SRI CHAITANYA TECHNO SCHOOLS - A.P

THE RIGHT MENTOR FOR IIT-JEE & OLYMPIAD

SCHOLARSHIP TEST - MODEL PAPER

IX CLASS (STATE SYLLABUS)

(Based on class VIII syllabus)

TIME : 2 Hours **Max. Marks : 100**

Read the following instructions carefully.

1. a) WRITE YOUR NAME AND ADDRESS completely in the space provided on Answer Sheet.

   b) Mark the answers only on the ANSWER SHEET.

   c) Use BLACK BALL POINT PEN for darkening the appropriate CIRCLES in the ANSWER SHEET.

   d) Do not fold / spoil the ANSWER SHEET as it is to be evaluated by computer.

2. The question paper consists of 100 questions under four subject heads, Mathematics, Physics, Chemistry and English.

3. Number of Questions : 100 (Maths = 50, Physics = 15, Chemistry = 15 and English = 20)

4. All the questions are Multiple Choice type with only one correct answer and each question carries 1 mark. **NO NEGATIVE MARKS FOR ANY WRONG ANSWER.**

5. Return both the Question Paper and Answer Sheet to the invigilator before leaving the hall.

MATHEMATICS

1. **The difference between compound interest and simple interest on a certain sum of Money for 2 years at 4 % is Rs. 4. Then the sum is_____** **[ ]**

a) Rs. 3000 b) Rs. 2500 c) Rs. 4000 d) Rs.1000

2. **A can do a piece of work in 8 $\frac{1}{2}$ days. A works for 2 days and B Joins A. They work for one day. The capacity of B is double the capacity of A. On the 4th day the work is completed by A and B with the help of a boy. Then the number of days boy can alone completed the work is** **[ ]**

a) 30 days b) 25 days c) 17 days d) 10 days

3. **In a clock the two hands coincide between 4 hrs and 5 hrs. Then the time is_____** **[ ]**

a) 4 hrs$21\frac{9}{11}$ min b) 4 hours $32\frac{4}{9}$ min

c) 4 hrs $22\frac{3}{11}$ min d) 4 hrs $20\frac{2}{11}$ min

4. **Four carrom board strikers of radius 3.5cm are so arranged that each striker touches at least two other strikers. Then the area of empty space between the strikers is _____** **[ ]**

a) 21 sq.cms b) 20.25 sq.cms c) 10.5 sq.cms d) 15 sq.cms

5. **Fermat number is 2^{2^n} + 1. He proposed that 2^{2^n} + 1 is prime for all 'n' natural numbers. But it fails at n = 5, 2^{2^5} + 1 is not a prime.**

Then one of the factors of 2^{2^5} + 1 is _____ **[ ]**

a) 231 b) 437 c) 641 d) 31

6. **If n! (n Factorial) represents product first 'n' natural numbers. i.e. n! = 1 x 2 x 3 ..... n. Then number of factors of 12! is _____** **[ ]**

a) 692 b) 792 c) 592 d) 492

7. **The number of numbers which are not divisible by 2 or 3 or 5 from 1 to 100 is** **[ ]**

a) 21 b) 25 c) 26 d) 24

8. **The least natural number which when divided by 18,24 and 30 Leaves the remainder 14,20 and 26 respectively is _____** **[ ]**

a) 356 b) 354 c) 256 d) 254

9. **If sum of all digits in the decimal form of $10^n - 99$ is 100, then value of n is _____** **[ ]**

a) 11 b) 12 c) 13 d) 14

10. **Units place digit in the product of 22^{22} x 777^{777} x 333^{333} is _____** **[ ]**

a) 1 b) 2 c) 4 d) 6

11. **If $a^2 + b^2 + c^2 = D$ where 'a' and 'b' consecutive positive integers and c = ab then $\sqrt{D}$ is _____** **[ ]**

a) always an even integer b) always an odd integer

c) 1 d) irrational number

12. **Ten's place digit of 1! + 2! + 3! +..... 2008! is _____** **[ ]**

a) 4 b) 2 c) 1 d) None

13. **The set builder of a set A = { x /– 3 ≤ x ≤ 3, $x \in$ z}. Then total number of subsets of A is_____** **[ ]**

a) 64 b) 128 c) 32 d) 100

14. **Among the following set builder form of 'Null set' is _____** **[ ]**

a) { x : $x \neq x$ } b) { x = ∅ } c) {∅} d) ∅

15. **The G.C.D of two numbers is 7 and the first three quotients while calculating G.C.D by division Method are 1,2 and 3. Then the number are** **[ ]**

a) 21, 35 b) 105, 133 c) 49, 70 d) 21, 49

16. **The descending order of the numbers 7^{92}, 8^{91}, 7^{83}, 8^{12} is _____** **[ ]**

a) 7^{92}, 8^{91}, 7^{83}, 8^{12} b) 7^{92}, 7^{83}, 8^{91}, 8^{12}

c) 8^{91}, 7^{83}, 7^{92}, 8^{12} d) 8^{91}, 7^{92}, 7^{83}, 8^{12}

17. **If a^{m^n} = $(a^m)^n$, then 'm' in terms n is _____** **[ ]**

a) n^n b) n^{n-1} c) $n^{\frac{1}{n-1}}$ d) n^{1-n}

18. **Which of the following is wrong** **[ ]**

a) $\sqrt{1.6} \times \sqrt{0.9} = 1.2$ b) $\sqrt{-9} \times \sqrt{-4} = 6$

c) $\sqrt{0.01} \times \sqrt{100} = 1$ d) $\sqrt{144} \times \sqrt{0.01} = 1.2$

19. **If $\left(1-\frac{1}{2}\right)\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)$.....$\left(1-\frac{1}{n}\right)$ = 0.01 then $\sqrt{n}$ =** **[ ]**

a) 0.1 b) 10 c) 1 d) 10000

20. **The triplet (x , y, z) satisfying the given equations x + y + x y = 5, y + z + yz = 11 and z + x + z x = 7 are** **[ ]**

a) 2, 3, 4 b) 1, 2, 3 c) 5, 4, 3 d) –1, –2, –3

21. **The value of ' x ' that satisfying the equation $x - \frac{1}{x-3} = 3 - \frac{1}{x-3}$ is _____** **[ ]**

a) 3 b) 0 c) – 3 d) No values

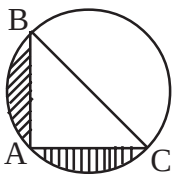
22. **In a right angle triangle which sides ' x ' and 'y', hypotenuse 'z', the altitude drawn on the hypotenuse is 'a' then** **[ ]**

a) x y = a^2 b) $\frac{1}{x}+\frac{1}{y}=\frac{1}{a}$ c) $x^2 + y^2 = 2a^2$ d) $\frac{1}{x^2}+\frac{1}{y^2}=\frac{1}{a^2}$

23. **If BC passes through the centre of the circle, then the area of the shaded region in the given figure is, If AB = AC = a units** **[ ]**

a) $\frac{a^2}{2}(3-\pi)$ sq.units b) $a^2\left(\frac{\pi}{2}-1\right)$ sq.units

c) $2a^2(\pi-1)$ sq.units d) $\frac{a^2}{2}\left(\frac{\pi}{2}-1\right)$ sq.units



24. **The diagonal of a square A is (x + y). The diagonal of square B with twice the area of A is** **[ ]**

a) $\sqrt{2}(x+y)$ b) 2 (x +y) c) 2 x + 4y d) 4 x + 2y

25. A square and an equilateral triangle have equal perimeters. If the diagonal of the square is $6\sqrt{2}$ cm. then area of the triangle is _____ [ ]

a) $16\sqrt{2}$ cm^2 b) $16\sqrt{3}$ cm^2 c) $12\sqrt{2}$ cm^2 d) $12\sqrt{3}$ cm^2

26. A wire in shape of an equilateral triangle encloses an area of 'S' sq cm. If the same wire is bent to form circle, the area of the circle is _____ [ ]

a) $\frac{\pi S^2}{9}$ sq.cm b) $\frac{3S^2}{\pi}$ sq.cm c) $\frac{3S}{\pi}$ sq.cm d) $\frac{3\sqrt{3}S}{\pi}$ sq.cm

27. If radius of the circle decreased by half, then the area of the circle decreased by _____ [ ]

a) 25% b) 75% c) 60% d) 80%

28. If $|x| = \pm x$, then the figure formed by $|x| + |y| = 1$ is _____ [ ]

a) rectangle b) Square c) Rhombus d) circle

29. If $\left(\frac{a}{b}\right)^x = \left(\frac{b}{a}\right)^y$ then $\frac{x}{y} + \frac{y}{x}$ = _____ [ ]

a) 4 b) 0 c) – 2 d) 2

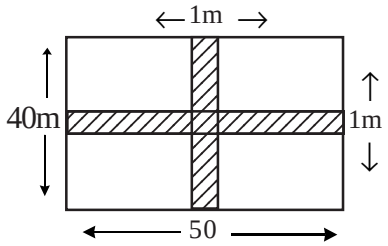
30. The area of the shaded portion in adjoining figure is [ ]

a) 2000m^2

b) 90 m^2

c) 45 m^2

d) 89 m^2



31. If $a^m . a^n = (a^m)^n$ then m (n–2) + n(m–2) is _____ [ ]

a) 1 b) – 1 c) 0 d) $\frac{1}{2}$

32. If p = $\frac{x-y}{x+y}$, q = $\frac{y-z}{y+z}$. r = $\frac{z-x}{z+x}$ then (1 + p) (1 + q) (1 + r) = _____ [ ]

a) (1 – p) (1 – q) (1 – r) b) 1

c) 0 d) pqr

33. The triplet (x, y, z) satisfying the given equations $\frac{3xy}{x+y} = 5, \frac{2xz}{x+z} = 3, \frac{yz}{y+z} = 4$ are [ ]

a) $\frac{120}{61}, \frac{120}{11}, \frac{120}{55}$ b) $\frac{120}{31}, \frac{120}{41}, \frac{120}{23}$

c) 1, 2, 3 d) No solutions

34. The factors of $x^4 + x^2 + 1$ are [ ]

a) ($x^2 + x + 1$) and $x^2 - x - 1$ b) $x^2 + x + 1$ and $x^2 - x + 1$

c) $x^2 + 1, x^2 + 1 - x$ d) $x^2 + x + 1, -x^2 + x + 1$

35. The factors of $(a-b)^3 + (b-c)^3 + (c-a)^3$ are [ ]

a) 3, ab, bc and ca b) 3, (a–b), (b–c) and (c–a)

c) 3, a, b and c d) No factors

36. **The line $3x - y + 4 = 0$ doesn't passes through _____** **[ ]**

a) Quadrant I b) Quadrant II c) Quadrant III d) Quadrant IV

37. $Q_1 \cap Q_2$ = _____ **[ ]**

a) Positive x – axis b) Negitive y – axis

c) Negitive x – axis d) null set

38. **The ratio of y– coordinate and x – coordinate is _____** **[ ]**

a) zero b) x – intercept c) slope d) y intercept

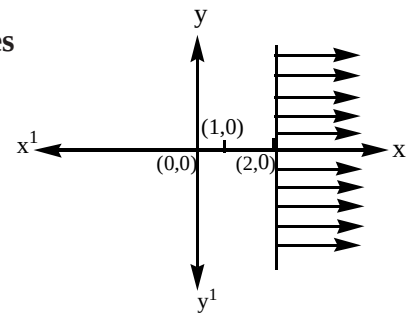
39. **The shaded region in adjacent figure denotes** **[ ]**

a) $x > 2$

b) $x \geq 2$

c) $y > 2$

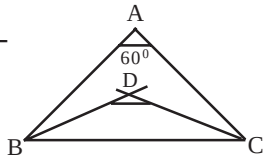
d) $y \geq 2$



40. **If $\overline{BD}$ and $\overline{CD}$ are the internal bisectors of the angles $\angle B$ and $\angle C$ respectively and meet D. given that A = 60^0, then $\angle D$ = _____** **[ ]**

a) 90^0 b) 120^0

c) 30^0 d) 100^0



41. **If sum of all interior angles of regular convex polygon is 720^0, then it is a _____** **[ ]**

a) Nanogon b) hexagon c) pentagon d) octagon

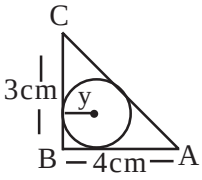
42. **The ratio of interior angle to the exterior angle of a regular polygon is 7:2. The number of sides of the polygon is _____** **[ ]**

a) 8 b) 9 c) 14 d) 16

43. **The area of the circle in adjacent figure is** **[ ]**

a) 2π cm^2 b) π cm^2

c) 3π cm^2 d) Data in adequate



44. **The line joining incentre, circum centre, orthocentre and centriod of any triangle is called as** **[ ]**

a) Euler's line b) Euclid's line

c) Descarte's line d) Pythagorous line

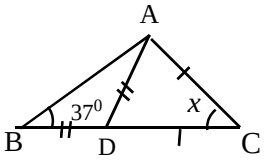
45. **Among the following measurement set, which form a triangle is _____** **[ ]**

a) 2, 5, 11 b) 3, 6, 10 c) 4, 5, 6 d) 5, 10, 23

46. **In the adjoing figure $\angle B = 37^0$, $\overline{AD} = \overline{BD}$ and $\overline{CD} = \overline{AC}$, then $\angle C$ =** **[ ]**

a) 32^0 b) 48^0

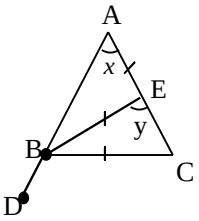
c) 57^0 d) 53^0



47. **In the adjacent figure BC = BE = AE, $\overline{AB}$ is produced to D then** **[ ]**

a) $\angle y = 2\angle x$ b) $\angle DBC = 3\angle x$

c) Both a & b d) None



48. **If (x +y) (x +y+z) = 36, (y+z) (x +y+z) = 60, (z+ x) (x +y+z) = 32, then x +y+z = _____** **[ ]**

a) 10 b) 16 c) 64 d) 8

49. **If $a^x = b^y = c^z$ and $b^2 = ac$ then $\frac{1}{x}+\frac{1}{z}$ = _____** **[ ]**

a) $\frac{2}{y}$ b) $\frac{1}{y}$ c) $\frac{1}{2}$ y d) 2 y

50. **If a – b = 3 and $a^3 - b^3 = 117$ then a + b = _____** **[ ]**

a) 5 b) 7 c) 9 d) 11

PHYSICS

51. **Among the following, the largest unit of length is** **[ ]**

a) Light year b) Astronomical unit

c) Parsec d) Nothing can be decided

52. **Wave length of sodium is 5896 A^0. Its value in millimicrons is** **[ ]**

a) 58960 b) 58.96 c) 5.896 d) 589.6

53. **A 2 kg ball is moving at 10ms^{-1} and collides with another 2 kg ball at rest. The velocity with which they move combinely after collision is** **[ ]**

a) 10ms^{-1} b) 20ms^{-1} c) 5ms^{-1} d) 15ms^{-1}

54. **A solid weighs 0.08 kg f in air and 0.064 kg f in water. The R.D of solid is** **[ ]**

a) 5 b) 7.5 c) 2.5 d) 10

55. **A block of wood floats in water with $\frac{1}{5}th$ of the volume above the surface. The density of the wood is** **[ ]**

a) 0.5 g / cc b) 1 g / cc c) 0.6 g / cc d) 0.8 g / cc

56. **1^0c raise of temperature is equal to _____ kelvin** **[ ]**

a) 273 b) – 273 c) 272 d) 1

57. **1 kg wt is equal to** **[ ]**

a) 9.8 N b) 980 N c) 98 N d) 0.98 N

58. **Stars twinkle due to** **[ ]**

a) refraction b) reflection

c) scattering d) polarisation of light

59. The deviation produced in the ray, if a ray of light incidents on a plane mirror at an angle 30^0 is [ ]

a) 30^0 b) 60^0 c) 90^0 d) 120^0

60. Mark the correct statement [ ]

a) The laws of reflection of light hold only for plane surfaces
b) The size of virtual image can be measured by receiving it on screen
c) Plane mirror always form an erect image
d) Plane mirror may form inverted image

61. An object of 2 cm high placed at a distance of 16 cm from a concave mirror which produces a real image of 3 cm high. The focal length of the mirror is [ ]

a) – 48 cm b) – 16 cm c) – 9.6 cm d) – 24 cm

62. The temperature at which celcius scale reading is equal to Fahrenheit scale is [ ]

a) $+ 160^0$ b) $- 160^0$ c) $+ 40^0$ d) $- 40^0$

63. The centre of gravity of a regular cuboid is [ ]

a) at the centre of a large face
b) at the centre of a small face
c) at one of the corners
d) at the point of intersection of body diagonals

64. A person in a moving train tosses a coin up. It falls infornt of him. Then the train is said to be moving with [ ]

a) uniform speed b) uniform velocity
c) acceleration d) retardation

65. The number of images of an object formed when two plane mirrors are kept at an angle of 72^0 is [ ]

a) 3 b) 5 c) 6 d) 4

CHEMISTRY

66. Contact process is used for the production of [ ]

a) Sulphuric acid b) Sulphurous acid
c) Nitric acid d) Nitrous acid

67. Magnesium oxide on reaction with water gives magnesium hydroxide which turns red litmus to blue. Based on this, the nature of magnesium oxide is [ ]

a) acidic b) basic c) neutral d) amphoteric

68. The metallic oxides can be converted to metals by passing pure hydrogen at elevated temperatures. This process is shown in the following equation $CuO + H_2 \uparrow \rightarrow Cu + H_2O$. In this reaction [ ]

a) Copper is reduced b) Copper is oxidised
c) Copper is neutralised d) Hydrogen is reduced

69. The amount of oxygen required to combine with 2.4grams of magnesium in the reaction $2Mg + O_2 \rightarrow 2\ MgO$ is [ ]

a) 160g b) 1.6g c) 16g d) 32g

70. A particular nitrogen oxide containing 0.8775g of nitrogen per gram of the compound. Is another oxide possible with 0.2925g of nitrogen per gram. Here, the law followed is [ ]

a) No, Law of conservation of mass b) Yes, Law of multiple proportions
c) No, Law of constant composition d) Yes, Law of reciprocal proportions

71. **Among the following, the incorrect statement is** **[ ]**

a) Action of heat on NH_4Cl is a physical change

b) NH_4Cl is a sublimable compound

c) Action of heat on NH_4Cl is a chemical change

d) NH_4Cl on heating gives white dense fumes.

72. **Read the following reactions, identify A, B, C and D** **[ ]**

a) $\underset{(A)}{ZnO} \underset{cool}{\overset{heat}{\rightleftharpoons}} \underset{(B)}{ZnO}$ b) $\underset{(C)}{PbO} \underset{cool}{\overset{heat}{\rightleftharpoons}} \underset{(D)}{PbO}$

	A	B	C	D
a)	White	yellow	yellow	brown
b)	White	yellow	brown	yellow
c)	White	brown	yellow	white
d)	White	brown	yellow	brown

73. **Statement 1 :** Formula of carbonate ion is CO_3^{2-} **[ ]**

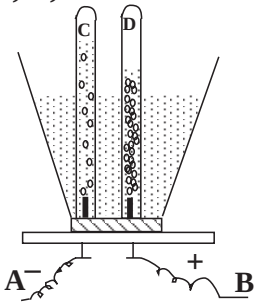
Statement 2 : Formula of sulphite ion is S^{-2}

Statement 3 : Formula of dichromate ion is $Cr_2O_7^{-2}$

Option	Statement 1	Statement 2	Statement 3
a)	T	T	T
b)	T	F	T
c)	T	F	F
d)	F	T	T

74. **Electrolysis of water is shown in the figure. Identify A, B, C and D** **[ ]**

	A	B	C	D
a)	Anode	cathode	H_2	O_2
b)	Cathode	anode	H_2	O_2
c)	Anode	cathode	O_2	H_2
d)	Cathode	Anode	O_2	H_2



75. **1.375g of pure cupric oxide is reduced by heating in a current of pure and dry hydrogen and the mass of copper that remained is 1.0980g. In another experiment, 1.179g of pure copper is dissolved in pure HNO_3 and the resulting copper nitrate converted into copper oxide by ignition. The mass of copper oxide formed is 1.476g. The above data illustrates** **[ ]**

a) Law of conservation of mass b) Law of multiple proportions

c) Law of constant composition d) Law of reciprocal proportions

76. **Read the following reactions and choose the correct option** **[ ]**

1. $NH_3 + HCl \rightarrow NH_4Cl$

2. $2Pb(NO_3)_2 \rightarrow 2PbO + O_2 \uparrow + 4NO_2 \uparrow$

3. $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$

4. $AgNO_3 + HCl \rightarrow AgCl + HNO_3$

	a	b	c	d
Chemical combination	1	2	4	3
Chemical decomposition	2	3	3	2
Chemical displacement	3	1	1	1
Chemical double displacement	4	4	2	4

77. Match the following **[ ]**

	Set A	Set B	Set C
1.	Sodium	A) Cuprum	a) Ag
2.	Copper	B) Argentum	b) Cu
3.	Silver	C) Aurum	c) Pb
4.	Gold	D) Plumbum	d) Na
5.	Lead	E) Natrium	e) Au

a)	**1**	**2**	**3**	**4**	**5**
	E	A	B	C	D
	d	b	a	e	c
b)	**1**	**2**	**3**	**4**	**5**
	A	B	C	E	D
	d	b	a	c	e
c)	**1**	**2**	**3**	**4**	**5**
	E	A	B	D	C
	d	b	e	a	c
d)	**1**	**2**	**3**	**4**	**5**
	E	A	C	B	D
	d	b	c	a	e

78. I have 100gm of $CaCO_3$. If I heat it strongly for some time in an open dish, cool it and weigh it again, its weight would be **[ ]**

a) 95gm b) 56gm c) 44gm d) 40gm

79. $2KMnO_4 + 3H_2SO_4 + 5H_2S\uparrow \rightarrow K_2SO_4 + 2MnSO_4 + 8H_2O + 5S$
In the above reaction oxidising agent is **[ ]**

a) $KMnO_4$ b) H_2SO_4 c) H_2S d) H_2O

80. **[ ]**

Oxide	Nature of oxide
1) P_2O_5	
2) CO_2	
3) MgO	
4) SO_2	

	1	2	3	4
a)	Acidic	Basic	Basic	Acidic
b)	Acidic	Acidic	Basic	Acidic
c)	Acidic	Acidic	Acidic	Basic
d)	Acidic	Basic	Acidic	Basic

ENGLISH

I. Choose the most suitable form of the verb given.

81. One of my friends _____ me if I had asked. **[ ]**

a) will have helped b) have helped
c) has been helped d) would have helped

82. I didn't see _____ [ ]

a) where are you ? b) where were you ?
c) where you were d) where you have been

83. What a beautiful horse _____ [ ]

a) it is ? b) is it ? c) it is ! d) is it !

II. Choose the correct alternative.

84. Though the rainfall was adequate this year, the mango trees still _____ a high yield [ ]

a) had not produced b) did not produce
c) would not produce d) was not produced

85. It is earth's gravity which_____ people their weight [ ]

a) given b) gave c) giving d) gives

86. _____ president, a candidate must win a majority of votes. [ ]

a) Elected a b) To be elected as
c) Electing as d) To be elected a

87. Total weight of all the ants in the world is much greater than _____ [ ]

a) all human beings b) to all human beings
c) that of all human beings d) of all human beings

88. _____, I can get so many books to read. [ ]

a) My father is a librarian b) Being my father a librarian
c) My father is a librarian but d) My father being a librarian

III. There is an error in each of the sentences given below. Choose the correct alternative and write its option in the brackets.

89. He does not smoke, <u>nor he drinks</u> [ ]

a) nor he does drink b) nor does he drink
b) neither he does drink d) no change

90. The notes <u>is writing</u> by me now [ ]

a) has been writing b) was being written
c) is being written d) has written

IV. Identify the correct parts of speech of the following.

91. I complained <u>about</u> my stomach ache [ ]

a) verb b) adjective
c) conjunction d) preposition

92. They like him because he <u>is</u> honest [ ]

a) preposition b) conjunction
c) verb d) pronoun

V. Choose the correct meaning of the word underlined

93. We were <u>fascinated</u> by the speech of our friend [ ]

a) amused b) satisfied c) disgusted d) attracted

VI. Choose the wrongly - spelt word from the words given below [ ]

94. a) arguement b) divide c) opinion d) precious

VII. Choose the best meaning for the idiom given below

95. A snake in the grass **[ ]**

a) a very poisonous snake b) a secret agent
c) an unrecognisable enemy d) not a reliable person

VIII. Choose the correct sentence of the following

96. His pocket has been picked **[ ]**

a) Some one have picked his pocket
b) Some one picked his pocket
c) Picked has been his pocket
d) Some one has picked his pocket

97. The teacher punished the boys who had not done their home work. **[ ]**

a) The boys who had not done their home work had been punished by their teacher.
b) The boys were punished by their teacher who had not done their home work.
c) The boys who had not done their home work were punished by the teacher.
d) The boys who had not done their home work were being punished by the teacher.

IX. Identify the degree of comparison

98. Pen is mightier than sword **[ ]**

a) superlative b) comparative c) positive d) compound

X. Select the correct word or phrase to complete a grammatical sentence.

99. They enjoyed _____ during holidays. **[ ]**

a) in b) themself c) themselves d) None

XI. Complete the following proverb choosing the best from the given below

100. Birds of same feather _____ **[ ]**

a) flock together b) build their nest together
c) gather food together d) hunt their prey together