SAMPLE QUESTIONS FOR
Eureka Talent Search Examination, Plan - 11 : 2024
(ETSE : PLAN - 11 : 2024)

TIME : 2 Hr   **F.M : 480**

SECTION - A : MENTAL ABILITY STUDIES

1. When figure 1 is folded to form a cube, how many dots would lie opposite to the face bearing five dots?

   Fig. 1

   A. 1   B. 2   C. 3   D. 4
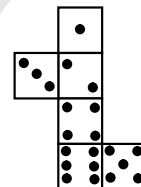
2. A sheet of paper shown in Fig. (X) has to be folded to form a box. Choose a box from the options that is similar to the box formed.
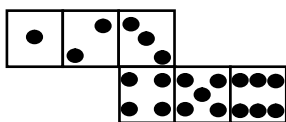

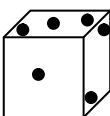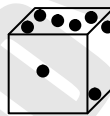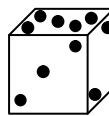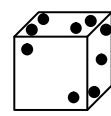   Fig. (X)   P   Q   R   S

   A. P only   B. Q only   C. R only   D. S only

3. If **LOCOMOTIVE** is coded as **MPDPNPUJWF** and **DIFFICULT** is coded as **EJGGJDVMU** then what will be the code for **LUCKNOW**?

   A. MVDLOPX   B. MUDLOPY   C. MVDLOPY   D. MVDKOPX

4. Given that
   - Ava is the mother of Ben
   - Calvin is the son of Ava
   - David is the brother of Emma
   - Emma is the daughter of Ben

   Who is the grandmother of David ?

   A. Ava   B. Ben   C. Calvin   D. David

5. If Prateek stands on his head with his face towards south, to which direction will his left hand point?

   A. East   B. West   C. North   D. South

6. Complete the series.

   3, 10, 20, 33, 49, 68, ?

   A. 75   B. 85   C. 90   D. 91

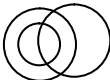7. If the day before yesterday was Sunday, what day will it be three days after the day after tomorrow?

    A. Sunday   B. Monday   C. Wednesday   D. Saturday

8. Which one of the given responses would be a meaningful order of the following words?

    1. Grapes   2. Wineyard   3. Wine   4. Brewing   5. Distillation

    A. 2, 1 ,5, 4, 3   B. 3, 5, 4, 2, 1

    C. 2, 1, 4, 3, 5   D. 2, 1, 4, 5, 3

9. Which one of the following figures represents the relationship among *Males, Fathers, Advocates?*

10. A piece of circular paper is folded and cut as shown below. How will it appear when opened? Select your response from answer figures.

    Question Figure :

Direction for 11-12: In the following question there is two statements which is followed by two conclusions. Choose the conclusion which logically follow from the given statements, disregarding commonly known facts.

11. **Statement:** Some apricot are grapes.

    All the grapes are apples.

    Conclusions: I. All the apples are grapes

                   II. Some apricot are apples

    A. Only conclusion I follows.   B. Only conclusion II follows.

    C. Either I or II follows.   D. Neither I nor II follows.

12. **Statements:** All the chair are doors.
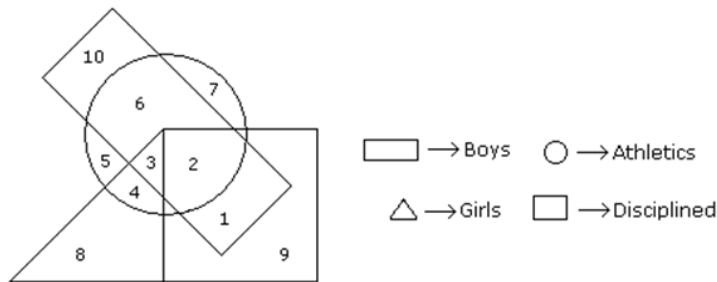
    No door is a table.

    Conclusions : I. Some chair are table.

                 II. No table is a door.

    A. Only conclusion I follows.   B. Only conclusion II follows.

    C. Either I or II follows.   D. Neither I nor II follows.

13. In the following diagram the boys who are athletic and are disciplined are indicated by which number?

A. 1   B. 2   C. 10   D. 6

Direction for 14 - 17: Paul, Quin, Rafael, Samira, Tanvi, Urmi, Victor and Warner are sitting round the circle and are facing the centre:

1. Paul is second to the right of Tanvi who is the neighbour of Rafael and Victor.
2. Samira is not the neighbour of Paul.
3. Victor is the neighbour of Urmi.
4. Quin is not between Samira and Warner. Warner is not between Urmi and Samira.

14. Which two of the following are not neighbours?
    A. Rafael & Victor   B. Urmi & Victor   C. Rafael & Paul   D. Quin & Warner

15. Which one is immediate right to the Victor?
    A. Paul   B. Urmi   C. Rafael   D. Tanvi

16. Which of the following is correct?
    A. Paul is to the immediate right of Quin   B. Rafael is between Urmi and Victor
    C. Quin is to the immediate left of Warner   D. Urmi is between Warner and Samira

17. What is the position of Samira?
    A. Between Urmi and Victor   B. Second to the right of Paul
    C. To the immediate right of Warner   D. Data inadequate

18. Four forms of a dice are shown below. In this dice which word will be on the surface opposite to the word D?

A. E   B. A   C. B   D. C

Direction for 19-20: In the following question there is three statements which is followed by three or four conclusions. Choose the conclusion which logically follow from the given statements, disregarding commonly known facts.

19. **Statements** : All the lions are king.
    All the kings are boxers.
    Some warriors are boxers.
    Conclusions : 1. Some boxer are lions.
    2. Some warriors are king.
    3. All the kings are lions.
    A. Only 1 and 2   B. Only 1   C. Only 2   D. Only 1 and 3

20. **Statements:** Some poems are prose.
    Some prose are poetry.
    All the poetry are story.
    Conclusions :
    1. Some poetry are prose.
    2. Some story are poems.
    3. All the poems are story.
    4. Some story are prose.
    A. Only 1 and 2   B. Only 1 and 4   c. Only 1 and 3   D. Only 2 and 4

21. How many times in a day, are the hands of a clock in straight line but opposite in direction?
    A. 20   B. 22   C. 24   D. 48

22. Fill in the blank.
    3, 10, 20, 33, 49, 68, _____
    A. 75   B. 85   C. 90   D. 91

23. Reaching a place of appointment on Friday, I found that I was two days earlier than the scheduled day. If I had reached on the following Wednesday, how many days late would I have been?
    A. One day   B. Two days   C. Three days   D. Four days

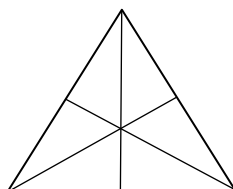24. If **RED** is coded as **6720**, then how **GREEN** would be coded?
    A. 9207716   B.1677199   C.1677209   D. 16717209

25. How many triangles are there in the following figure?

    A. 16   B. 13   C. 9   D. 7

Directions (26–27) : Kiran walks 20 m north, he turns right and walks 30 m, then he turns right and walks 35 m, then he turns left and walks 15 m, then he turns left and walks 15 m. he again turns left and walks 15 m.

26. How far Kiran is from his startingpoint?
    A. 25 m   B.15 m   C.45 m   D. 30 m

27. Which direction is Kiran facingnow?
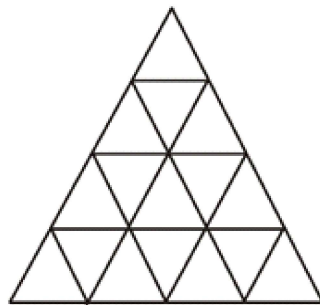   A. East   B. West   C. North   D. South

28. How many triangles are there in the following figure?

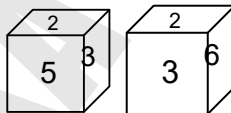   A.29   B. 27   C. 23   D. 30

29. From the following two different appearances of die find out the number which is opposite to '5'.
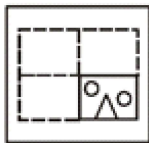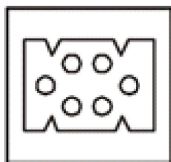

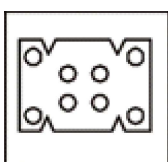   A. 2   B. 3   C. 4   D. 6

30. A piece of paper is folded and punched as shown below. From the given responses, indicate how it will appear when opened.
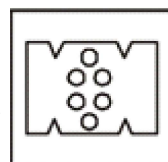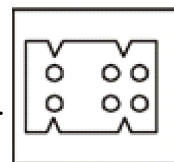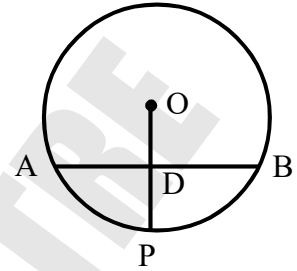

    A.   B.   C.   D.
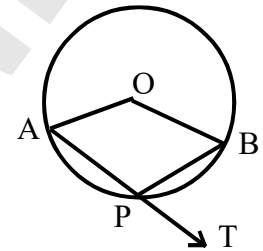
SECTION - B : MATHEMATICS

31. In a circle $\overline{OP} \perp \overline{AB}$, AB = 16 cm, OD = 6 cm then DP = _____ ?

    A. 8   B. 4

    C. 5   D. 6

32. In following figure $m\widehat{APB} = 80°$ then $m\angle BPT = $ _____ ?

    A. 160°   B. 40°

    C. 50°   D. 60°

33. In following figure $\overline{AB} \parallel \overline{CD}$, $m\angle BAD = 80°$ then $m\angle EBC = $ _____ ?

    A. 150°   B. 75°

    C. 100°   D. 120°
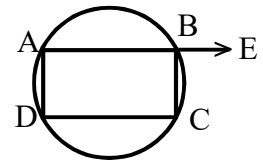
34. In given figure $m\widehat{AC}$ & $m\widehat{BD}$ are 80° & 30° respectively then $m\angle P = $ _____ ?

    A. 75°   B. 25°

    C. 30°   D. 60°
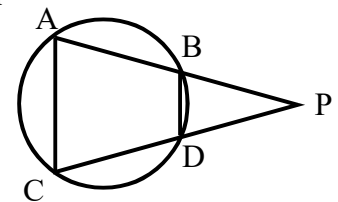
35. ABCD is the cyclic quadrilateral X & Y are two points on circcle $m\widehat{BXA} = 55°$, $m\widehat{AYD} = 75°$ then $m\angle BCD = $ _____ ?

    A. 60°   B. 65°

    C. 70°   D. 75°
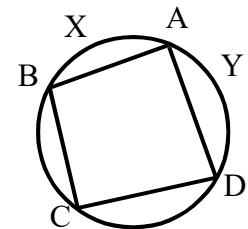
36. In given figure PQ = 8 cm, QR = 10 cm, what is the length of tangent to the circle from point P.

    A. 8   B. 10

    C. 12   D. 9
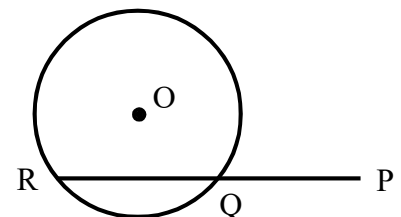
37. In given figure $\overline{XY}$ in the tangent to the circle ABC at point A, $\overline{BC} \parallel \overline{XY}$ and $m\angle BAX = 60°$ then $m\angle CAB = $?

    A. 30°   B. 45°

    C. 60°   D. 75°
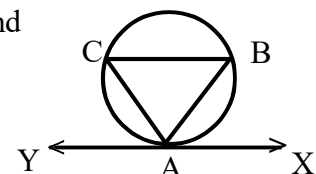
38. In given figure PBC tangent to circle $\overrightarrow{AB}$, $\overrightarrow{AC}$ & $\overrightarrow{QR}$ are point at B, C & P respectively. If QB = 4 cm & RC = 5 cm then QR = ____?

A. 10   B. 11

C. 8   D. 9
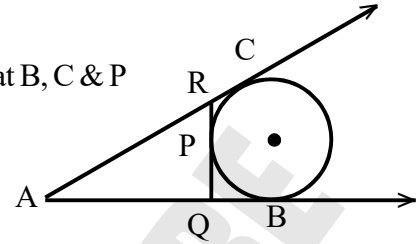
39. In given figure XYZ, X is the point at tangent to circle $\overrightarrow{PQ}$ if $m\,\widehat{XZY} = 220°$ then $m\angle PXY =$ ____?

A. 220°   B. 110°

C. 100°   D. 330°
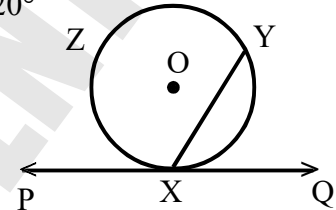
40. What is the value of $\sin 120° + \tan 150°.\cos 135° =$ ____ ?

A. $\dfrac{2\sqrt{3}}{3+\sqrt{2}}$ B. $\dfrac{2\sqrt{3}}{3-\sqrt{2}}$ C. $\dfrac{3-\sqrt{2}}{2\sqrt{3}}$ D. $\dfrac{3+\sqrt{2}}{2\sqrt{3}}$

41. What is value of $\tan^2 23° - \cosec^2 67°$?

A. 1   B. 0   C. -1 D. None of these

42. If $\sin A = \cos B$ then $(A+B) = ?$

A. 90°   B. 180°   C. 45°   D. 60°

43. If the circumference of a circle is equal to the perimeter of a square then what will be the ratio of their area?

A. 11 : 14   B. 14 : 22   C. 11 : 7   D. 7 : 11

44. If the radius of a semicircle is 14cm the, what will be its circumference?

A. 44 cm   B. 58 cm   C. 72 cm   D. 64 cm

45. In a cone the ratio of radius and latent height is 4 : 5 and its volume is 17248 cubic meter then what will be its radius ?

A. 21   B. 28   C. 35   D. 7

46. If the two roots of the equation $9x^2 + 5x + (C+9)$ are raciprocol to each other then, what will be the value of 'C'?

A. 9   B. 1   C. 0   D. -9

47. $S_n = \dfrac{n(n+1)}{2}$ then $t_{10} =$ _____ ?

    A. 10   B. 20   C. 15   D. 30

48. $t_{20} = -33$, $t_{16} = -25$ then d = ___ ?

    A. 2   B. 3   C. – 2   D. – 1

49. If a dice is thrown twice then what will be the probability of sum < 3 ?

    A. 0   B. $\dfrac{1}{36}$ C. $\dfrac{2}{36}$ D. $\dfrac{3}{36}$

50. In given figure $\triangle PQR$, $\overleftrightarrow{XY} \parallel \overrightarrow{PQ}$, $PM : PR = 2 : 5$ and QN = 4 cm then NR = _____ ?

    A. 5   B. 10

    C. 8   D. 6
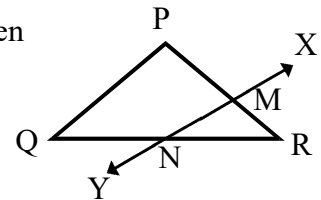
51. In right angled triangle PQR, $m\angle Q = 90°$ and $\overline{QS} \perp \overline{PR}$, PS = 8 cm, SR = 2 cm, then PQ = _____ ?

    A. 10 cm   B. 6 cm

    C. 16 cm   D. $\sqrt{80}$ cm
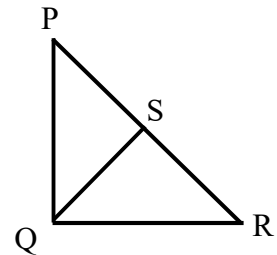
52. In given figure $\overline{XY} \parallel \overline{BC}$ and AX : XB = 2 : 3 then find the ratio of triangle $\triangle AXY$ and trapezium XYCB ?

    A. $\dfrac{4}{25}$ B. $\dfrac{4}{21}$

    C. $\dfrac{4}{9}$ D. $\dfrac{2}{3}$
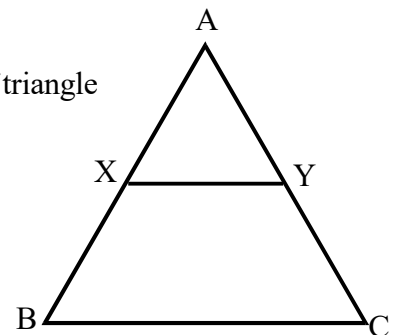
53. In given figure a = 3cm, b = 2cm, c = 5cm and $\overline{CM}$ in the bisector of angle $\angle C$ then AM = _____ ?

    A. 1 cm   B. 2 cm

    C. 3 cm   D. 4 cm
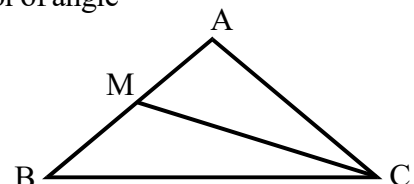
54. If $\sin(A+B) = \dfrac{\sqrt{3}}{2}$ & $\sin(A-B) = \dfrac{1}{2}$ then A = ?

    A. 45°   B. 30°   C. 60°   D. 120°

55. $\dfrac{\cos(A-B) - \cos(A+B)}{\sin(A+B) - \sin(A-B)} = $?

    A. $\tan A$ B. $\tan B$ C. $\cot A$ D. $\cot B$

56. If the ratio of two cone having same height is 2 : 3 then what will be the ratio of its volume?

    A. 9 : 4   B. 4 : 9   C. 2 : 3   D. 3 : 2

57. If a sphere having π radius melted & fomed a cone then what will be its base of π height cone?

    A. 2π B. 3π C. π D. 4π

58. If the folume of a cylinder is 950 cubic cm. & area of curve surface is 50 sqcm then find the height of the cyclinder?

    A. 19   B. 38   C. 57   D. 76

59. In given figure $\overline{DE} \parallel \overline{EC}$ & AD : DB = 2 : 3 then what is the ratio of the area of triangle $\triangle ADE$ & $\triangle ABC$?

    A. 2 : 3   B. 4 : 9

    C. 2 : 5   D. 4 : 25
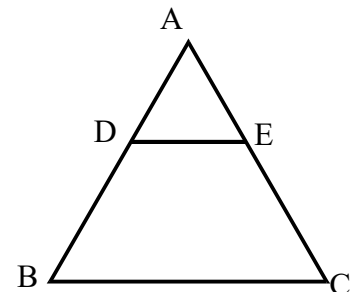
60. In given figure $\overline{DE} \parallel \overline{BC}$, AD : BD = 3 : 4, AC = 14 cm then AE = _____ ?

    A. 6 cm   B. 7 cm

    C. $\dfrac{21}{2}$ cm   D. $\dfrac{56}{3}$ cm
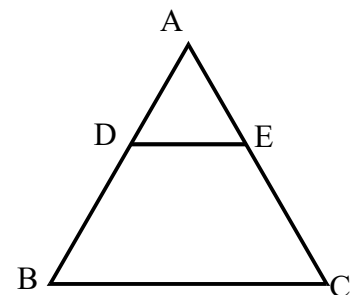
SECTION - C : GENERAL SCIENCE

I. BIOLOGY & ECOLOGY

61. How many autosomes are found in human cell?
    A. 46   B. 44   C. 2   D. 23

62. Mendel had choosen how many characters for his experiment on Pea Plant?
    A. 1   B. 2   C. 7   D. 14

63. Which rule is proved in experiment of Mendel Dihybrid Cross?
    A. Principle of Unit Character   B. Law of dominance
    C. Law of segregation   D. Law of Independent Assortment

64. What is the main component of biogas Plant?
    A. Carbon dioxide   B. Methane   C. Hydrogen   D. Nitrogen

65. What is the main component of Natural gas?
    A. Methane   B. Oxygen   C. Carbon dioxide   D. Hydrogen

66. In 1935 Tansley Presented which of the following word?
    A. Environment   B. Ecology   C. Ecological   D. Ecocyst

67. Who has presented Number Pyramid in 1927?
    A. R.L. Lindeman   B. Charles   C. A.G. Tansley   D. Darwin

68. Who has implemented ten Percent Law?
    A. R.L.Lindeman   B. A.G. Tansley   C. Cherles Altan   D. Fan Nil

69. Which year biodiversity law was implemented?
    A. 1927   B. 1988   C. 1972   D. 2004

70. Which strike Sundarlal Bahuguna had strated?
    A. Narmada Banchau   B. Apiko
    C. Ganga Banchau   D. Chipiko

71. Which are is the best test for Covid-19?
    A. RTPCR   B. ELISA   C. Antigen Test   D. Rapid Diagonstic Test

72. How many spinal nerve are found in human?

    A. 10   B. 12   C. 31   D. 16

73. Reflex action is controlled by which one of the following.

    A. Brain   B. Spinal Chord

    C. Both Brain & Spinal Chord   D. Cerebellum

74. Which hormone secrets from Alpha (α) cell of Pancrease.

    A. Insulin   B. Somatostalin   C. Glucagon   D. Adrinalin

75. In which phase of Mitosis Chromosomes are in equitorial Plane.

    A Prophase   B. Metaphase   C. Anaphase   D. Telophase

II. PHYSICS

76. In a cancave lense Focal length is 25cm then how much power of lense is added to get power +2D.

    A. – 6 D   B. – 4 D   C. + 6 D   D. + 4 D

77. Which one is the unit of – 2.5 D Power?

    A. 4 m   B. 40 m   C. 40 cm   D. – 0.4 m

78. Which are of the following is the scattering of light?

    A. Reflection   B. Refraction

    C. Direction of change of light   D. Dispersion

79. How Ameter is connected in electric circuit.

    A. Parallel   B. Series   C. Series or Parallel   D. Non of the above

80. Which light is greatest for refraction of light through prism.

    A. Red   B. Violet   C. Yellow   D. Blue

81. In given figure what the sum total resistance between A & B.

    A. 4Ω B. 6Ω

    C. 16Ω D. 8Ω
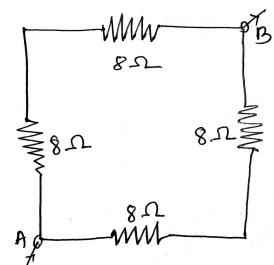
82. Joule $\times$ Ohm^{-1} $\times$ Ampere^{-1} is the unit of which of the following.

    A. Power   B. Energy   C. Current   D. Charge

83. In given circuit reading of Ameter is 5 A then find value of X?

    A. 2Ω B. 3Ω

    C. 4Ω D. 0Ω
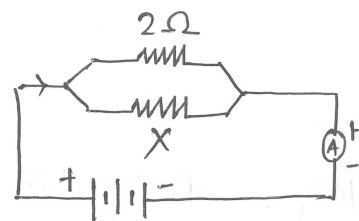
84. Which one is the mirror Fermula & Magnification?

    A. $m = \dfrac{h_1}{h} = \dfrac{v}{u}$ B. $m = \dfrac{-h_1}{h} = \dfrac{v}{u}$ C. $m = \dfrac{h_1}{h_1} = \dfrac{v}{u}$ D. $m = \dfrac{h_1}{h} = \dfrac{-v}{u}$

85. If an object is placed in 15cm distance of 10cm focal tength convex lense then what will be its magnification.

    A. +2   B. – 0.2   C. – 2.5   D. – 2

86. The colour of sky seems blue due to which of the following -

    A. Scattering of light   B. Refraction   C. Reflection   D. Dispersion.

87. Multiplication of a lense power and focal length is _____.

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

88. How many times light refracted in a Prism.

    A. 1   B. 2   C. 3   D. 4

89. Name the scientist who discovered first human source electric current.

    A. Oersted   B. Tesla   C. Daniel   D. Alessandro Volta

90. Which one is used for measure little amount of current.

    A. Ameter   B. Voltmenter   C. Animomenter   D. Galvanometer

III. CHEMISTRY

91. Which are of the following decomposed in sunlight?

    A. NaCl   B. AgBr   C. $CaCO_3$ D. $Pb(NO_3)_2$

92. Which one of the following is the another form of marbal?

    A. $Ca(OH)_2$ B. $CaCO_3$ C. CaO   D. $Ca(NO_3)_2$

93. Which one of the following is the symbol of hydronium ion?

    A. NO_3 B. NH_4^+ C. H_3O^+ D. HCO_3^-

94. Which is the correct one of the reactivity series?

    A. $Fe > Zn > Al > Mg$ B. $Mg > Al > Zn > Fe$

    C. $Mg > Al > Fe > Zn$ D. $Mg > Fe > Zn > Al$

95. How many elements are there in Lanthanide series?

    A. 14   B. 15   C. 18   D. 32

96. Which of the following compound has double bond?

    A. CH_4 B. C_2H_6 C. C_2H_4 D. C_2H_2

97. What is the mass of Propane?

    A. 42 u   B. 36 u   C. 46 u   D. 44 u

98. Roasting is used for which one of the following Ore -

    A. Al_2O_3 B. NaCl   C. $ZnCO_3$ D. ZnS

99. In morden Periodic table in which group noble elements are found?

    A. 16   B. 1   C. 18   D. 7

100. In Morden Periodic table which period has least number of element ?

    A. I   B. II   C. VII   D. VI

101. How many Covalent bond are there in Cyclopentane.

    A. 15   B. 10   C. 12   D. 14

102. How many Carbon are found in Fullerin?
    A. 6   B. 60   C. 16   D. 160

103. How many least electrons are required for formation of a covalent bond?
    A. 2   B. 4   C. 6   D. 8

104. Which metal exert H_2 gas after react with both acid & base.
    A. Cu   B. K   C. Zn   D. Fe

105. Which one of the following is found is liquid state.
    A. Bromine   B. Chlorine   C. Iodine   D. Phosphorous

SECTION - D : ENGLISH

106. It is he who _____ torn my book.
    A. has   B. have   C. were   D. are

107. The dead _____ respected everywhere.
    A. is   B. are   C. was   D. were

108. I prefer tea _____ coffee.
    A. than   B. to   C. of   D. in

109. He is senior _____ me.
    A. to   B. than   C. of   D. in

110. I can't <u>tolerate</u> his insult. (Find the appropriate phrasal verb)
    A. put up   B. put up with   C. put off   D. put in

111. He <u>distributed</u> the sweets among the children. (Find the appropriate phrasal verb)
    A. give in   B. give out   C. give away   D. give off

112. He died _____ an accident.
    A. in   B. of   C. from   D. to

113. English _____ all over the world.
    A. was spoken   B. is spoken   C. had spoken   D. has spoken

114.   The letter _____ yesterday.
   A. is posted   B. was posted   C. posted   D. had posted

115.   A car _____ next year.
   A. will buy   B. will be bought   C. will have bought   D. will buy

116.   Why did he scold me ?
   A. Why was I scolded ?   B. Why I was scolded ?
   C. Why was I been scolded ?   D. None of these

117.   My mother said, "where are you going" ?
   A. My mother asked where I was going .   B. My mother asked where I was going?
   C. My mother asked where was I going ?   D. None of these

118.   Either of the boys ___ won a medal.
   A. has   B. have   C. were   D. None of these

119.   He said , " Good night !".
   A. He wished me a good night.   B. He wished to me a good night
   C. He wished me good night   D. None of these

120.   It has been raining ___ morning.
   A. for   B. since   C. of   D. in

■■■

ANSWER SHEET

SECTION - A : METNAL ABILITY STUDIES

1. C	6. C	11. B	16. C	21. B	26. D
2. D	7. A	12. B	17. C	22. C	27. B
3. A	8. A	13. B	18. B	23. C	28. B
4. A	9. A	14. A	19. B	24. C	29. D
5. B	10. C	15. D	20. B	25. A	30. B

SECTION - B : MATHEMATICS

31. B	36. C	41. C	46. C	51. D	56. B
32. B	37. C	42. A	47. A	52. B	57. A
33. C	38. D	43. A	48. C	53. B	58. B
34. B	39. B	44. C	49. B	54. A	59. D
35. B	40. D	45. B	50. D	55. A	60. A

SECTION - C : GENERAL SCIENCE
I. BIOLOGY & ECOLOGY

61. B	64. B	67. B	70. D	73. C
62. C	65. A	68. A	71. A	74. C
63. D	66. D	69. D	72. C	75. B

II. PHYSICS

76. C	79. B	82. D	85. D	88. B
77. D	80. B	83. B	86. A	89. D
78. C	81. D	84. D	87. A	90. D

II. CHEMISTRY

91. B	94. B	97. D	100. A	103. A
92. B	95. A	98. D	101. A	104. C
93. C	96. D	99. C	102. B	105. A

SECTION - D : GENERAL ENGLISH

106. A	109. A	112. A	115. B	118. A
107. B	110. B	113. B	116. A	119. A
108. B	111. C	114. B	117. A	120. B