is

Ⓐ $2/3$ Ⓑ 6 © 2 Ⓓ 4

63. The function $f(x)=[x]^2-[x^2]$ is discontinuous at

Ⓐ All integers   Ⓑ All integers except 0 and 1

© All integers except 0   Ⓓ All integers except 1

64. Let $f:R\to R$ be given by $f(x)=5x$, if $x\in Q$ and $f(x)=x^2+6$ if $x\in R-Q$, then

(A) f is continuous at $x = 2$ and $x = 3$ (B) f is discontinuous at $x = 2$ and $x = 3$

(C) f is continuous at $x = 2$ but not at $x = 3$ (D) f is continuous at $x = 3$ but not at $x = 2$

65. The value of $f(0)$ so that $\dfrac{(-e^x + 2^x)}{x}$ may be continuous at $x = 0$ is

(A) $\log\left(\dfrac{1}{2}\right)$ (B) 0 (C) 4 (D) $-1 + \log 2$

66. Let $A = \{1, 2, 3\}$ and consider the relation $R = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 3), (1, 3)\}$. Then R is

(A) reflexive but not symmetric   (B) reflexive but not transitive

(C) symmetric and transitive   (D) neither symmetric, nor transitive

67. The principal value of $\sin^{-1}\left[\cos\left(\sin^{-1}\dfrac{\sqrt{3}}{2}\right)\right]$ is

(A) $\dfrac{\pi}{6}$ (B) $\dfrac{\pi}{3}$ (C) $-\dfrac{\pi}{3}$ (D) none of these

68. If $A = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$, then A^4 is

(A) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ (B) $\begin{bmatrix} 1 & 1 \\ 0 & 0 \end{bmatrix}$ (C) $\begin{bmatrix} 0 & 0 \\ 1 & 1 \end{bmatrix}$ (D) $\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$

69. If $A = \begin{bmatrix} a & 0 & 0 \\ 0 & a & 0 \\ 0 & 0 & a \end{bmatrix}$, then the value of $|adj\, A|$ is

(A) a^3 (B) a^6 (C) a^9 (D) a^{27}

70. If $A = \begin{bmatrix} 1 & 2 & x \\ 3 & -1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} y \\ x \\ 1 \end{bmatrix}$ be such that $AB = \begin{bmatrix} 6 \\ 8 \end{bmatrix}$ then

(A) $y = 2x$ (B) $y = -2x$ (C) $y = x$ (D) $y = -x$

71. If $f(x) = 2x$ and $g(x) = \dfrac{x^2}{2} + 1$, then which of the following can be a discontinuous function

(A) $f(x) + g(x)$ (B) $f(x) - g(x)$

(C) $f(x) \cdot g(x)$ (D) $\dfrac{g(x)}{f(x)}$

72. The function $f(x) = \dfrac{4 - x^2}{4x - x^3}$ is

Ⓐ discontinuous at only one point at $x = 0$ Ⓑ discontinuous at exactly two points

Ⓒ discontinuous at exactly three points Ⓓ none of these

73. If $f(x) = x^2 \sin\dfrac{1}{x}$, where $x \neq 0$, then the value of the function $f(x)$ at $x = 0$, so that the function is continuous at $x = 0$ is

Ⓐ 0 Ⓑ –1 Ⓒ 1 Ⓓ none of these

74. If $f(x) = \begin{cases} mx + 1, \text{if } x \leq \dfrac{\pi}{2} \\ \sin x + n, \text{if } x > \dfrac{\pi}{2} \end{cases}$ is continuous at $x = \dfrac{\pi}{2}$, then

Ⓐ $m = 1, n = 0$ Ⓑ $m = \dfrac{n\pi}{2} + 1$ Ⓒ $n = \dfrac{m\pi}{2}$ Ⓓ $m = n = \dfrac{\pi}{2}$

75. If $f(x) = \dfrac{\sqrt{4 + x} - 2}{x}, x \neq 0$ is continuous at $x = 0$, then $f(o) =$

Ⓐ $\dfrac{1}{2}$ Ⓑ $\dfrac{1}{4}$ Ⓒ 2 Ⓓ $\dfrac{3}{2}$

Biology

76. Choose the incorrect statement regarding sewage treatment—

Ⓐ Primary treatment involves physical removal of impurities like soil and small pebbles.

Ⓑ Primary sludge is formed during primary treatment.

Ⓒ Flocs are generated during secondary treatment.

Ⓓ Flocs significantly increase the BOD of the sewage

77. Which of the following is not a constituent of biogas?

Ⓐ CO_2 Ⓑ H_2S Ⓒ CH_4 Ⓓ H_2O

78. Biogas plants are mostly functional in rural areas because—

Ⓐ Cattle dung is readily available

Ⓑ It is an easy and cheap process

Ⓒ The spent slurry of the biogas plant is used as a fertilizer

Ⓓ All of the above

79. Using genetic engineering, *Bacillus thuringiensis*, is commercially used—

Ⓐ To make butter   Ⓑ As a biofertilizer

Ⓒ To make biogas   Ⓓ To make plants resistant to insects

80. A free living nitrogen fixing bacteria found in soil is—

Ⓐ *Azotobacter*   Ⓑ *Rhizobium*

Ⓒ *Streptococcus*   Ⓓ None of these

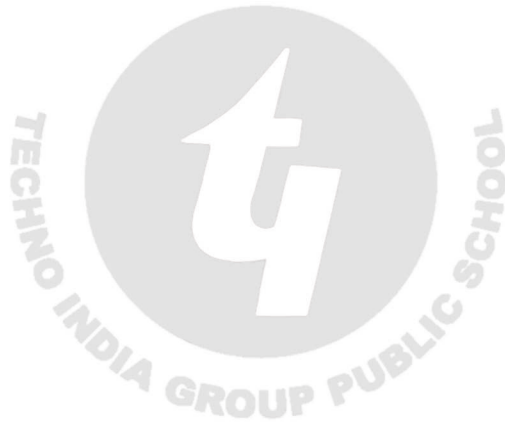**81.** In the given figure, A, B and C respectively represents—
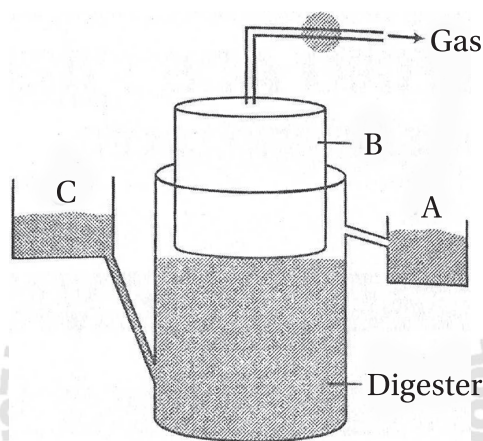
Ⓐ A—Sludge tank; B—Gas holder; C—Slurry

Ⓑ A—Gas holder; B—Sludge tank; C—Slurry

Ⓒ A—Slurry; B—Gas holder; C—Sludge tank

Ⓓ A—Gas holder; B—Slurry; C—Sludge tank

82. The slurry in a biogas plant consists of—

Ⓐ Dung + water   Ⓑ Dung + Oil

Ⓒ Only dung   Ⓓ Water + Oil

83. Baculovirus is associated with—

Ⓐ Sewage treatment   Ⓑ *Rhizobium*

Ⓒ Integrated Pest Management   Ⓓ Enhancement of fertility of soil

84. Which of the following is not used as a biopesticide?

Ⓐ *Bacillus thuringiensis*   Ⓑ *Saccharomyces cerevisiae*

Ⓒ Nuclear polyhedrosis virus   Ⓓ *Xanthomonas campestris*

85. Biofertilisers give better yield when added along with—

Ⓐ Phosphate   Ⓑ Calcium   Ⓒ Nitrogen   Ⓓ Urea

86. A plant that can produce both chasmogamous and cleistogamous flower is___

Ⓐ Papaya Ⓑ Viola Ⓒ Water lily Ⓓ Maize

87. What happens to the integuments around the ovule after fertilisation?

Ⓐ They turn to the fruit stalk Ⓑ They turn to the pericarp
Ⓒ They dry and fall off Ⓓ They turn to seed coats

88. GIFT is a type of

Ⓐ ART Ⓑ PID Ⓒ IUD Ⓓ STD

89. Which part of the sperm is rich in mitochondria?

Ⓐ Head Ⓑ Neck Ⓒ Middle piece Ⓓ Tail

90. The condition when one or both testes fail to descend down into the scrotal sacs, is called

Ⓐ Sterility Ⓑ Cryptorchidism
Ⓒ Epididymis Ⓓ None of these

91. Germ pores are sites on the wall of the pollen grain which is devoid of _____

Ⓐ Sporopollenin Ⓑ Cellulose
Ⓒ Pectin Ⓓ Lignin

92. The seeds of *Lupinus arcticus* have been excavated from _____

Ⓐ Antarctica Ⓑ Arctic Tundra Ⓒ Alpine Tundra Ⓓ Dead Sea

93. Fruits of which of the following plants show thousands of tiny seeds?

Ⓐ Orchids Ⓑ *Orobanche* Ⓒ *Striga* Ⓓ All of the above

94. The wall of the fruit is called

Ⓐ Perisperm Ⓑ Endosperm Ⓒ Pericarp Ⓓ Nucellus

95. Increased levels of GnRH (secreted from the hypothalamus) stimulates the secretion of —

Ⓐ LH Ⓑ FSH Ⓒ Both Ⓐ and Ⓑ Ⓓ Neither Ⓐ nor Ⓑ

96. The secondary oocyte is _____

Ⓐ Haploid Ⓑ Diploid Ⓒ Triploid Ⓓ None

97. Foetal ejection reflex is responsible for _____

Ⓐ Gestation Ⓑ Lactation
Ⓒ Implantation Ⓓ Parturition

98. For effective contraception, progestogens have to be administered within _____ hours of coitus.

    Ⓐ 24   Ⓑ 48   Ⓒ 72   Ⓓ 96

99. Induced abortion is also called

    Ⓐ ART   Ⓑ GIFT   Ⓒ PID   Ⓓ MTP

100. Transfer of an ovum, from a donor, into the fallopian tube of another women, who cannot produce ovum is termed as

    Ⓐ GIFT   Ⓑ AI   Ⓒ IUT   Ⓓ MTP