ENGLISH

(3002CMD300122080)

Test Pattern

ALLEN CAREER INSTITUTE KOTA (RAJASTHAN)

CLASSROOM CONTACT PROGRAMME

(Academic Session : 2023 - 2024)

NEET(UG)
MINOR # 1
30-04-2023

PRE-MEDICAL : NURTURE COURSE : (PHASE - 1)

TOPICS

PHYSICS	Basic Math, Vector
CHEMISTRY	Mole Concept Excluding Concentration Terms
BIOLOGY	Cell-Introduction, Cell Wall, Cell Membrane, All Organelles, Nucleus and Chromosome

IMPORTANT INSTRUCTIONS :

1. The test is of **3 hours 20 minutes** duration and this Test Booklet contains **200** questions. Each question carries **4** marks. For each correct response, the candidate will get 4 marks. For each incorrect response, **one mark** will be deducted from the total scores. The maximum marks are **720.**
2. In this Test Paper, each subject will consist of two sections. Section A will consist of 35 questions (all questions are mandatory) and Section B will have 15 questions. Candidate can choose to attempt any 10 question out of these 15 questions. In case if candidate attempts more than 10 questions, first 10 attempted questions will be considered for marking.
3. Use Blue/Black Ball Point Pen only for writing particulars on this page/ marking responses.

મહત્વપૂર્ણ સૂચનાઓ :

1. પરીક્ષાનો સમય **3 કલાક 20 મિનિટ** છે તેમજ પરીક્ષામાં **200** પ્રશ્નો છે. દરેક પ્રશ્નમાં **4** ગુણ છે. પ્રત્યેક સાચાં ઉત્તર માટે પરીક્ષાર્થી ને **4** ગુણ આપવામાં આવશે. પ્રત્યેક ખોટાં ઉપર માટે કુલ ગુણમાંથી **1** ગુણ બાદ કરવામાં આવશે અધિકત્તમ ગુણ **720** છે.
2. આ પરીક્ષામાં પ્રત્યેક વિષય(ભૌતિક વિજ્ઞાન, રસાયણ વિજ્ઞાન, વનસ્પતિ વિજ્ઞાન અને પ્રાણી વિજ્ઞાન) માં 2 વિભાગ છે. વિભાગ–A માં 35 પ્રશ્નો છે. (બધા જ પ્રશ્નો ફરજિયાત છે.) તથા વિભાગ–B માં 15 પ્રશ્નો છે. પરીક્ષાર્થી આ 15 પ્રશ્નોમાંથી કોઈપણ 10
3. આ પૃષ્ઠ પર વિગતો/જવાબો ચિન્હિત કરવા માટે ફક્ત વાદળી/કાળી બોલ પોઈન્ટ પેન ઉપયોગ કરો.

Name of the Candidate (in Capitals) _____

Form Number : in figures _____

: in words _____

Centre of Examination (in Capitals) : _____

Candidate's Signature : _____ **Invigilator's Signature :** _____

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Your Target is to secure Good Rank in Pre-Medical

Topic : Basic Math, Vector

SECTION-A
Attempt All 35 questions

1. Find the value of sin (225°)

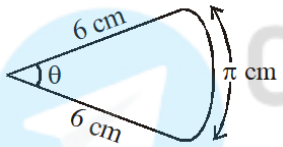
(1) $\frac{1}{\sqrt{2}}$

(2) $-\frac{1}{\sqrt{2}}$

(3) $\frac{\sqrt{3}}{2}$

(4) $-\frac{\sqrt{3}}{2}$

2. A circular arc of length π cm has radius 6 cm. Find angle subtended by it at the centre in radian -



(1) π/3

(2) π/6

(3) π/4

(4) π/2

3. Find the values of :
tan (– 30°)

(1) $-\sqrt{3}$ (2) $\sqrt{3}$

(3) $-\frac{1}{\sqrt{3}}$ (4) $\frac{1}{\sqrt{3}}$

4. sin(2θ) =

(1) $2\sin\frac{\theta}{2}\cos\frac{\theta}{2}$

(2) 2sin2θcos2θ

(3) 2sinθcosθ

(4) 2sinθcos2θ

5. Value of sin 2° is

(1) 2

(2) $\frac{\pi}{90}$

(3) $\frac{\pi}{180}$

(4) 0

6. Find value of $\frac{d}{dx}(\sin^2 x + \cos^2 x)$

(1) 3 cos x

(2) 2 cos x

(3) 2 tan x

(4) 0

7. If $y = x^3\cos x$ then $\frac{dy}{dx}$ = ...

(1) $x^2[3\cos x - x\sin x]$

(2) $x^2[3\cos x + x\sin x]$

(3) $3x^2\cos x + x^3\sin x$

(4) None of these

8. If $y = \sin 5x$. Then $\frac{dy}{dx}$ is equal to -

(1) $\frac{\cos 5x}{5}$

(2) $-5\cos 5x$

(3) $5\cos 5x$

(4) $-\frac{\cos 5x}{5}$

9. If $y = x^3 + 2x + 1$ then $\frac{dy}{dx}$ at $x = 1$ is -

(1) 6 (2) 7 (3) 0 (4) 5

10. Find the slope of the curve $y = x^3 - 2x^2 + x - 1$ at $x = 1$

(1) 0 (2) 1

(3) 1/2 (4) 2

11. Minimum value of $y = x^2 - 2x + 5$ is

(1) 4 (2) 2 (3) 0 (4) 1

12. What is the integral of $\int (x^3 - 5x^2 + 7x - 11)dx$

(1) $\frac{5}{3}x^3 + \frac{7}{2}x^2 - 11x + C$

(2) $\frac{x^4}{4} - \frac{5}{3}x^3 - 11x + C$

(3) $\frac{x^4}{4} - \frac{5}{3}x^4 + \frac{7}{2}x^2 - 11x + C$

(4) $\frac{x^4}{4} - \frac{5}{3}x^3 + \frac{7}{2}x^2 - 11x + C$

13. $\int \sin 2x.\, dx$

(1) $-\cos 2x + c$ (2) $-\frac{\cos 2x}{2} + c$

(3) $-2\cos 2x + c$ (4) $\cos x + c$

14. $\int x^{-3/2}dx = ?$

(1) $\frac{2}{\sqrt{x}} + c$

(2) $\frac{-2}{\sqrt{x}} + c$

(3) $2\sqrt{x} + c$

(4) $-2\sqrt{x} + c$

15. Value of $\int_0^1 (3x^2 - 4x + 1)dx$ is -

(1) 0 (2) 1 (3) 2 (4) 3

16. The area bounded by the curve $y = 3x^2$ and the x-axis from $x = 0$ to $x = 2$ is

(1) 8 units (2) 6 units

(3) 4 units (4) units

17. If velocity
$v = 6t^2 + 2t + 3$ m/sec.
then find average velocity from $t = 0$ to $t = 2$ sec.

(1) 11 m/sec. (2) 8 m/sec.

(3) 13 m/sec. (4) 7 m/sec.

18. Value of $(1.002)^3$ = ……

(1) 1.008 (2) 1.004

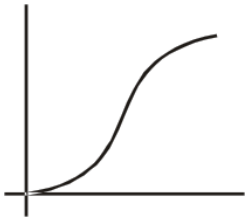
(3) 1.006 (4) 1.005

19. Find sum of series $1 + \frac{1}{5} + \frac{1}{25} + \frac{1}{125} + \ldots\ldots \infty$.

(1) $\frac{4}{5}$ (2) $\frac{5}{4}$

(3) $\frac{3}{5}$ (4) Infinite

20. The slope of the curve shown in figure :-



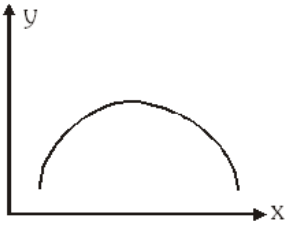
(1) continuously increases

(2) continuously decreases

(3) first increases then decreases

(4) first decreases then increases

21. Magnitude of slope of the shown graph.



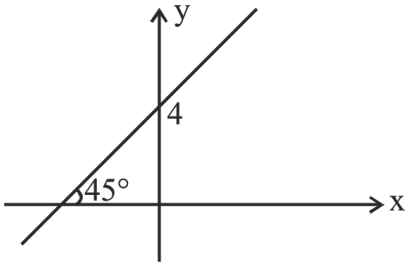
(1) First increases then decreases

(2) First decreases then increases

(3) Increases

(4) Decreases

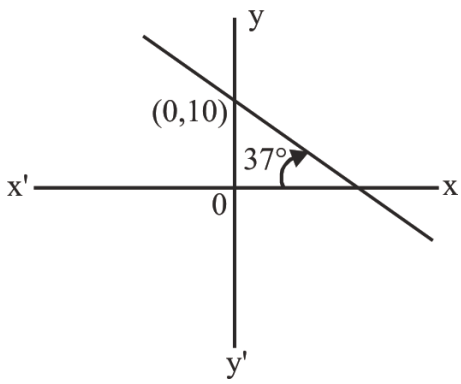
22. Equation for the straight line graph shown in the figure is :-



(1) $y = x + 4$ (2) $y = x - 4$

(3) $y = -x + 4$ (4) $y = -x - 4$

23. For given graph of straight line. Which statement is correct :-



(1) Slope angle is 143°

(2) Intercept on y-axis is 10

(3) Slope is negative

(4) All above

24. The radius of the circle $x^2 + y^2 = 4$ is :-

(1) 4 units (2) 2 units

(3) 1 units (4) 16 units

25. Maximum value of $y = 6 \sin\theta - 8 \cos\theta$?

(1) 10

(2) 14

(3) -2

(4) -10

26. The forces, which meet at one point but their lines of action do not lie in one plane, are called:

(1) non-coplanar and non-concurrent forces

(2) coplanar and non-concurrent forces

(3) non-coplanar and concurrent forces

(4) coplanar and concurrent forces

27. If $|\vec{A}+\vec{B}| = |\vec{A}|+|\vec{B}|$, then angle between $\vec{A}$ and $\vec{B}$ will be :

(1) 90°

(2) 120°

(3) 0°

(4) 60°

28. Given $\vec{A} = \hat{i}+2\hat{j}-3\hat{k}$, when $\vec{B}$ is added to $\vec{A}$, we get unit vector along x-axis then $\vec{B}$ is:-

(1) $-2\hat{j}+3\hat{k}$

(2) $-\hat{i}-2\hat{j}$

(3) $-\hat{i}+3\hat{k}$

(4) $2\hat{j}-3\hat{k}$

29. If resultant of two vectors of same magnitude is also of same magnitude then the angle between the vectors will be :-

(1) 0°

(2) 60°

(3) 90°

(4) 120°

30. Two vectors of 10 units and 5 units makes an angle of 120° with each other. Find the angle of resultant with vector of 10 unit magnitude ?

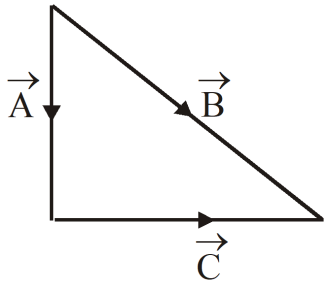
(1) 0°

(2) 30°

(3) 60°

(4) 90°

31. For the given vectors, which of the following option is correct :



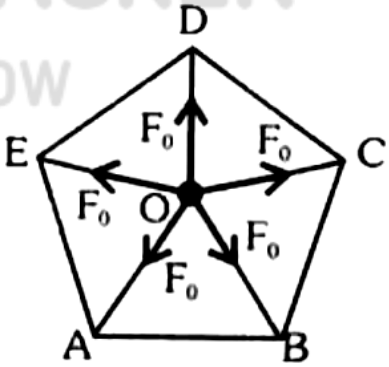
(1) $\vec{A}+\vec{B}=\vec{C}$

(2) $\vec{A}+\vec{C}=\vec{B}$

(3) $\vec{B}+\vec{C}=\vec{A}$

(4) None of these

32. In the given figure, O is the centre of the regular pentagon ABCDE. Five forces each of magnitude F_0 are acted as shown in the figure. The resultant force is :-



(1) $5\,F_0$

(2) $5\,F_0\cos 72°$

(3) $5\,F_0\sin 72°$

(4) zero

33. Given vector $\vec{A} = 2\hat{i} + 3\hat{j}$. The angle between $\vec{A}$ & y-axis is :-

(1) $\tan^{-1}\left(\frac{3}{2}\right)$

(2) $\tan^{-1}\left(\frac{2}{3}\right)$

(3) $\sin^{-1}\left(\frac{2}{3}\right)$

(4) $\cos^{-1}\left(\frac{2}{3}\right)$

34. The angle between two vectors $2\hat{i} + 3\hat{j} + \hat{k}$ and $-3\hat{i} + 6\hat{k}$ is :

(1) 0° (2) 45°

(3) 60° (4) 90°

35. The two vectors have magnitudes 3 and 5. If angle between them is 60º, then the dot product of two vectors will be :-

(1) 7.5 (2) 6.5

(3) 8.4 (4) 7.9

SECTION-B

This section will have 15 questions. Candidate can choose to attempt any 10 question out of these 15 questions. In case if candidate attempts more than 10 questions, first 10 attempted questions will be considered for marking.

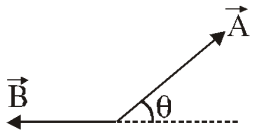
36. Value of $\int_{-\pi/2}^{+\pi/2} (\cos x)\, dx$ is :

(1) 0 (2) +2

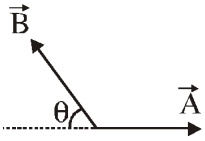
(3) +1 (4) –1

37. Let θ be the angle between vectors $\vec{A}$ and $\vec{B}$. Which of the following figures correctly represents the angle θ?

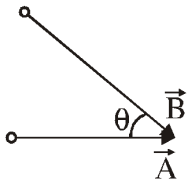
(1)



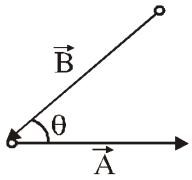
(2)



(3)



(4)



38. If a, b, c are three unit vectors such that $a + b + c = 0$, then $a.b + b.c + c.a$ is equal to :

(1) - 1 (2) 3

(3) 0 (4) $-\frac{3}{2}$

39. Three forces of equal magnitude are shown below

then :-

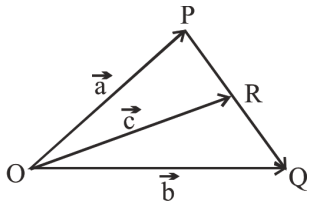
(1) $\vec{F}_1 + \vec{F}_2 = \overrightarrow{\quad}$

(2) $\vec{F}_1 + \vec{F}_3 = \overrightarrow{\quad}$

(3) $\vec{F}_2 + \vec{F}_3 = \overrightarrow{\quad}$

(4) $\vec{F}_1 + \vec{F}_2 + \vec{F}_3 = \overrightarrow{\quad}$

40. Figure shows three vectors $\vec{a}, \vec{b}$ and $\vec{c}$, where R is the mid-point of PQ. Then which of the following relations is correct ?



(1) $\vec{a}+\vec{b}=2\vec{c}$

(2) $\vec{a}+\vec{b}=\vec{c}$

(3) $\vec{a}-\vec{b}=2\vec{c}$

(4) $\vec{a}-\vec{b}=\vec{c}$

41. Which of the following sets of concurrent forces may be in equilibrium ?

(1) $F_1 = 3N, F_2 = 5N, F_3 = 1N$

(2) $F_1 = 3N, F_2 = 5N, F_3 = 9N$

(3) $F_1 = 3N, F_2 = 5N, F_3 = 6N$

(4) $F_1 = 3N, F_2 = 5N, F_3 = 15N$

42. Find direction cosine of resultant of $\vec{A} = \hat{i}+\hat{j}+\hat{k}$ and $\vec{B} = \hat{j}+\hat{k}$:-

(1) $\left(\frac{1}{3}, \frac{2}{3}, \frac{2}{3}\right)$

(2) $\left(\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}\right)$

(3) $\left(\frac{1}{3}, \frac{2}{3}, \frac{1}{3}\right)$

(4) $\left(0, \frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right)$

43. Find a vector having magnitude double of $3\hat{i}+4\hat{j}$ and direction same as $5\hat{i}+12\hat{j}$:-

(1) $\frac{5\hat{i}+12\hat{j}}{13}$

(2) $\frac{10}{13}(3\hat{i}+4\hat{j})$

(3) $\frac{10}{13}(5\hat{i}+12\hat{j})$

(4) None

44. $a_1\hat{i}+a_2\hat{j}$ is a unit vector perpendicular to $4\hat{i}-3\hat{j}$ if :-

(1) $a_1 = 0.6, a_2 = 0.8$

(2) $a_1 = 0.3, a_2 = 0.4$

(3) $a_1 = 0.8, a_2 = 0.6$

(4) $a_1 = 0.4, a_2 = 0.3$

45. Given that P = Q = R. If $\vec{P}+\vec{Q}=\vec{R}$ then the angle between $\vec{P}$ & $\vec{R}$ is θ_1. If $\vec{P}+\vec{Q}+\vec{R}=\vec{0}$ then the angle between $\vec{P}$ & $\vec{R}$ is θ_2. What is the relation between θ_1 and θ_2 ?

(1) $\theta_1 = \theta_2$

(2) $\theta_1 = \frac{\theta_2}{2}$

(3) $\theta_1 = 2\theta_2$

(4) None of the above

46. If $|2\hat{a}+3\hat{b}| = 4$ then $(3\hat{a}+4\hat{b}) \cdot (2\hat{a}-\hat{b}) = ?$

(1) 2

(2) $\frac{13}{4}$

(3) $\frac{3}{4}$

(4) Zero

47. $\vec{A} = 6\hat{i} + 2\hat{j} - 2\hat{k}$ The component of the vector $\vec{A}$ along vector $\vec{B} = \hat{i} + \hat{j} + \hat{k}$ is :-

(1) $6\hat{i} + 2\hat{j} + 2\hat{k}$

(2) $2\hat{i} + 2\hat{j} + 2\hat{k}$

(3) $\hat{i} + \hat{j} + \hat{k}$

(4) $6\hat{i} + 2\hat{j} - 2\hat{k}$

48. What is the unit vector perpendicular to the following vectors $2\hat{i} + 2\hat{j} - \hat{k}$ and $6\hat{i} - 3\hat{j} + 2\hat{k}$:-

(1) $\dfrac{\hat{i} + 10\hat{j} - 18\hat{k}}{5\sqrt{17}}$

(2) $\dfrac{\hat{i} - 10\hat{j} + 18\hat{k}}{5\sqrt{17}}$

(3) $\dfrac{\hat{i} - 10\hat{j} - 18\hat{k}}{5\sqrt{17}}$

(4) $\dfrac{\hat{i} + 10\hat{j} + 18\hat{k}}{5\sqrt{17}}$

49. The two adjacent sides of a parallelogram are represented by the two vectors $\hat{i} + 2\hat{j}$ and $2\hat{i} + \hat{j}$. Find out the area of the parallelogram :-

(1) 3

(2) 0

(3) 5

(4) 4

50. If vector $2\hat{i} + 2\hat{j} - 2\hat{k}$, $-\hat{i} + 2\hat{j} + 2\hat{k}$ and $5\hat{i} + y\hat{j} + \hat{k}$ are coplanar, the value of y is :-

(1) 81

(2) 36

(3) 23

(4) 9

Topic : Mole Concept Excluding Concentration Terms

SECTION-A
Attempt All 35 questions

51. In reaction $2P + R \rightarrow 3Q$, for formation of 1 mol of Q, P Consumed is :-

(1) $\frac{1}{3}$ (2) 2 (3) $\frac{2}{3}$ (4) 2

52. Find the ratio of moles of C and O in 180 g of $C_6H_{12}O_6$

(1) 2 : 1 (2) 1 : 2

(3) 1 : 1 (4) 1 : 6

53. Which among following has maximum number of water molecules?

(1) 18 mL water

(2) 0.18 gm water

(3) 273 K & 1 atm pressure for 0.00224 L water

(4) 10^{-3} mol water

54. The boiling point of water on kelvin scale is

(1) 573 K (2) 273 K

(3) 373 K (4) 100 K

55. Number of neutrons present in 1.7 g of ammonia is -

(1) N_A

(2) $N_A/10 \times 4$

(3) $(N_A/10) \times 7$

(4) $N_A \times 10 \times 7$

56. Number of oxygen atoms in 8 g of ozone is -

(1) 6.02×10^{23}

(2) $\frac{6.02 \times 10^{23}}{2}$

(3) $\frac{6.02 \times 10^{23}}{3}$

(4) $\frac{6.02 \times 10^{23}}{6}$

57. At STP find the number of electrons in 11.2 litre CH_4 gas.

(1) $5\ N_A$ (2) $10\ N_A$

(3) $0.1\ N_A$ (4) $2\ N_A$

58. Calculate the number of carbon atoms in 100 g of C_3O_4

(1) $10\ N_A$ (2) 10

(3) $3\ N_A$ (4) 3

59. 1 amu equal to

(1) 1.66×10^{-24}

(2) 1.66×10^{-23}

(3) 1.66×10^{-25}

(4) 1.66×10^{-26}

60. Atomicity of $K_2Cr_2O_7$ is -

(1) 11 (2) 12

(3) 13 (4) 10

61. If 30 ml of H_2 and 20 ml of O_2 react to formwater, what is left at the end of reaction :-

(1) 10 ml of H_2 (2) 5 ml of H_2

(3) 10 ml of O_2 (4) 5 ml of O_2

62. The correctly balanced equation for $FeS + O_2 \longrightarrow Fe_2O_3 + SO_2$ is ..... .

(1) $2FeS + O_2 \longrightarrow Fe_2O_3 + 4SO_2$

(2) $2FeS + 3O_2 \longrightarrow 2Fe_2O_3 + 4SO_2$

(3) $4FeS + 4O_2 \longrightarrow 2Fe_2O_3 + 2SO_2$

(4) $4FeS + 7O_2 \longrightarrow 2Fe_2O_3 + 4SO_2$

63. The number of atoms of C and O are 1.2×10^{10} and 2.4×10^{10} respectively. It's empirical formula is :-

(1) CO (2) CO_2

(3) C_3O_4 (4) C_2O_3

64. A gaseous hydrocarbon upon combustion gives 72 gm water and 308 gm CO_2. The empirical formula of hydrocarbon -

(1) C_3H_4 (2) C_6H_5

(3) C_7H_8 (4) C_2H_4

65. A mixture containing 100 gm H_2 and 100 gm O_2 is ignited so that water is formed according to the reaction, $2H_2 + O_2 \longrightarrow 2H_2O$; How much water will be formed -

(1) 113 gm

(2) 50 gm

(3) 25 gm

(4) 200 gm

66. An oxide of a metal (M) contains 40% by mass of oxygen. Metal (M) has atomic mass of 24. The empirical formula of the oxide is-

(1) M_2O (2) MO

(3) M_2O_3 (4) M_3O_4

67. The empirical formula of a compound is CH. Its molecular weight is 78. The molecular formula of the compound will be -

(1) C_2H_2 (2) C_3H_3

(3) C_4H_4 (4) C_6H_6

68. 5.6 litre of a gas at N.T.P. weighs equal to 8 gm the vapour density of gas is -

(1) 32 (2) 16 (3) 8 (4) 40

69. 4.48 litres of methane at N.T.P. correspond to-

(1) 1.2×10^{22} molecules of methane

(2) 0.5 mole of methane

(3) 3.2 gm of methane

(4) 0.1 mole of methane

70. 2 moles of H_2 at NTP occupy a volume of

(1) 11.2 litre (2) 44.8 litre

(3) 2 litre (4) 22.4 litre

71. The maximum number of molecules are present in :

(1) 5L of N_2 gas at STP

(2) 0.5 g of H_2 gas

(3) 10g of O_2 gas

(4) 15L of H_2 gas at STP

72. Number of moles in 10 g H_2 are :-

(1) 5 mol (2) 10 mol

(3) 3.5 mol (4) 1 mol

73. Which one of the following is not a mixture :-

(1) Tap water

(2) River water

(3) Milk

(4) Carbon dioxide

74. A gas is found to have the formula $(CO)_x$. It's vapour density is 140. The value of x must be :-

(1) 4 (2) 8 (3) 5 (4) 10

75. When 3 g of C_2H_6 is completely burnt then find out produced volume of CO_2 at STP :-

(1) 0.448 L (2) 4.48 L

(3) 44.8 L (4) 6 L

76. The number of N-atoms in 1.4g nitrogen is

(1) 6.02×10^{23}

(2) 6.02×10^{22}

(3) 3.01×10^{22}

(4) 3.01×10^{21}

77. For the reaction A + 2B $\longrightarrow$ C. The amount of C formed by starting the reaction with 5 mole of A & 8 mole of B is :-

(1) 5 mole

(2) 8 mole

(3) 16 mole

(4) 4 mole

78. 1 Mol CH_4 contains :-

(1) 6×10^{23} atoms H

(2) 4g atom H

(3) 1.8×10^{23} molecules CH_4

(4) 3g carbon

79. 4.6×10^{22} atoms of an element weigh 9.2 g. The atomic mass of the element is :- [$N_A = 6 \times 10^{23}$]

(1) 290 (2) 120

(3) 100 (4) 240

80. A sample of pure compound contains 1.15 g of sodium, 3.01×10^{22} atoms of carbon and 0.1 mol of oxygen atom. Its empirical formula is :-

(1) Na_2CO_3 (2) $NaCO_2$

(3) Na_2CO (4) NaC_2O

81. Insulin contains 3.4% sulphur. The minimum mol. wt. of insulin is :-

(1) 941.176 (2) 900

(3) 1000 (4) None

82. An oxide of sulphur contains 50% of sulphur in it. Its emperial formula is :-

(1) SO_2 (2) SO_3

(3) SO (4) S_2O

83. Emperical formula of glucose is :-

(1) $C_6H_{12}O_6$

(2) $C_3H_6O_3$

(3) $C_2H_4O_2$

(4) CH_2O

84. The simplest formula of a compound containing 50% of element X(at wt. = 10) and 50% of element Y(at wt. = 20) is :-

(1) XY (2) X_2Y

(3) XY_2 (4) X_3Y

85. An organic compound contains carbon, hydrogen and oxygen. It elemental analysis gives C, 38.71% and H, 9.67%. The empircal formula of the compound would be :-

(1) CHO (2) CH_4O

(3) CH_3O (4) CH_2O

SECTION-B

This section will have 15 questions. Candidate can choose to attempt any 10 question out of these 15 questions. In case if candidate attempts more than 10 questions, first 10 attempted questions will be considered for marking.

86. Equal mass of oxygen, hydrogen and methane are taken in a container in identical conditions. What is the ratio of their moles :-

(1) 1 : 16 : 1 (2) 1 : 16 : 2

(3) 8 : 1 : 8 (4) 16 : 1 : 8

87. Air contains nearly 20% oxygen by volume. The volume of air needed for complete combustion of 100 mL of acetylene will be :

(1) 500 mL

(2) 100 mL

(3) 250 mL

(4) 1250 mL

88. 500 mL of a gaseous hydrocarbon when burnt in excess of O_2 gave 2.5 L of CO_2 and 3.0 L of water vapours under same conditions. Molecular formula of the hydrocarbon is -

(1) C_4H_8

(2) C_4H_{10}

(3) C_5H_{10}

(4) C_5H_{12}

89. Find out mass of 6×10^{20} atoms of Iron (Fe) atomic weight of Fe = 56 amu

(1) 0.56

(2) 5.6×10^{-2}

(3) 5.6×10^{-3}

(4) 5.6

90. The number of molecule in 11 g of CO_2 is -

(1) 1.505×10^{23}

(2) 3.01×10^{23}

(3) 6.02×10^{23}

(4) None of these

91. From the following the number of atoms is greater in :

(1) 4 g hydrogen

(2) 71 g chlorine

(3) 48 g magnesium

(4) 127 g iodine

92. The volume of CO_2 at STP obtained by heating 1 gm of $CaCO_3$ will be -

(1) 1 litre

(2) 22.4 litre

(3) 0.224 litre

(4) 11.2 litre

93. Weight of H_2SO_4 in 0.1 mol of its sample.

(1) 0.98g

(2) 4.9g

(3) 49.0g

(4) 9.8g

94. What is the percentage of water in $Na_2CO_3.10H_2O$
(At mass of Na = 23, C = 12, O = 16) :-

(1) 37.07% (2) 62.93%

(3) 10% (4) None of these

95. For the reaction $X + 2Y \longrightarrow Z$, 10 mole of X and 16 mole of Y will produce :

(1) 5 mole of Z

(2) 4 mole of Z

(3) 8 mole of Z

(4) 13 mole of Z

96. Number of atoms present in 7.1 g of chlorine is :

(1) $0.1\ N_A$ (2) $0.2\ N_A$

(3) N_A (4) None of these

97. Calculate total no. of oxygen atoms in 88 g CO_2 gas :

(1) $8\ N_A$

(2) N_A

(3) $2\ N_A$

(4) $4\ N_A$

98. A mixture of gasses contains H_2 and O_2 gasses in the ratio of 1 : 4 (w/w). What is the molar ratio of the two gases in the mixture ?

(1) 4 : 1

(2) 16 : 1

(3) 2 : 1

(4) 1 : 4

99. 2 moles of nitrogen atoms at NTP occupy a volume of :

(1) 11.35 L

(2) 45.4 L

(3) 22.4 L

(4) 5.6 L

100. Which has maximum number of atoms :

(1) 24 g of C (12)

(2) 56 g of Fe (56)

(3) 27 g of Al (27)

(4) 108 g of Ag (108)

SUBJECT : BOTANY-1

Topic : Cell-Introduction, Cell Wall, Cell Membrane, All Organelles, Nucleus and Chromosome

SECTION-A

Attempt All 35 questions

101. Choose the incorrect statement with respect to cell membrane :-

(1) Cell membrane is an asymmetric structure

(2) Cholesterol controls fluidity of animal cell membranes

(3) Phospholipid molecules does not exhibit flip-flop movement

(4) Integral proteins can not be easily detached from cell membrane

102. Which one is **not** geneticaly less active structure?

(1) Euchromatin (2) Heterochromatin

(3) NOR (4) Nucleolus

103. Arrangement of microtubules in a flagellum and a centriole is respectively :-

(1) 9 + 2 and 9 + 1

(2) 9 + 1 and 9 + 0

(3) 9 + 0 and 9 + 2

(4) 9 + 2 and 9 + 0

104. Which part of chromosome is concern with ageing ?

(1) Kinetochore

(2) Primary constriction

(3) Secondary constriction

(4) Telomere

105. Which of the following pair does not contain DNA ?

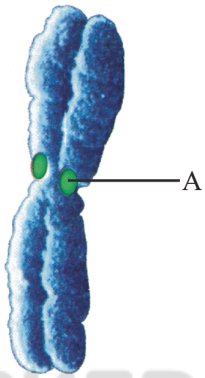
(1) Mitochondria and chloroplast

(2) Chloroplast and nucleus

(3) Lysosome and vacuole

(4) Nucleus and mitochondria

106. Diagram shows a chromosome. Identify A :-



(1) Chromosome

(2) Kinetochore

(3) Centromere

(4) Satellite

107. In plant cell, which one is a completely permeable layer ?

(1) Cell wall

(2) Tonoplast

(3) Inner chloroplast membrane

(4) Cell membrane

108. Vacuole in a plant cell :

(1) Is membrane bounded and contain stored proteins and lipids only.

(2) Lacks membrane and contain water and excretory substances

(3) Lacks membrane and contain air

(4) Is membrane bounded and contain water and excretory substances

109. Chromosome in which centromere is present in almost at the middle of chromosome is known as:-

(1) Metacentric

(2) Sub metacentric

(3) Acrocentric

(4) Telocentric

110. L-shaped chromosomes are:

(1) Metacentric

(2) Acrocentric

(3) Telocentric

(4) Submetacentric

111. In human Beings, the membrane of the erythrocyte has approximately :-

(1) 52% protein and 40% lipids

(2) 80% protein and 20% lipids

(3) 40% protein and 52% lipids

(4) 52% carbohydrates and 20% protein

112. As the polar molecules can not pass through the nonpolar ....."I"....., they requires ....."II".... of the membrane to facilitate their transport across the membrane :-

Choose the correct word for I and II :-

(1) I - Cholesterol, II - Carbohydrate

(2) I - Protein, II - Lipid

(3) I - Carbohydrate, II - Protein

(4) I - Lipid bilayer, II - carrier protein

113. Choose the incorrect statement :-

(1) Primary cell wall is first formed cell wall

(2) Secondary cell wall is thick and rigid layer

(3) Tertiary cell wall is present in all plant cells

(4) Middle lamella is the common layer between two adjacent plant cells

114. (a) It occurs against concentration gradient.

(b) It is energy dependent process.

(c) It occurs along concentration gradient.

(d) It is energy independent process.

(e) Water movement across plasma membrane.

of the above, which statements are related with Active and Passive transport respectively ?

(1) a, b and c, d, e

(2) b, c and a, d, e

(3) c, d and a, b, e

(4) a, b, e and c, d

115. (1) It gives shape to the cell.

(2) It protects the cell from mechanical damage and infection.

(3) It is found in plant, algae and fungi but not in animal.

Above statements are related with :

(1) cell-wall

(2) cell-membrane

(3) Glycocalyx

(4) All of the above

116. Which of the following have similar role in prokaryotic and eukaryotic plasma membrane respectively ?

(1) Hopanoids and phospholipids

(2) Cholesterol and Hopanoids

(3) Hopanoids and cholesterol

(4) Phospholipids and Glycolipids

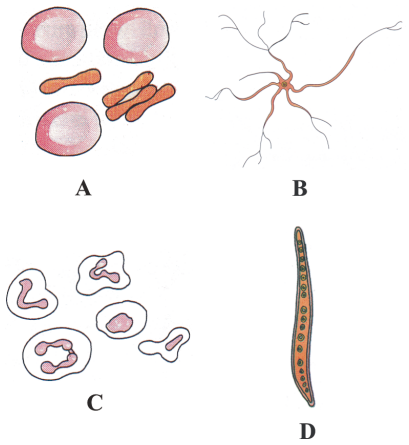
117. Chemical studies on the cell membrane especially in which cell, enabled the scientists to deduce the possible structure of plasma membrane ?

(1) Cork cells in plants

(2) Human red blood cells

(3) Ostrich egg

(4) Mycoplasma

118. 

Identify the cells given in above diagram :-

(1) A = Mesophyll cells , B = White blood cells, C = Nerve cell, D = Tracheid

(2) A = Red blood cells, B = Nerve cell, C = White blood cells, D = Tracheid

(3) A = Red blood cells, B = White blood cells, C = Mesophyll cells, D = Nerve cell

(4) A = White blood cells, B = Tracheid, C = Red blood cells, D = Nerve cell

119. Quasi fluid nature of ..... enables lateral movement of ..... within overall bilayer.

(1) Lipid, proteins

(2) Protein, carbohydrate

(3) Protein, lipid

(4) Lipid, Carbohydrate

120. What is a tonoplast

(1) Outer membrane of mitochondria

(2) Inner membrane of chloroplast

(3) Membrane of the plant vacuole of plant cells

(4) Cell membrane of plant cell

121. In ____,____ a German botanist examined a large number of plants and observed that all plants are composed of different kinds of cells which form tissue of the plants :-

(1) 1839, Schleiden

(2) 1838, Schleiden

(3) 1839, Schwann

(4) 1838, Schwann

122. Depending upon ..... membrane protein are of ..... types.

(1) Ease of extraction, Three

(2) Ease of extraction, Two

(3) Structure, Three

(4) Structure, Two

123. The cis and trans faces of the Golgi body are ..... but ..... :-

(1) Exactly similar, not interconnected

(2) Exactly similar, interconnected

(3) Entirely different, interconnected

(4) Entirely different, not interconnected

124. Autolysis is associated with

(1) Ribosome

(2) Kinetosome

(3) Lysosome

(4) Golgi apparatus

125. The main Organellae involved in modification and packaging of newly synthesized materialto their destination is

(1) Chloroplast

(2) Mitochondria

(3) Lysosome

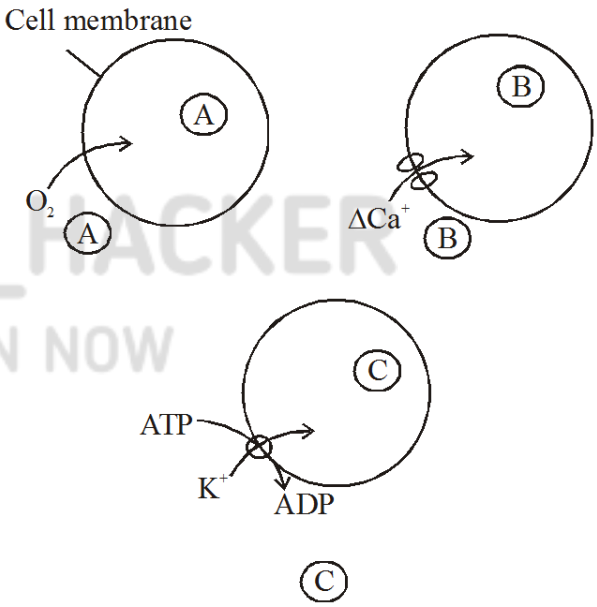
(4) Golgi bodies

126. Catalase enzyme found in –

(1) Spherosome (2) Peroxisome

(3) Glyoxisome (4) Oxysome

127. See the diagram –



Which diagram showing fascilitated diffusion.

(1) Only A

(2) Only B

(3) Both A & B

(4) Only C

128. Which of the following subtances are stored in Aleuroplast ?

(1) Starch

(2) Oil and Lipids

(3) Proteins

(4) Water and Oil

129. Cytoskeleton is made up of :-

(1) Proteinaceous filaments

(2) Calcium carbonate granules

(3) Callose deposits

(4) Cellulosic microfibrils

130. Which of the following layer is present nearest to plasma membrane in plant cell ?

(1) Secondary wall

(2) Middle lamella

(3) Primary wall

(4) Tonoplast

131. If A = 70s ribosome, B = 80s ribosome, C = Single circular DNA D = RNA molecule, E = thylakoid, F = Stromal lamellae, which of the following set is found in mitochondria ?

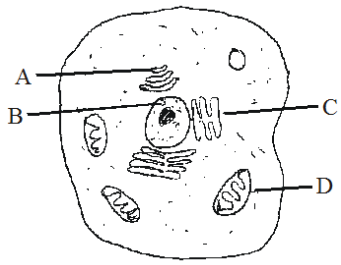
(1) B, D, E

(2) D, E, F

(3) A, D, E

(4) A, C, D

132. The RER in the cell synthesized a protein which would be later used in building the plasma membrane. But it is observed that the protein in the membrane is slightly different from the protein made in the RER. The protein was probably modified in another cell organelle. Identify the organelle in the given diagram :-



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

133. (a) Microtubules – Actin protein
(b) Ribosome – rRNA synthesis
(c) Centriole – Membraneless
(d) Flagella – Locomotion
How many of the above are mis-matched?

(1) One (2) Three

(3) Two (4) Four

134. (a) Particles observed by George Palade are composed of two subunits
(b) Cilia causing the movement of either the cell or the surrounding fluid
(c) The ribosomes on ER are smaller than the cytoplasmic ribosomes

(1) a, b correct and c incorrect

(2) a incorrect and b, c correct

(3) a, b incorrect and c correct

(4) a correct and b, c incorrect

135. Mark the statements true (T) or false (F) with respect to the cell membrane :

(A) Cell membrane is composed of lipids that are arranged as monolayer

(B) Lipid component mainly consist of phosphoglycerides

(C) The membrane of erythrocyte has approximately 40% protein and 52% lipid

(D) Quasi-fluid nature of lipid enables lateral movement of proteins within the overall bilayer

	A	B	C	D
(1)	T	T	T	F
(2)	F	T	T	T
(3)	T	F	F	T
(4)	F	T	F	T

SECTION-B

This section will have 15 questions. Candidate can choose to attempt any 10 questions out of these 15 questions. In case if candidate attempts more than 10 questions, first 10 attempted questions will be considered for marking.

136. Read the following statements :-

(A) Both the chromatids of chromosome are joined by a structure called centromere

(B) During cell division spindle fibres are attached to satellite

(C) Telomeres are rich in Guanine base.

(D) Every chromosome essentially has a secondary constriction

Find out correct sequence of true (T) and false (F) statements

(1) T F T T (2) F T F T

(3) T T F F (4) T F T F

137. Glyco protein and glyco lipid are present on cell membrane which helps in cell to cell recognition are formed by combined process of :-

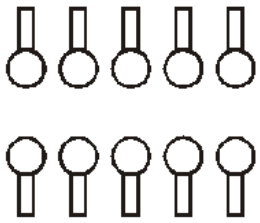
(1) ER, mitochondria

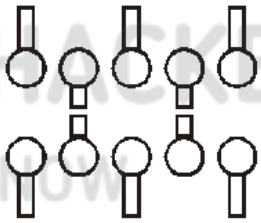
(2) ER vacuole

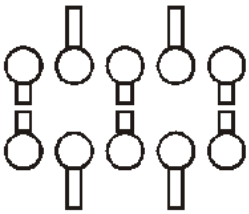
(3) ER, golgibody

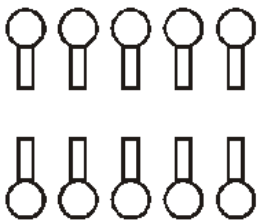
(4) Chloroplast, ribosome

138. The lipid molecules present in plasma-membrane has polar head and non polar tail. Which of the following options represents the correct arrangement of phospho lipid in bilayer of lipid ?

(1) 

(2) 

(3) 

(4) 

139. Ribosome first time observed by :-

(1) Camillo golgi

(2) George palade

(3) Robert hooke

(4) A.V. Leeuwen hoek

140. Ripening fruit softens due to :

(1) jelly formation at acidic pH

(2) conversion of starch into cellulose

(3) solubilization of pectate of middle lamella

(4) incorporation of pectate in middle lamella

141. Which of the following increase the chance of autolysis ?

(1) Cholesterol

(2) Testosterone

(3) Chloroquine

(4) All of the above

142. Chromosome with subterminal centromere has :-

(1) $\frac{q}{p} = 0$

(2) $\frac{q}{p} =$ max imum

(3) $\frac{q}{p} =$ min imum

(4) $\frac{q}{p} = 1$

143. Why the golgi apparatus remains in close association with the endoplasmic reticulum ?

(1) GB maintains the functions of ER

(2) ER maintains the functions of GB

(3) Proteins synthesised by ribosomes on the ER are modified in the cisternae of the GB

(4) Origin of both cell organelles is common

144. Fluid nature of the plasma membrane helps in

(1) Cell growth

(2) Endocytosis

(3) Intercellular junction formation

(4) All of the above

145. The number of mitochondria depends on :-

(1) Length of DNA of the cell

(2) Ribosomes of the cell

(3) Physiological activity of the cell

(4) Ploidy level of the cell

146. Which of the organelle present in the highest number in a cell ?

(1) Lysosome

(2) Nucleus

(3) Mitochondria

(4) Ribosomes

147. Lysosomal enzymes are active at :-

(1) Basic pH

(2) Acidic pH

(3) Neutral pH

(4) They are always active

148. Which one of the following structure is "an organelle within an organelle"

(1) ER

(2) Mesosome

(3) Ribosome

(4) Peroxisome

149. Lipids are arranged within the membrane with

(1) polar heads towards inner side and the hydrophobic tails towards outerside

(2) both heads and tails towards outerside.

(3) heads towards outerside and tail towards inside.

(4) both heads and tails towards inner side.

150. Who proposed a modification in the cell theory?

(1) George Palade

(2) Rudolf Virchow

(3) Robert Brown

(4) Robert Hooke

SUBJECT : BOTANY-2

Topic : Cell-Introduction, Cell Wall, Cell Membrane, All Organelles, Nucleus and Chromosome

SECTION-A

Attempt All 35 questions

151. Main constituent of middle lamella is :-

(1) Ca pectate

(2) Mg pectate

(3) Glycolipid

(4) Hemicellulose

152. ''Ergosome'' is :–

(1) Ribosome with R.E.R.

(2) Many Ribosome with m–R.N.A.

(3) Ribosome with D.N.A.

(4) All

153. Cilia and flagella are similar in :-

(1) Arrangement of microtubules

(2) Number per cell

(3) Type of movement

(4) Size or length

154. Lipid molecule arranged in bilayer form in cell membrane because of :-

(1) It has quasifluid nature

(2) It has amphipathic nature

(3) It has saturated fatty acid

(4) It provide fluid character

155. Match the column I with column II

	Column-I		Column-II
(a)	Golgi apparatus	(i)	Synthesis of protein
(b)	Lysosomes	(ii)	Storage of waste and excretory products
(c)	Vacuoles	(iii)	Formation of glycoproteins and glycolipids
(d)	Ribosomes	(iv)	Digesting biomolecules

Choose the right match from options given below:

(1) (a)–(iii), (b)–(iv), (c)–(ii), (d)–(i)

(2) (a)–(iv), (b)–(iii), (c)–(i), (d)–(ii)

(3) (a)–(iii), (b)–(ii), (c)–(iv), (d)–(i)

(4) (a)–(i), (b)–(ii), (c)–(iv), (d)–(iii)

156. Function like cell growth, formation of intercellular junctions are possible due to which nature of the membrane ?

(1) Selective permeable nature

(2) Living nature

(3) Fluid nature

(4) Stable nature

157. Various biochemical reactions or most cellular activities occurs in which ARENA of cell.

(1) Cell wall (2) Vacuole

(3) Cytoplasm (4) Nucleolus

158. Which wall gradually diminishes as the cell matures :-

(1) Primary cell wall

(2) Secondary cell wall

(3) Tertiary cell wall

(4) 1 and 2 both

159. Which of the following is not present in cell membrane ?

(1) Phospholipid

(2) Glycolipid

(3) Lignin

(4) Cholesterol

160. Which of the following is largest isolated cell (according to diameter)?

(1) Nerve cells

(2) Ostrich egg

(3) RBC

(4) Fibres

161. 70S type of ribosome are found in :-

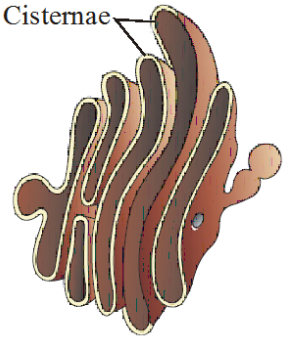
(1) Mitochondria

(2) Chloroplast

(3) Bacteria

(4) All of the above

162. Which of the following organelle in the figure correctly matches with its functions ?



(1) Rough endoplasmic reticulum – Lipid synthesis

(2) Golgi apparatus – protein synthesis

(3) Smooth endoplasmic reticulum-Aerobic respiration

(4) Golgi apparatus – Glycosylation

163. Glycoproteins are known to play an important role in cell-cell recognition, the specificity of this recognition is largely provided by

(1) lipid portion of glycoproteins

(2) protein portion of glycoproteins

(3) carbohydrate portion of glycoproteins

(4) both carbohydrate and protein components of glycoproteins.

164. Cell hypothesis was given by _____ ,according to this body of plants and animals is made up of cell and their products?

(1) Schleiden

(2) Rudolf Virchow

(3) Schwann

(4) Both (1) & (3)

165. Singer and Nicholson's model of plasma membrane differs from Robertson's model in the :-

(1) Number of lipid layers

(2) Arrangement of lipid layers

(3) Arrangement of proteins

(4) Absence of protein in singer and nicholson's model

166. In which year fluid mosaic model proposed ?

(1) 1935

(2) 1972

(3) 1665

(4) 1959

167. Who among the following 'Studied differents types of animal cells and reported that cells had a thin outer layer, which is today known as "plasma membrane" ?

(1) Rudolf Virchow

(2) Theodore Schwann

(3) Malthias Schleiden

(4) Robert Hooke

168. When green tomatoes will turn red ?

(1) New chloroplasts are made

(2) Chloroplasts are disintegrated and converted into chromoplasts

(3) Chromoplasts are changed into chloroplasts

(4) None of the above

169. Match the Column-I with Column-II and select the correct option from the codes given below.

Column-I	Column-II
A. Chloroplasts	(i) Colourless plastids
B. Chromoplasts	(ii) Yellow, orange or red coloured plastids
C. Leucoplasts	(iii) Green plastids

(1) A-(iii), B-(i), C-(ii)

(2) A-(iii), B-(ii), C-(i)

(3) A-(i), B-(iii), C-(ii)

(4) A-(i), B-(ii), C-(iii)

170. Part of chromosome after secondary constriction is called :–

(1) Chromomere

(2) Telomere

(3) Satellite

(4) Nucleolar organiser

171. Acrosome of sperm is derived from :–

(1) Golgi body (2) Lysosome

(3) Ribosome (4) Cisternae

172. Pesence of DNA in chloroplasts and mitochodria indicates that :

(1) glycolysis occurs in them

(2) they take part in ATP synthesis

(3) they originated from independent free living organism

(4) they undergo meiosis and mitosis independent of nucleus

173. Which of the following cellular organelles is/are bound by a single membrane?
Peroxisome, Lysosomes, Mitochondria

(1) Only peroxisomes but not lysosomes and Mitochondria

(2) BOth peroxisomes and Lysosomes but not mitochondria

(3) All of the three organelles

(4) None of the three organelles

174. Select the incorrect statement –

(1) No. of mitochondria depend on physiological activity of cell

(2) No. of cristae depend upon activity of mitochondria

(3) No. of ribosome & RER is high in protein secreting cells.

(4) No. of lysosome is minimum in W.B.C./phagocytes.

175. Which one is wrong in following pairs ?

(1) The largest isolated single cell – Ostrich egg

(2) Human red blood cells – 7.0 µm in diameter

(3) Mycoplasma – Smallest cells

(4) Nerve cells – Smallest animal cells

176. Centriole takes part in :

(1) cell plate formation

(2) spindle formation

(3) nucleolus formation

(4) end of cell division

177. Which of the following is not correct :

(1) Robert brown discovered the cell

(2) Schleiden and schwann formulated the cell theory

(3) Virchow explained that cells are formed from pre-existing cell

(4) A unicellular organism carries out its life activities within a single cell

178. Which structure has an organisation like the cartwheel ?

(1) Mitochondria (2) Nucleus

(3) Ribosome (4) Centriole

179. In plant as well as in animal cells :-

(1) Ribosomes are found within plastids

(2) Cilia are made up of flagillin protein

(3) Plasma membrane are lipo-proteinaceous in nature

(4) Cell wall protect the cell from mechanical damage

180. The main difference between active and passive transport across cell membrane is that :-

(1) Passive transport is non selective

(2) Passive transport occurs more rapidly than active transport

(3) Passive transport occur along the concentration gradient while active transport is energy based against the concentration gradient

(4) Passive transport is confined to anions while active transport is for cation

181. Cellulose which is a main component of cell wall is formed in :-

(1) Ribosome

(2) Cell membrane

(3) Sphaerosome

(4) Smooth E.R.

182. In a muscle fibre Ca^{++} is stored in :-

(1) Mitochondria

(2) ER

(3) Golgibody

(4) Lysosome

183. Following characteristic represented by a cell organelle :-

Cell sap, stored waste material contain water soluble pigment Anthocyanin.

(1) Lysosome

(2) Vacuole

(3) Chloroplast

(4) Mitochondria

184. Ribosomes present at ER

(1) Towards the intra luminal side

(2) Towards the extra luminal side

(3) Inner nuclear membrane

(4) Outer mitochondrial membrane

185. Consider the following statements (A-D) and select the option which includes all the correct ones only :-

(A) Depending on the ease of extraction membrane proteins can be classified as extrinsic and intrinsic.

(B) The lipids are arranged within the membrane with the non-polar head towards outersides and hydrophilic tail towards the innerside.

(C) Cell membrane is composed of lipids that are arranged in monolayer.

(D) The lipid component of the membrane mainly consists of phosphoglycerides.

(1) A & C

(2) B & D

(3) A, B & D

(4) A & D

SECTION-B

This section will have 15 questions. Candidate can choose to attempt any 10 questions out of these 15 questions. In case if candidate attempts more than 10 questions, first 10 attempted questions will be considered for marking.

186. The non–sticky chromosomal ends are known as –

(1) Chromatids

(2) Centromere

(3) Chromomere

(4) Telomere

187. Outer membrane of mitochondria is more permeable because

(1) Due to presence of more proteins

(2) Due to presence of more porins

(3) Due to presence of cardiolipin

(4) Due to absence of phospholipid

188. Plasma membrane is an asymmetrical structure because :-

(1) Carbohydrate is present on inner surface and spectrin protein is present on outer surface of plasma membrane.

(2) Carbohydrate is present towards extra cellular face and spectrin protein is present towards cytosolic face of cell membrane.

(3) Protein is present on outer surface and phospholipid is present on inner surface of plasma membrane.

(4) Extrinsic protein on outer surface and intrinsic protein on inner surface of plasma membrane.

189. Which of the following statement is correct with respect to ribosomes ?

(1) They remain united in absence of protein synthesis

(2) Mg^{++} concentration affects the binding of two subunit

(3) More important for Lipid synthesis

(4) More important for nucleic acid synthesis

190. Choose the correct statement for chromosome :-

(1) In telocentric chromosome one arm is very long and one is very short

(2) Acrocentric-one arm is very short

(3) Metacentric-one arm is very long

(4) Submetacentric-Centromere found in the middle of the chromosome

191. RER is found abundantly in goblet cell, pancreatic cells and liver cells is mainly engaged in

(1) production and excretion of protein

(2) production and excretion of lipid

(3) production and excretion of nucleic acid

(4) glycosylation of protein

192. The nucleoprotein fibers (chromatin) in the interphase are stained with :-

(1) A basic dye arginine

(2) An acidic dye acetocarmine

(3) A basic dye ganus green

(4) A basic dye acetocarmine

193. An enzymatic protein in flagella having ability of hydrolysis of ATP, is :-

(1) Actin

(2) Dynein

(3) Tubulin

(4) Nexin

194. Plant cement is :-

(1) Cellulose

(2) Hyaluronic acid

(3) Hemicellulose

(4) Calcium pectate

195. Algal cell wall is composed by :-

(1) Cellulose

(2) Galactans

(3) Mannans

(4) All of these

196. In chloroplast chlorophylls and xanthophylls are present respectively in the

(1) Thylakoid and stroma

(2) Thylakoid and inner membrane

(3) Thylakoid Membrane

(4) Thylakoid and periplastidial space

197. Glycoprotein and Glycolipid are present in

(1) Primary cell wall

(2) Secondary cell wall

(3) Tertiary cell wall

(4) Cell membrane

198. Which of the following stain is used to visualize mitochondria in cell ?

(1) Fast Green

(2) Saffranin

(3) Acetocarmine

(4) Janus Green-B

199. Cell wall and middle Lamella may be Traversed by _____ which connect the _____ of neighbouring cell ?

(1) Plasmalemma, protoplasm

(2) Plasmodesmata, cytoplasm

(3) Desmosomes, ER

(4) Protoplast, plasma membrane

200. Read the following functions (A-D) and answer as asked next to them

A = Lipid synthesis

B = Protein synthesis

C = Nucleic acid synthesis

D = Progesterone synthesis

Smooth endoplasmic reticulum is the site for how many of the above function.

(1) Four

(2) One

(3) Two

(4) Three

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

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