

# Sikkim Public Service Commission

## Preliminary Examination for the post of Sub-Jailer

Time Allowed: 2.00 hours

GENERAL STUDIES - II

Maximum Marks: 200

### INSTRUCTIONS TO CANDIDATES

*Read the instructions carefully before answering the questions: -*

1. This Test Booklet consists of 16 (sixteen) pages and has 104 (hundred and four) printed questions.
2. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BOOKLET DOES NOT HAVE ANY UNPRINTED, TORN OR MISSING PAGES OR ITEMS. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
3. This Test Booklet consist of Multiple-Choice Questions. The answers for these questions have to be marked in the OMR Answer Sheet provided to you.
4. Use only Black Ball Point Pen to fill the OMR Sheet.
5. Please note that it is the candidate's responsibility to fill in the Roll Number carefully without any omission or discrepancy at the appropriate places in the OMR ANSWER SHEET. Any omission/discrepancy will render the OMR Answer Sheet liable for rejection.
6. Do not write anything else on the OMR Answer Sheet except the required information. Before you proceed to mark in the OMR Answer Sheet, please ensure that you have filled in the required particulars as per given instructions.
7. After you have completed filling in all your responses on the OMR Answer Sheet and the examination has concluded, you should hand over the OMR Answer Sheet to the Invigilator only. You are permitted to take the Test Booklet with you.
8. **Marking Scheme**  
THERE WILL BE NEGATIVE MARKING FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTIONS
  - (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, one-third of the marks assigned to the question will be deducted as penalty.
  - (ii) If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct and there will be same penalty as above to the question.
  - (iii) If a question is left blank. i.e., no answer is given by the candidate, there will be no penalty for that question.

**DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO**

Read the passage carefully and answer the questions 1 to 5 by choosing the correct answer from the given options. Each question carries 2 marks.

[5 x 2 = 10]

It was very hot in the court-room. Everybody was feeling sleepy. After a tiring morning, the clerks were anxious to get off to lunch. Even the judge seemed relieved when the last case came up before the court. A short middle-aged man with grey hair and small blue eyes was now standing before him. The man had a foolish expression on his face and he kept looking stupidly as if he was trying hard to understand what was going on. The man was accused of breaking into the house and stealing a cheap watch. The witness who was called did not give a very clear account of what had happened. He claimed to have seen the man outside the house one night, but on being questioned further, he confessed that he was not sure whether this was the man. The judge considered the matter for some time and said that as there was no proof, the man could not be found guilty of any crime. He said that the case was dismissed and then he rose to go. Meanwhile the accused looked very puzzled and said suddenly, "Excuse me, Sir, but do I have to give the watch back or not?"

1. When the last case came up, the judge felt relieved because -
  - (a) It was lunch time
  - (b) It had been a hot and tiring day
  - (c) He was called by his wife
  - (d) He had to go to visit his senior
2. A short middle-aged man was accused of-
  - (a) Punishing the court clerk
  - (b) Bribing the judge
  - (c) Breaking into the house
  - (d) Making loud noise in the court
3. The judge did not find the man guilty as -
  - (a) There was no real proof against him
  - (b) There was not anything written
  - (c) There nobody was to cry against him
  - (d) He was an innocent-looking man

4. The man facing the trial was guilty because -
  - (a) He had slapped the clerk
  - (b) He had a knife in his hand
  - (c) He was proved so
  - (d) He had the watch in his possession
5. The word 'accused' here means
  - (a) Forgave
  - (b) The person laughing unknowingly
  - (c) The person who is cunning
  - (d) The person charged with a criminal case

Answer the questions 6 to 10 by choosing the appropriate synonyms of the given words. Each question carries 2 marks.

[5 x 2 = 10]

6. Barbarian
  - (a) Unkind
  - (b) Impolite
  - (c) Unlikeliness
  - (d) Uncivilized
7. Bemoan
  - (a) Lament
  - (b) Soothe
  - (c) Denounce
  - (d) Loathe
8. Connoisseur
  - (a) Ignorant
  - (b) Lover of the art
  - (c) Stubborn
  - (d) Violent
9. Taint
  - (a) Soil
  - (b) Stain
  - (c) Corrupt
  - (d) Dirty
10. Impasse
  - (a) Stalemate
  - (b) Impossibility
  - (c) Difficulty
  - (d) Confrontation



In questions 11 to 15, sentences have been given in Active/Passive voice. From the given sentences choose the one that best expresses the sentences in Passive/Active voice. Each question carries 2 marks.

[5 x 2 = 10]

11. He did not give up the fight even though he was badly bruised.
  - (a) The fight had not been given up by him even though he was badly bruised.
  - (b) The fight had not given up by him even though he was badly bruised.
  - (c) The fight was not given up by him even though he was badly bruised.
  - (d) The fight was not being given up by him even though he was being badly bruised.
12. Why had you not deposited the school fees?
  - (a) Why had the school fees not been deposited by you?
  - (b) Why the school fees is not been deposited by you?
  - (c) Why you did not deposit the school fees?
  - (d) Why the school fees were not deposited by you?
13. I tried but could not answer the question.
  - (a) I tried to answer the question but couldn't.
  - (b) I tried but couldn't answer the questions.
  - (c) I tried but the questions could not be answered by me.
  - (d) I have been trying to answer the questions but could not.

14. Will the new local election system satisfy the people of the country?
  - (a) Will the people of the country be satisfied by the new local election system?
  - (b) Would the people of the country be satisfied by the new local election system?
  - (c) Will the people of the country been satisfied by the new local election system?
  - (d) How will the people of the country be satisfied by the new local election system?
15. They do not like him because he is always complaining.
  - (a) He was not liked by them because he is always complaining.
  - (b) He does not like him as he is always complaining.
  - (c) He is not being liked by them because he is always complaining.
  - (d) He is no liked by them because he is always complaining.

For questions 16 to 23, fill in the blanks with suitable word formation choosing the best option from the alternatives given below. Each question carries 1 mark.

[8 x 1 = 8]

Success is (16)\_\_\_\_\_ not only on (17)\_\_\_\_\_ and hard work but also on (18)\_\_\_\_\_ methods of study. Some students can (19)\_\_\_\_\_ more work in a (20)\_\_\_\_\_ time than others, and do it more (21)\_\_\_\_\_. A student must have ability in order to (22)\_\_\_\_\_ in higher learning, but ability (23)\_\_\_\_\_ is not enough.

16. \_\_\_\_\_
  - (a) depended
  - (b) depends
  - (c) dependable
  - (d) dependent

17. \_\_\_\_\_  
 (a) ability  
 (b) ableness  
 (c) ably  
 (d) able
18. \_\_\_\_\_  
 (a) effected  
 (b) effecting  
 (c) effective  
 (d) effectively
19. \_\_\_\_\_  
 (a) does  
 (b) do  
 (c) doing  
 (d) did
20. \_\_\_\_\_  
 (a) given  
 (b) gave  
 (c) give  
 (d) givingly
21. \_\_\_\_\_  
 (a) ease  
 (b) easiness  
 (c) eased  
 (d) easily
22. \_\_\_\_\_  
 (a) succeeded  
 (b) success  
 (c) succeed  
 (d) successful
23. \_\_\_\_\_  
 (a) alone  
 (b) lonely  
 (c) loneliness  
 (d) lone

For questions 24 to 28, choose the correct 'one word' which can be substituted for the given sentences. Each question carries 2 marks.

[5 x 2 = 10]

24. A remedy for all disease  
 (a) Medicine  
 (b) Medical  
 (c) Medica  
 (d) Panacea
25. More than enough in amount or capacity  
 (a) Derisory  
 (b) Ample  
 (c) Inadequate  
 (d) Liberal
26. One who is habitually good to others  
 (a) Helper  
 (b) Angel  
 (c) Altruist  
 (d) Humanitarian
27. A broad road bordered with trees  
 (a) Boulevard  
 (b) Boudoir  
 (c) Avenue  
 (d) Façade
28. A mistake of placing something in the wrong period of time  
 (a) Misdate  
 (b) Misplacement  
 (c) Anachronism  
 (d) Prolepsis

For questions 29 to 34, read the sentences and choose the appropriate meaning of the underlined idioms/phrases from the given options. Each question carries 2 marks.

[6 x 2 = 12]

29. The detective left no stone unturned to trace the culprit.  
 (a) Took no pains  
 (b) Did very irrelevant things  
 (c) Resorted to illegitimate practices  
 (d) Used all available means

30. The authorities took him to task for his negligence.  
 (a) Gave him additional work  
 (b) Suspended his assignment  
 (c) Reprimanded  
 (d) Forced him to resign
31. Their business is now on its last legs.  
 (a) About to perish  
 (b) About to fructify  
 (c) About to produce results  
 (d) About to take off
32. The old beggar ran amuck and began to throw stones at the passers-by.  
 (a) Became desperate  
 (b) Ran about wildly  
 (c) Became annoyed  
 (d) Felt disgusted
33. Dichen Doma stood by her husband in weal and woe.  
 (a) During the operation  
 (b) During illness  
 (c) By hook or crook  
 (d) In prosperity and adversity
34. Pema's second promotion in eleven months confirms she is at the zenith of her career.  
 (a) Be at the peak of  
 (b) Face difficulty boldly  
 (c) To die an immature death  
 (d) To be succumbed to one's flattery

Answer questions 35 to 104 by choosing the correct answer from the given options. Each question carries 2 marks.

[70 x 2 = 140]

35. The L.C.M. of the fractions  $\frac{5}{16}$ ,  $\frac{15}{20}$  and  $\frac{25}{36}$  is equal to -  
 (a)  $\frac{75}{720}$  (b)  $\frac{5}{720}$   
 (c)  $\frac{75}{4}$  (d)  $\frac{25}{4}$

36. The least number that is divisible by all the numbers from 1 to 10 (both inclusive) is -  
 (a) 1 (b) 10  
 (c) 504 (d) 2520
37. When 12 is divided by a positive integer  $n$ , the remainder is  $(n-3)$ . The possible value of  $n$  is -  
 (a) 5 (b) 7  
 (c) 8 (d) 11
38. If  $\frac{3+2\sqrt{3}}{3-\sqrt{3}} = a + b\sqrt{3}$ , then the value of  $\sqrt{a+b}$ , where  $a$  and  $b$  are rational numbers, is -  
 (a) 1 (b) 2  
 (c) 4 (d) 16
39. The sum of any two zeros of the polynomial  $f(x) = x^3 + ax^2 + bx + c$  is 0. The relation between  $a$ ,  $b$  and  $c$  is -  
 (a)  $b^2 = a + c$  (b)  $b^2 = ac$   
 (c)  $b = ac$  (d)  $c = ab$
40. If  $a - b$ ,  $a$  and  $a + b$  are the zeros of cubic polynomial  $f(x) = x^3 - 12x^2 + 39x + k$ , then the value of  $k$  is -  
 (a) -100 (b) 100  
 (c) -28 (d) 28
41. If one zero of polynomial  $f(x) = (a^2 + 16)x^2 + 13x + 8a$  is the reciprocal of the other, then the value of  $a$  is -  
 (a) -4 (b) 4  
 (c) -8 (d) 8



42. If the area of the triangle formed by the straight line  $8x + 5y = 40$  with both the co-ordinate axes is  $A$  sq. units, then  $A$  is -  
 (a) 10 (b) 20  
 (c) 35 (d) 40
43. The value or values of  $k$  for which the system of linear equations  $kx - y = 2$  and  $6x - 2y = 3$  has no solution is -  
 (a) 3 (b) 4  
 (c) 3 or 4 (d) -4
44. The sum of the numerator and the denominator of a fraction is 4 more than twice the numerator. If the numerator and the denominator each is increased by 3, then the new fraction is  $\frac{2}{3}$ . The fraction is -  
 (a)  $\frac{2}{3}$  (b)  $\frac{4}{9}$   
 (c)  $\frac{5}{9}$  (d)  $\frac{7}{9}$
45. A taxi car left 30 minutes later than the scheduled time and in order to reach its destination 280 km away on time, it had to increase its speed by 10 km/hr from its usual speed. Its usual speed per hour is -  
 (a) 60 km/hr (b) 70 km/hr  
 (c) 75 km/hr (d) 80 km/hr
46. The discriminants of two quadratic equations are equal and the equations have a common root 1. Their other roots -  
 (a) are also equal  
 (b) have their sum equalling 2  
 (c) are either equal or their sum is equal to 2  
 (d) are either equal or their sum is equal to 4.
47. 200 apples are equally distributed among a certain number of students. Had there been 10 more students, each student would have received one apple less. The number of students is -  
 (a) 25 (b) 40  
 (c) 50 (d) 75
48. If the ratio of the sum of  $m$  terms and the sum of  $n$  terms of an A.P. is  $m^2 : n^2$ , then the ratio of its  $m^{\text{th}}$  term and  $n^{\text{th}}$  term is -  
 (a)  $(2m + 1) : (2n + 1)$   
 (b)  $(2m + 1) : (2n - 1)$   
 (c)  $(2m - 1) : (2n + 1)$   
 (d)  $(2m - 1) : (2n - 1)$
49. The sum of  $n$  terms of an A.P. is  $S$ . If each term of this sum is increased by 20, then multiplied by 4 and then decreased by 20, then the sum of these new  $n$  terms is -  
 (a)  $4S + 60n$  (b)  $4S - 60n$   
 (c)  $4S + 80n$  (d)  $4S + 100n$
50. A three-digit number is such that the sum of its digits is 15 and the digits are in A.P. The number formed by reversing the digits is 594 greater than the original number. The original number is -  
 (a) 852 (b) 951  
 (c) 159 (d) 258
51.  $P$  and  $Q$  are points on the sides  $AB$  and  $AC$  respectively of the triangle  $ABC$  such that  $PQ$  is parallel to  $BC$ . If  $PQ$  divides  $ABC$  into two parts such that area of the trapezium  $PQBC$  is four times the area of the triangle  $APQ$ , then  $AP : PB$  is -  
 (a)  $(\sqrt{5} + 1) : 4$  (b)  $(\sqrt{5} - 1) : 4$   
 (c)  $1 : 2$  (d)  $1 : 4$

52.  $O$  is the point of intersection of the diagonals  $AC$  and  $BD$  of the trapezium  $ABCD$ .  $AB \parallel CD$  and  $2AB = 5CD$ . If the area of  $\triangle AOB$  is  $150 \text{ cm}^2$ , then the area of  $\triangle COD$  is -  
 (a)  $12 \text{ cm}^2$  (b)  $24 \text{ cm}^2$   
 (c)  $30 \text{ cm}^2$  (d)  $36 \text{ cm}^2$
53.  $ABCD$  is a rectangle such that  $\frac{AB}{BC} = \frac{4}{3}$ . The bisector of  $\angle ACB$  meets  $AB$  at the point  $E$ . If  $AB = 1$  unit, then  $AE$  is  
 (a)  $\frac{1}{8}$  units (b)  $\frac{3}{8}$  units  
 (c)  $\frac{5}{8}$  units (d)  $\frac{7}{8}$  units
54. If  $O$  is an interior point of a rectangle  $ABCD$  such that  $OA = 4 \text{ cm}$ ,  $OC = \sqrt{11} \text{ cm}$  and  $OD = 2 \text{ cm}$ . Then  $OB$  is equal to -  
 (a)  $2 \text{ cm}$  (b)  $3 \text{ cm}$   
 (c)  $4 \text{ cm}$  (d)  $4.5 \text{ cm}$
55. If  $\tan \alpha$ ,  $\tan \beta$  are roots of the equation  $x^2 - px + q = 0$  and  $\cot \alpha$ ,  $\cot \beta$  are the roots of the equation  $x^2 - rx + s = 0$ , then  $pq$  is equal to -  
 (a)  $rs$  (b)  $\frac{r^2}{s}$   
 (c)  $\frac{1}{r^2s}$  (d)  $\frac{r}{s^2}$
56. If  $\cot \theta + \operatorname{cosec} \theta = p$ , then  $\cos \theta$  is equal to -  
 (a)  $\frac{p^2}{p^2+1}$  (b)  $\frac{p^2+1}{p^2-1}$   
 (c)  $\frac{p^2-1}{p^2+1}$  (d)  $1 + \frac{1}{p^2}$
57. The value of  $\sin^2 2^\circ + \sin^2 4^\circ + \sin^2 6^\circ + \dots + \sin^2 90^\circ$  is equal to -  
 (a) 23 (b) 44  
 (c) 45 (d) 49
58.  $ABCD$  is a parallelogram with vertices  $A(x_1, y_1)$ ,  $B(x_2, y_2)$  and  $C(x_3, y_3)$ . The co-ordinates of the fourth vertex  $D$  are -  
 (a)  $(x_1 + x_2 + x_3, y_1 + y_2 + y_3)$   
 (b)  $(-x_1 + x_2 + x_3, -y_1 + y_2 + y_3)$   
 (c)  $(x_1 + x_2 - x_3, y_1 + y_2 - y_3)$   
 (d)  $(x_1 - x_2 + x_3, y_1 - y_2 + y_3)$
59. The vertices of a quadrilateral  $ABCD$  are  $A(2, 0)$ ,  $B(0, 4)$ ,  $C(-6, 0)$  and  $D(0, -8)$ . If  $P$ ,  $Q$ ,  $R$  and  $S$  are the mid points of the sides  $AB$ ,  $BC$ ,  $CD$  and  $AD$  respectively, then the point of intersection of the diagonals of the quadrilateral  $PQRS$  is -  
 (a)  $(1, 1)$  (b)  $(-1, -1)$   
 (c)  $(2, 3)$  (d)  $(2, -3)$
60. The vertices of a triangle  $ABC$  are  $A(x_1, y_1)$ ,  $B(x_2, y_2)$  and  $C(x_3, y_3)$ . If  $D$ ,  $E$  and  $F$  are the mid points of the sides  $BC$ ,  $CA$  and  $AB$  respectively, then the centroid of the triangle  $DEF$  is  
 (a)  $\left(\frac{x_1+x_2+x_3}{3}, \frac{y_1+y_2+y_3}{3}\right)$   
 (b)  $\left(\frac{x_1+x_2+x_3}{6}, \frac{y_1+y_2+y_3}{6}\right)$   
 (c)  $\left(\frac{x_1+x_2+x_3}{9}, \frac{y_1+y_2+y_3}{9}\right)$   
 (d)  $(x_1 + x_2 + x_3, y_1 + y_2 + y_3)$
61. From the top and bottom of a building  $10 \text{ m}$  high, the angles of elevation of the top of a tower are  $45^\circ$  and  $60^\circ$  respectively. The height of the tower is  
 (a)  $\frac{5\sqrt{3}}{2}(\sqrt{3} + 1) \text{ m}$  (b)  $\frac{5}{2}(\sqrt{3} + 1) \text{ m}$   
 (c)  $5\sqrt{3}(\sqrt{3} + 1) \text{ m}$  (d)  $\frac{5\sqrt{3}}{2}(\sqrt{3} - 1) \text{ m}$
62. A man on the top of a light house observes that the boat coming towards him takes  $10$  minutes for the angle of depression to change from  $30^\circ$  to  $60^\circ$ . The amount of time the boat will take from this point ( $60^\circ$  angle of depression) to reach the light house is equal to -  
 (a)  $5$  minutes (b)  $5\sqrt{3}$  minutes  
 (c)  $10$  minutes (d)  $\frac{10}{\sqrt{3}}$  minutes

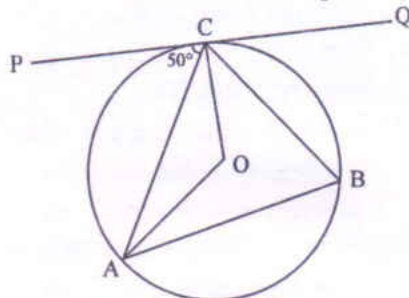


63. From the top of a cliff 15 m high, the angle of elevation of the top of a tower is equal to the angle of depression of the foot of the tower. The height of the tower is  
 (a) 25 m (b) 30 m  
 (c) 40 m (d) 45 m

64. A right-angled triangle with its sides of lengths 6 cm, 8 cm and 10 cm, circumscribes a circle whose radius is  $r$ . Then  $r$  is equal to -  
 (a) 2 cm (b) 3 cm  
 (c) 5 cm (d) 6 cm

65. Tangents  $TP$  and  $TQ$  are drawn from an external point  $T$  to the circle with centre  $O$ . If tangents  $TP$  and  $TQ$  touch the circle in points  $P$  and  $Q$  respectively, then  $\angle PTQ$  is equal to -  
 (a)  $90^\circ + \angle OPQ$  (b)  $180^\circ - \angle OPQ$   
 (c)  $\angle OPQ$  (d)  $2\angle OPQ$

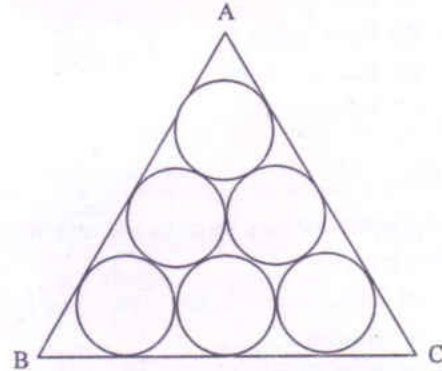
66. In the given figure  $PQ$  is a tangent to the circle with centre  $O$  at the point  $C$ .



If  $\angle ACP = 50^\circ$ , then  $\angle OCA$  is

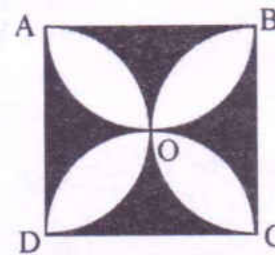
- (a)  $20^\circ$  (b)  $30^\circ$   
 (c)  $40^\circ$  (d)  $50^\circ$
67. Two circles touch each other externally. The sum of their areas is  $149\pi \text{ cm}^2$ . If the distance between their centres is 17 cm, then their radii are -  
 (a) 9 cm, 8 cm (b) 11 cm, 6 cm  
 (c) 12 cm, 5 cm (d) 10 cm, 7 cm

68. In the equilateral triangle  $ABC$ , six circles each of radius 3 cm are drawn such that they touch each other and also touch the sides of the triangle.



The height of the triangle is equal to -

- (a)  $6(2 + \sqrt{3}) \text{ cm}$   
 (b)  $3(2\sqrt{3} + 3) \text{ cm}$   
 (c)  $6\sqrt{3}(2 + \sqrt{3}) \text{ cm}$   
 (d)  $3\sqrt{3}(2\sqrt{3} + 3) \text{ cm}$
69.  $ABCD$  is a square of side 10 cm. Semicircles are drawn with each side of the square as diameter, as shown in the given figure.



Net area of all the four shaded regions is -

- (a)  $25(4 - \pi) \text{ cm}^2$  (b)  $50(2 - \pi) \text{ cm}^2$   
 (c)  $50(4 - \pi) \text{ cm}^2$  (d)  $25(8 - \pi) \text{ cm}^2$
70. If we want a virtual and erect image of an object through a convex lens then we have to place the object at -  
 (a) At focus  $F_1$   
 (b) Between focus  $F_1$  and  $2F_1$   
 (c) At  $2F_1$   
 (d) Between focus  $F_1$  and optical center  $O$



71. In new Cartesian sign convention, all distances parallel to the principal axis are measured from the \_\_\_\_\_ of spherical mirror.
- Pole
  - Focal point
  - Radius of curvature
  - Infinite
72. When a beam of light passes through a colloidal solution, its path become visible due to -
- Reflection of light by the particles of solution
  - Scattering of light by the particles of solution
  - Refraction of light by the particles of solution
  - Abortion of light by the particles of solution
73. The pupil of an eye acts like a variable aperture whose size can be varied with the help of \_\_\_\_\_.
- Optic nerves
  - Retina
  - Iris
  - Cornea
74. Myopia can be corrected by using a \_\_\_\_\_ lens of suitable power. It is caused by the \_\_\_\_\_ of the eye lens.
- Convex, excessive curvature
  - Concave, scant curvature
  - Convex, scant curvature
  - Concave, excessive curvature
75. Number of electrons constituting 8 (eight) coulombs of charge are -
- $5 \times 10^{19}$
  - $5 \times 10^{18}$
  - $50 \times 10^{19}$
  - $50 \times 10^{18}$
76. If three resistances of different values are connected in parallel then the value of effective resistance will be -
- Smaller than the lowest value of resistance
  - Same as the lowest value of resistance
  - Same as the largest value of resistance
  - Larger than the largest value of resistance
77. The resistance of a conductor does not depend on which of the following factors?
- Length of conductor
  - Cross section of conductor
  - Nature of conductor
  - Applied potential
78. Which of the following statements is correct?
- DC power can be transmitted over longer distances without much loss of energy compared to AC power
  - AC power can be transmitted over longer distances without much loss of energy compared to DC power.
  - Domestic AC Supply has a frequency of 75 Hz
  - Domestic DC Supply has a frequency of 50 Hz
79. What plays the role of a commutator in an electric motor?
- Axel
  - Split rings
  - Brush
  - Magnet

80. Earth wire provides a -  
 (a) High resistance conducting path for the current  
 (b) Low resistance conducting path for the current  
 (c) High resistance insulating path for the current  
 (d) Low resistance insulating path for the current
81. Which energy is considered environment friendly?  
 (a) Energy generated by hydro-power  
 (b) Energy generated by nuclear-power  
 (c) Energy generated by wind-power  
 (d) Energy generated by thermal-power
82. The \_\_\_\_\_ bomb is based on thermonuclear reaction.  
 (a) Atom  
 (b) Petrol  
 (c) Kerosene  
 (d) Hydrogen
83. The following reaction can be categorised as a \_\_\_\_\_.  

$$Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$$
  
 (a) Displacement reaction  
 (b) Decomposition reaction  
 (c) Double displacement reaction  
 (d) Combination reaction
84. Which of the following reactions is correctly balanced?  
 (a)  $2HNO_3 + Ca(OH)_2 \rightarrow 2Ca(NO_3)_2 + H_2O$   
 (b)  $HNO_3 + 2Ca(OH)_2 \rightarrow 2Ca(NO_3)_2 + H_2O$   
 (c)  $2HNO_3 + Ca(OH)_2 \rightarrow Ca(NO_3)_2 + 2H_2O$   
 (d)  $HNO_3 + 2Ca(OH)_2 \rightarrow 2Ca(NO_3)_2 + H_2O$
85. Hydroxide of which metal is soluble in aqueous NaOH?  
 (a) Magnesium  
 (b) Copper  
 (c) Silver  
 (d) Lead
86. Which gas is evolved when dilute sulphuric acid is reacted with iron sulphide?  
 (a) Sulphur dioxide  
 (b) Hydrogen sulphide  
 (c) Sulphur trioxide  
 (d) Vapours of sulphuric acid
87. Identify the organic weak acid from the following:  
 (a) Hydrobromic acid  
 (b) Nitric acid  
 (c) Formic acid  
 (d) Sulphuric acid
88. Which metal is found in free state in nature?  
 (a) Copper  
 (b) Zinc  
 (c) Iron  
 (d) Gold
89. The reaction of dilute hydrochloric acid with a reactive metal produces \_\_\_\_\_ gas.  
 (a) Oxygen  
 (b) Hydrogen  
 (c) Nitrogen  
 (d) Hydrochloric acid gas
90. This element reacts with oxygen to give a water-soluble compound with a high melting-point. Identify the element.  
 (a) Carbon  
 (b) Silicon  
 (c) Calcium  
 (d) Iron



91. While cooking, if the bottom of the vessel gets blackened on the outside, it means that the -  
(a) fuel is wet  
(b) fuel is not burning completely  
(c) fuel is burning completely  
(d) food is not cooked completely
92. The number of covalent bonds in ethane is -  
(a) 6  
(b) 7  
(c) 8  
(d) 9
93. Which is of the following is not correct with reference to the elements of group 18?  
(a) Valency is variable  
(b) Maximum ionization potential  
(c) Zero electron affinity  
(d) Complete octet
94. The contraction and expansion movement of the walls of the food pipe is called:  
(a) translocation  
(b) transpiration  
(c) peristaltic movement  
(d) digestion
95. The respiratory pigment in human beings is:  
(a) carotene  
(b) chlorophyll  
(c) haemoglobin  
(d) mitochondria
96. Which plant hormone promotes cell division?  
(a) Auxin  
(b) Gibberellin  
(c) Cytokinin  
(d) Absciscic acid
97. Any change in the environment to which an organism responds is called \_\_\_\_\_.  
(a) stimulus  
(b) coordination  
(c) response  
(d) hormone
98. A feature of reproduction that is common to Amoeba, Yeast and Spirogyra is that -  
(a) they reproduce asexually  
(b) they are all unicellular  
(c) they reproduce only sexually  
(d) they are all multicellular
99. The period of pregnancy is also known as the \_\_\_\_\_.  
(a) gestation period  
(b) incubation period  
(c) ovulation  
(d) menstruation period
100. The theory of evolution of species by natural selection was postulated by:  
(a) Mendel  
(b) Darwin  
(c) Lamarck  
(d) Weismann
101. A zygote which has an X-chromosome inherited from the father will develop into a \_\_\_\_\_.  
(a) girl  
(b) boy  
(c) either boy or girl  
(d) X-chromosome does not influence the sex of a child.

102. Excessive exposure of humans to UV-rays results in \_\_\_\_\_.

- (i) damage to immune system
- (ii) damage to lungs
- (iii) skin cancer
- (iv) peptic ulcer

Select the correct option:

- (a) (i) and (ii)
- (b) (ii) and (iv)
- (c) (i) and (iii)
- (d) (iii) and (iv)

103. Which gas is formed, when fossil fuels are burnt in insufficient air (oxygen)?

- (a) Carbon dioxide
- (b) Carbon monoxide
- (c) Both  $CO_2$  and  $CO$
- (d) Neither  $CO_2$  nor  $CO$

104. Posture and balance of the body is controlled by \_\_\_\_\_.

- (a) Pons
- (b) Medulla oblongata
- (c) Cerebellum
- (d) Cerebrum

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