Paper Code
(1011ASAT010124B2)

FORM NUMBER

ASAT

SET
B

(ALLEN Scholarship Cum Admission Test)
(Session : 2024-25)
For

ALLEN UAE : ENTHUSIAST & CAREER FOUNDATION : (CLASS XII)

Time : 2 Hrs. (For XI to XII Moving Students) Maximum Marks : 320

Please read the instruction carefully. You are allotted 5 minutes specially for this purpose

Things NOT ALLOWED in EXAM HALL : Blank Paper, clipboard, log table, slide rule, calculator, camera, mobile and any electronic or electrical gadget. If you are carrying any of these then keep them at a place specified by invigilator at your own risk

INSTRUCTION

1. This booklet is your Question Paper. **DO NOT** open the Booklet until the invigilator instructs to do so.
2. Fill your Form No. in the space provided on the top of this page.
3. The Answer Sheet is provided to you separately which is a machine readable Optical Response Sheet (ORS). You have to mark your answers in the ORS by darkening bubble, as per your answer choice, by using black & blue ball point pen.
4. Total Questions to be Attempted 80. Part-I : 20 Questions & Part-II : 60 Questions.
5. After opening the Question Paper, check the following:
   a. There are **11 pages** in the booklet containing question no. **1 to 100 under 2 Parts i.e. Part-I & Part-II**.
   b. Part-I contains total 20 questions of IQ (Mental Ability).
   c. Part-II contains total 80 questions under 4 sections which are –
   Section (A): Physics, Section (B): Chemistry, Section (C): Mathematics & Section (D): Biology.
   ***Important :** *For Engineering Stream attempt Only Part-I and Part-II [Section-A (Physics), Section-B (Chemistry) & Section-C (Mathematics)].
   *For Medical Stream attempt Only Part-I and Part-II [Section-A (Physics), Section-B (Chemistry) & Section-D (Biology)].
6. Marking Scheme:
   a. If darkened bubble is RIGHT answer: **4 Marks**.
   b. If no bubble is darkened in any question: **No Mark**.
   c. Only for part - II: If darkened bubble is WRONG answer: **–1 Mark (Minus One Mark)**.
7. Think wisely before darkening bubble as there is negative marking for wrong answer.
8. If you are found involved in cheating or disturbing others then your ORS will be cancelled.
9. Do not put any stain on ORS and hand it over back properly to the invigilator.

Note : Return This Test Paper

ALLEN OVERSEAS

Unit 408, The Business Centre, Khalid Bin Al Waleed Rd - Bur Dubai, (Near Burjuman Metro Exit-4), Dubai

PART - I

IQ (MENTAL ABILITY)

This section contains **20 multiple choice questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

Direction (Q. 1 - 4) : Read the text and the statements carefully and answer the question.

Four people of different nationality live on the same side of a street in four houses each of different colour. Each person has a different favourite drink. The following additional information is also known -

A. The Enlish man lives in the red house.

B. The Italian drinks tea.

C. The Norwegian lives in the first house on the left.

D. In the 2nd house from the right they drink milk.

E. The Norwegian lives adjacent to the blue house.

F. The Spaniard drinks fruit juice.

G. Tea is drunk is the blue house.

H. The white house is to the right of the red house.

I. Coca is drunk in the yellow house.

1. Milk is drunk by -

(1) Norwegian

(2) Englishman

(3) Italian

(4) None of these

2. The Norwegian drinks.

(1) Milk

(2) Coca

(3) Tea

(4) Fruit Juice

3. The colour of the Norwegian's house is

(1) Yellow (2) White (3) Blue (4) Red

4. Which of the following is not true?

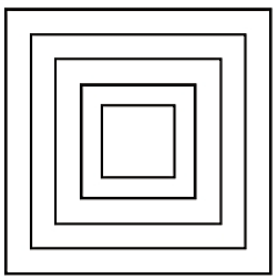
(1) Milk is drunk in the red house

(2) Italian lives in the blue house

(3) The Spaniard lives in a corner house

(4) The Italian lives next to the Spaniard

5. The adjoining figure shows a set of concentric squares. If the diagonal of the innermost square is 2 unit and if the distance between the corresponding corners of any two successive squares is 1 unit, find the difference between the areas of the eight and the seventh squares, counting from the inner most square.



(1) $10\sqrt{2}$ sq. unit

(2) 30 sq. unit

(3) $35\sqrt{2}$ sq. unit

(4) None of these

6. The length of a ladder is exactly equal to the hight of the wall it leaning against. If lower end of the ladder is kept on a stool of height 3m and stool is kept 9m away from the wall, the upper end of the ladder coincides with the top of the wall. Then the height of the wall is -

(1) 12 m (2) 15 m

(3) 18 m (4) 11 m

7. Consider four digit numbers for which the first two digits are equal and the last two digits are also equal. How many such numbers are perfect squares?

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

8. What is the number of distinct terms in the expansion of $(a + b + c)^{20}$?

(1) 231 (2) 253 (3) 242 (4) 210

Direction : (Q.9 & Q. 10)

Answer questions based on the following information.

A boy is asked to put in a baskat one mango when ordered 'One', one arrange when ordered 'Two' one apple when ordered 'Three" and is asked to take out from the basket one mango and an orange when ordered 'Four'. A sequence of order is given as -

1 2 3 3 2 1 4 2 3 1 4 2 2 3 3 1 4 1 1 3 2 3 4

9. How many total fruits will be in the basket at the end of the above order sequence?

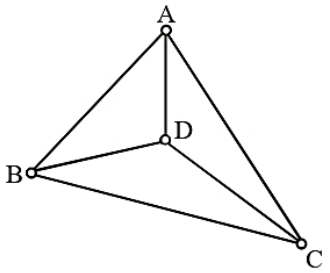
(1) 9 (2) 8 (3) 11 (4) 10

10. How many total oranges were in the basket at the end of the above sequence?

(1) 1 (2) 4

(3) 3 (4) 2

11. Four cities are connected by a road network as shown in the figure. In how many ways can you start from any city and come back to it without travelling on the same road more than once?



(1) 8 (2) 12

(3) 16 (4) 20

12. Consider the five points comprising the vertices of a square and intersection point of its diagonals. How many triangles can be formed using these points.

(1) 4 (2) 6 (3) 8 (4) 10

13. On what date of November, 1977 did 4th Wednesday fall :

(1) 22/11/77

(2) 23/11/77

(3) 27/11/77

(4) 28/11/77

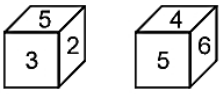
14. 'P + Q' implies that P is the brother of Q. 'P – Q' implies that P is the mother of Q, whereas, 'P × Q' implies that P is the sister of Q. Which of the following implies : 'M is the maternal uncle of R' :

(1) M – R + K

(2) M + K – R

(3) M + K × Q

(4) There is no such a sign

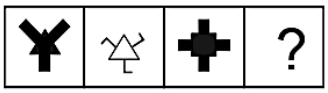
15. 

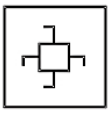
Which number will come opposite to number 3 :

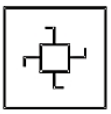
(1) 2 (2) 3

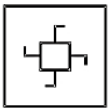
(3) 4 (4) 6

16. **Direction :** Which of the answer figures in question will replace the question mark (?) to exhibit same relationship between figures third and fourth as analogous to first and second ?



(1) 

(2) 

(3) 

(4) 

17. An intelligence agency decides on a code of 2 digits selected from 0, 1, 2, ... 9. But the slip on which code is hand written allows confusion between top & bottom, because these are indistinguishable. Thus for example, the code 91 could be confused with 16. How many codes are there such that there is no possibility of any confusion?

(1) 25

(2) 75

(3) 80

(4) None of these

18. The product of all integers from 1 to 100 will have the following no. of zeros at the end.

(1) 20 (2) 24

(3) 19 (4) 12

19. **Direction :** Read the following information and answer the question that follows :

(i) Six friends A, B, C, D, E and F are sitting in a closed circle facing the centre.

(ii) E is to the left of D.

(iii) C is between A and B.

(iv) F is between E and A.

Who is to the left of B :

(1) A (2) C

(3) D (4) E

20. If 5 days before today it was sunday, what day will it fall on after 3 days ?

(1) Monday (2) Sunday

(3) Tuesday (4) Saturday

PART-II

SECTION-A : PHYSICS

This section contains **20 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

21. A uniform chain of length 2m is kept on table such that length of 60 cm hangs freely from the edge of the table. The total mass of the chain is 4 kg. What is the work done in pulling the entire chain on the table–

(1) 7.2 J (2) 3.6 J

(3) 120 J (4) 1200 J

22. A smooth block is relesed at rest on an inclined plane of angle θ and then slides a distance d. The time to slide is n-times much to slide on rough inclined than on a smooth indlined plane. Find the coefficient of friction–

(1) $\mu = 1-\frac{1}{n^2}$

(2) $\mu_e = \tan\theta\sqrt{1-\frac{1}{n^2}}$

(3) $\mu = \sqrt{1-\frac{1}{n^2}}$

(4) $\mu = \tan\theta\left(1-\frac{1}{n^2}\right)$

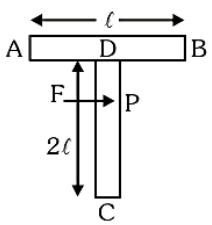
23. A T-shaped uniform object with dimensions shown in the figure is lying on a smooth floor. A force $\vec{F}$ is applied at the point P parallel to AB such that the object has only the translational motion without rotation find the location of P with respect to C

(1) $\frac{-2\ell}{3}$

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

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

(4) ℓ



24. If the force on a rocket, moving with a velocity of 300 m/s is 210 N than the rate of combustion of the fuel is–

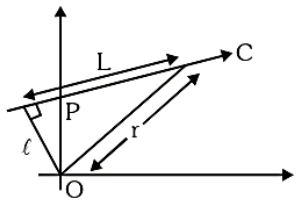
(1) 0.07 kg/s (2) 1.4 kg/s

(3) 0.7 kg/s (4) 10.7 kg/s

25. A particle of mass 'm' moving with velocity V collidies with a stationary particle of mass 2m after collision, the speed of combined particle is–

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

26. A particle of mass m moves along line PC with velocity V as shown. What is the angular momentum of the particle about P



(1) mvL (2) mvℓ

(3) mvr (4) zero

27. A Body of mass 3kg is under a constant force which cause a displacement S, given by the relation $S = \frac{1}{3}t^2$ where t is in seconds. Find work done by the force in 2 sec. is–

(1) $\frac{19}{5}$J (2) $\frac{5}{19}$J (3) $\frac{3}{8}$J (4) $\frac{8}{3}$J

28. A force $\vec{F} = 3\hat{i} + c\hat{j} + 2\hat{k}$ on acting on a particle cause a displacement $\vec{S} = -4\hat{i} + 2\hat{j} + 3\hat{k}$ in its own direction. If work done is 6J find value of C

(1) 0 (2) 6 (3) 1 (4) 12

29. If a mercury drop is divided into 8 equal parts its total energy–
(1) Remain same
(2) Become twice
(3) Become half
(4) Become 4 times

30. The idea of calculus was given by–
(1) Newton
(2) Einstein
(3) Marconi
(4) Planck

31. The maximum speed with which a car can be driven round a curve of radius 18 m without skidding ($g = 10\ m/s^2$ and coefficient of friction between rubber tyre and the road is 0.2)
(1) 36 km/h
(2) 21.6 km/h
(3) 18 km/h
(4) 14.4 km/h

32. A 30 gm bullet travelling initially at 500 m/s penetrates 12 cm into wooden block that provide a constant retardation to bullet. The average force exerted will be ($g = 10 m/sec^2$) –
(1) 31250 N
(2) 41250 N
(3) 31750 N
(4) 3040 N

33. A solid spherical ball rolls on an incline plane find the ratio of rotational E_K to total K.E. is–

(1) $\frac{1}{2}$ (2) $\frac{1}{6}$

(3) $\frac{7}{10}$ (4) $\frac{2}{7}$

34. For a projectile $(range)^2$ is 48 times of $(max.\ height)^2$ obtained. Final the angle of projection–
(1) 60° (2) 30°
(3) 45° (4) 75°

35. The acceleration of a solid cyclinder rolling down an inclined plane of inclination is 30°

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

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

36. Moment of inertia of a thin circular disc of mass M and radius R about any diameter is–

(1) $\frac{MR^2}{4}$ (2) MR^2

(3) $\frac{MR^2}{2}$ (4) $2MR^2$

37. The rate of flow of water in a capillary tube of length ℓ and radius r is V. The rate of flow in another capillary tube of length 2ℓ and radius 2r for same pressure difference would be–
(1) 16 V (2) 9 V
(3) 8 V (4) 2 V

38. Which of the following has the dimension of pressure–
(1) $[MLT^{-2}]$ (2) $[ML^{-1}T^{-2}]$
(3) $[ML^{-2}T^{-2}]$ (4) $[M^{-1}L^{-1}]$

39. A body is tied with a string and is given a circular motion with a velocity v having radius r. The magnitude of the acceleration is–

(1) $\frac{v}{r}$ (2) $\frac{v^2}{r}$ (3) vr (4) $\frac{v^2}{r^2}$

40. Magnitude of Velocity of body on reaching the point from which it is was projected upward (under gravity)–
[v & u = initial & final speed respectively at that point]
(1) v = 0
(2) v = u
(3) v = 24
(4) v = 0.5 u

SECTION-B : CHEMISTRY

This section contains **20 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

41. 4.6×10^{22} atoms of an element weigh 13.8 gm. The gram atomic mass of the element is:

(1) 120 gm (2) 180 gm

(3) 35.5 gm (4) 108 gm

42. 1 gm-atom of nitrogen may represents :

(1) 6.02×10^{23} N_2 molecules

(2) 22.4 lit. of N_2 at 1 atm & 273 K

(3) 11.2 lit. of N_2 at 1 atm & 0°C

(4) 28 g of nitrogen

43. Which of the following gas has maximum number of atoms.

(1) 44.8 lit. O_3 at 1 atm, 273 K

(2) 49.26 lit. of H_2 at 1 atm, 300 K

(3) 22.4 lit. of O_2 at 2 atm, 546 K

(4) 11.2 lit. of laughing gas (N_2O) at 4 atm, $\frac{273}{2}$ K

44. The first four ionisation energy value of an element are 190, 580, 590 and 5960 kcal. The number of valence electrons in the element is :

(1) 1 (2) 2

(3) 3 (4) 4

45. Highest difference between 1^{st} & II^{nd} ionisation energies will be observed

(1) Li (2) B

(3) O (4) F

46. Find the species / molecule having maximum number of lone pair on the central atom.

(1) $ClOF_4^-$ (2) $ClOF_2^+$

(3) BH_4^- (4) $XeOF_2$

47. If y-axis is the approaching axis between two atoms, then which of the set of orbitals can not form the π bond between two atoms in general.

(1) $p_z - p_z$

(2) $p_x - p_x$

(3) $p_x - p_y$

(4) None of these

48. When a hydrogen atom emits a photon of energy 12.1 eV. Its orbit angular momentum changes by:

(1) $\frac{h}{2\pi}$ (2) $\frac{2h}{\pi}$

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

49. A photon of energy $h\nu$ is absorbed by a free electron of a metal having work - function $\phi < h\nu$. Choose the correct option(s).

(1) The electron is sure to come out.

(2) The electron is sure to come out with a kinetic energy $h\nu - \phi$

(3) Either the electron does not come out or it comes out with a kinetic energy $h\nu - \phi$

(4) It may come out with a kinetic energy less than and equal to $h\nu - \phi$

50. The pressure of mixture of equal weights of two gases of molecular weight 4 and 40 is 1.1 atm. The partial pressure of the lighter gas in the gas mixture is

(1) 0.55 atm (2) 0.11 atm

(3) 1 atm (4) 0.1 atm

51. The density of gas A is twice that of B at the same temperature and the molecular weight of gas B is thrice that of A. The ratio of pressure of gas A and gas B will be

(1) 1 : 6 (2) 7 : 8

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

52. For the reaction

$$2NH_3(g) \longrightarrow N_2(g) + 3H_2(g),$$

what is the % of NH_3 converted if the mixture diffuses twice as fast as that of SO_2 under similar conditions.

(1) 3.125 % (2) 31.25 %

(3) 6.25 % (4) 62.5 %

53. One mole of N_2O_4 (g) at 300 K is left in a closed container under one atm . It is heated to 600 K when 20 % by mass of N_2O_4 (g) decomposes to NO_2 (g) . The resultant pressure is :

(1) 1.2 atm (2) 2.4 atm

(3) 2.0 atm (4) 1.0 atm

54. For the following gases equilibrium.

$$N_2O_4\,(g) \rightleftharpoons 2NO_2\,(g)$$

K_p is found to be equal to K_c. This is attained when temperature is

(1) 0°C

(2) 273 K

(3) 1 K

(4) 12.19 K

55. For the reaction : $CO(g) + \frac{1}{2}O_2(g) \rightleftharpoons CO_2(g)$, K_p / K_c is :

(1) RT (2) $(RT)^{-1}$

(3) $(RT)^{-1/2}$ (4) $(RT)^{1/2}$

56. A solution with pH 2.0 is more acidic than the one with pH 6.0 by a factor of:

(1) 3

(2) 4

(3) 3000

(4) 10000

57. The first and second dissociation constants of an acid H_2A are 1.0×10^{-5} and 5.0×10^{-10} respectively. The overall dissociation constant of the acid will be :

(1) 5.0×10^{-5}

(2) 5.0×10^{15}

(3) 5.0×10^{-15}

(4) 0.2×10^{5}

58. The hydroxide of alkaline earth metal, which has the lowest value of solubility product (K_{sp}) at normal temperature (25°C) is

(1) $Ca(OH)_2$ (2) $Mg(OH)_2$

(3) $Sr(OH)_2$ (4) $Be(OH)_2$

59. Which of the following carbonate of alkali metal has the least thermal stability?

(1) Li_2CO_3

(2) K_2CO_3

(3) Cs_2CO_3

(4) Na_2CO_3

60. The pair of compounds, which cannot exist together in a solution is

(1) $NaHCO_3$ and NaOH

(2) Na_2CO_3 and NaOH

(3) $NaHCO_3$ and Na_2CO_3

(4) $NaHCO_3$ and H_2O

Attempt any one of the section C or D

SECTION-C MATHEMATICS

FOR ADMISSION IN ENGINEERING STREAM

This section contains **20 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

61. The angle between tangents from the origin to the circle $(x-7)^2 + (y+1)^2 = 25$ is

(1) $\pi/3$ (2) $\pi/6$

(3) $\pi/2$ (4) 0

62. If the sum to n terms of a series be $5n^2 + 2n$, then second term is

(1) 15 (2) 17

(3) 10 (4) 5

63. In a triangle ABC, the value of

$$\frac{\cos^2 B - \cos^2 C}{b+c} + \frac{\cos^2 C - \cos^2 A}{c+a} + \frac{\cos^2 A - \cos^2 B}{a+b}$$

is :

(1) 0 (2) 1

(3) 2 (4) 3

64. Area of the circle in which a chord of length $\sqrt{2}$ makes an angle $\pi/2$ at the centre is

(1) $\pi/2$ (2) 2π

(3) π (4) $\pi/4$

65. If a, b, c be the sides of ΔABC and equations $ax^2 + bx + c = 0$ and $5x^2 + 12x + 13 = 0$ have a common root, then $\angle C$ is

(1) 60° (2) 90°

(3) 120° (4) 45°

66. The point $(2t^2 + 2t + 4, t^2 + t + 1)$ lies on the line $x + 2y = 1$, for

(1) All real values of t

(2) Exactly one real value of t

(3) Exactly two real value of t

(4) No real value of t

67. 3^{51} when divided by 8 leaves the remainder

(1) 1 (2) 6

(3) 5 (4) 3

68. If the point $P(a, a^2)$ lies completely inside the triangle formed by the lines $x = 0$, $y = 0$ and $x + y = 2$, then exclusive range of 'a' is

(1) $a \in (0, 1)$ (2) $a \in \left(1, \sqrt{2}\right)$

(3) $a \in \left(\sqrt{2}-1, \sqrt{2}\right)$ (4) $a \in \left(\sqrt{2}-1, 1\right)$

69. The minimum value of $3\tan^2\theta + 12\cot^2\theta$ is:

(1) 6 (2) 8

(3) 10 (4) None of these

70. The third term of a G.P. is 4, the product of the first five terms is

(1) 4^3 (2) 4^5

(3) 4^4 (4) None of these

71. The origin and the roots of the equation $z^2 + pz + q = 0$ form an equilateral triangle, if

(1) $p^2 = q$ (2) $p^2 = 3q$

(3) $q^2 = 2p$ (4) $q^2 = p$

72. If ω is an imaginary cube root of unity, then $(1 + \omega - \omega^2)^7$ equals

(1) $128\,\omega$ (2) $-128\,\omega$

(3) $128\,\omega^2$ (4) $-128\,\omega^2$

73. If ex-radii r_1, r_2, r_3 of a triangle are in H.P. then its sides a, b, c are in:

(1) A.P. (2) G.P.

(3) H.P. (4) None of these

74. 10^{th} term of the series $5 + 7 + 11 + 17 + 25 + \ldots$ is

(1) 90 (2) 95 (3) 85 (4) 100

75. $\left(\frac{1+\cos\frac{\pi}{8}+i\sin\frac{\pi}{8}}{1+\cos\frac{\pi}{8}-i\sin\frac{\pi}{8}}\right)^8$ (where $i = \sqrt{-1}$) is equal to

(1) $1 + i$ (2) $1 - i$ (3) 1 (4) -1

76. The set of values of a for which 1 lies between the roots of equation $x^2 - ax - a + 3 = 0$ is

(1) $(-\infty, -6)$ (2) $(-\infty, -6]$

(3) $(-\infty, -6) \cup (2, \infty)$ (4) $(2, \infty)$

77. If $3\sin\theta + 5\cos\theta = 5$, then the value of $5\sin\theta - 3\cos\theta$ is equal to

(1) 5 (2) 3

(3) 4 (4) none of these

78. If $\sqrt{x+3-4\sqrt{x-1}} + \sqrt{x+8-6\sqrt{x-1}} = 1$. Then value of x is

(1) {5, 10} (2) [1, ∞)

(3) [5, 10] (4) none of these

79. The co-efficient of 'y' in the expansion of $(y^2 + c/y)^5$ is

(1) $10\,c^3$

(2) $20\,c^2$

(3) 10 c

(4) 20 c

80. Solution set of the inequality $5^{x+2} > \left(\frac{1}{25}\right)^{\frac{1}{x}}$ is:

(1) $(-2, 0)$

(2) $(0, \infty)$

(3) $(-5, 5)$

(4) $(-2, 2)$

SECTION-D : BIOLOGY

FOR ADMISSION IN MEDICAL STREAM

This section contains **20 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

81. Choose the **correct** statement from following–

(1) Most of bacteria are autotrophs

(2) All bacteria are heterotrophs

(3) Most of bacteria are heterotrophs

(4) Some bacteria are heterotrophs

82. Desynapsis of homologous chromosomes is started and chiasmata are first seen during?

(1) Zygotene

(2) Diplotene

(3) Diakinesis

(4) Anaphase-II

83. Most reduced gametophyte generation found in–

(1) Bryophyta

(2) Pteridophyta

(3) Gymnosperms

(4) Angiosperms

84. During secondary growth is root, cambium ring arises from–

(1) Portion of pericycle tissue above protoxylem

(2) Tissues located below phloem bundles

(3) Both (1) and (2)

(4) Below protoxylem and above protoxylem conjugative tissue

85. Match the names of phyla listed under column–I with the body cavity given under column–II. Choose the answer which gives the correct combination of the alphabets of the two column–

Column–I (Phylum)	**Column–II (Body cavity)**
(A) Platyhelminthes	(p) Enterocoel
(B) Nematoda	(q) No body cavity
(C) Annelida	(r) Pseudocoel
(D) Echinodermata	(s) Schizocoel

(1) A–s, B–q, C–r, D–p

(2) A–q, B–r, C–s, D–p

(3) A–s, B–r, C–q, D–p

(4) A–r, B–q, C–s, D–p

86. What is the orientation of centrioles in centrosome–

(1) Parallel

(2) Perpendicular

(3) Oblique

(4) Both Oblique and Parallel

87. Which of the following groups is deuterostome?
(1) Annelida, Mollusca, Chordata
(2) Annelida, Arthropoda, Mollusca
(3) Arthropoda, Mollusca, Echinodermata
(4) Echinodermata, Hemichordata, Chordata

88. Which level of organization is found in majority of animals?
(1) Cellular grade
(2) Cell-tissue grade
(3) Tissue-organ grade
(4) Organ-Organ system grade

89. The number of species that are known and described range between–
(1) 1.7 – 1.8 billion (2) 1.7 – 1.8 million
(3) 7 million (4) 5 – 50 million

90. In which type of placentation, ovules are present on central axis–
(1) Axile (2) Free central
(3) Parietal (4) Both (1) and (2)

91. Vascular plants producing integumented megasporangia but not ovary are–
(1) Bryophytes (2) Pteridophytes
(3) Gymnosperms (4) Angiosperms

92. Which of the following statement is true?
(1) Animal cells possess a cell wall
(2) Animals are unicellular eukaryotes
(3) Animals have autotrophic nutrition
(4) Animals require oxygen for aerobic respiration

93. This one is the characteristic of epithelial tissue–
(1) Tissues are highly vascularized
(2) These cells never produce glands
(3) The cells will have a rapid rate of cell division
(4) Large intercellular spaces are seen between cells

94. The actual account of habitat and distribution of plants of given area is known as–
(1) Flora (2) Manual
(3) Monograph (4) Ecosystem

95. A tissue is–
(1) Group of similar cells that function together in a specialized activity
(2) Group of separate organs that are coordinated in activities
(3) Layer of cells surrounding an organ
(4) Sheet of cells one layer thick

96. Pyriform, biflagellate gametes are produced in–
(1) *Ectocarpus*, *Dictyota*
(2) *Ectocarpus*, *Polysiphania*
(3) *Fucus*, *Porphyra*
(4) *Ulothrix*, *Polysiphania*

97. Sucrose, a common table sugar is composed of–
(1) Glucose + fructose
(2) Glucose + galactose
(3) Fructose + galactose
(4) Fructose + fructose

98. Golgi complex receives proteins for modification from RER at which face–
(1) Cis face (2) Trans face
(3) Concave face (4) Maturing face

99. Which is a reducing sugar?
(1) Cellulose
(2) Starch
(3) Sucrose
(4) Maltose

100. In which phase of mitosis, cell does not have nucleolus?
(1) Late prophase
(2) Telophase
(3) Interphase
(4) All of these

Space for rough work