

### **LEAD TALENT SEARCH EXAM - LTSE 2015**

A Project by LEAD Trust, Bangalore – www.leadtrust.in SUNDAY, 12<sup>тн</sup> APRIL 2015 – KERALA

# ENTRANCE TEST FOR 10<sup>TH</sup> STD STUDENTS FOR 2YEAR RESIDENTIAL COACHING FOR IIT-JEE 2017 & MEDICAL ENTRANCE EXAMS 2017 AND ADMISSION TO PUC WITH

### PARTNER COLLEGES

Sl.	College	City	Gender	Coaching For	No. of FREE Seats
1	Alpine PU College	Bangalore	Only Boys	IIT-JEE / NIT + KCET Engineering	10
2	M S Academy	Hyderabad	Only Boys	IIT-JEE / NIT	30
3	Shaheen PU College	Bidar	Boys & Girls	Karnataka & Kerala CET Med & Engg	50
4	Shaheen PU College	Bangalore	Only Boys	Karnataka & Kerala CET Med & Engg	10
5	Shaheen PU College	Gulbarga	Boys & Girls	Karnataka & Kerala CET Med & Engg	30
6	Shaheen Challenger Junior College	Hyderabad	Only Girls	Karnataka & Kerala CET Med & Engg	10
7	Shaheen Crescent PU College	Bangalore	Only Girls	Karnataka & Kerala CET Med & Engg	07

NAME OF THE STUDENT	:
LTSE 2015 Hall Ticket No.	:
CENTRE NAME	:
Co-ordinator Name	:
Co-ordinator Mobile No.	·

### **STUDENTS SELECTED FOR INTERVIEW MUST BRING THIS QUESTION PAPER AT THE TIME OF INTERVIEW . KEEP THIS SAFELY TILL THE DATE OF INTERVIEW**

#### **INSTRUCTIONS TO THE CANDIDATE**

1. This question booklet contains **120** questions. Please verify that this booklet contains all **120** questions in correct serial order.

#### 2. This question paper consists only objective type questions in 4 parts:

- Part I Logical Reasoning
- Part II Mathematics
- Part III Physics
- Part IV Chemistry
- Part V Biology.

Indicate your answers **ONLY** on the OMR sheet.

- **3.** Students opting for Engineering IIT-JEE 2017 should answer Part I, Part II, Part III and Part IV only. Time: 150 Mins. Marks: 95
- 4. **Students opting for Medical 2017 should answer Part I, Part III, Part IV & Part V only.** Time:150 mins. Marks:95
- 5. **NEGATIVE MARKING:** Each correct answer will be awarded one mark. <sup>1</sup>/<sub>4</sub> marks will be deducted for each incorrect answer.
- **6.** More than one answer marked against a question will be deemed as an incorrect answer and will be negatively marked.
- 7. Use of Calculators/logarithmic tables is **NOT ALLOWED**.
- 8. Kindly use the blank space in the Question Paper for all ROUGH WORK.

### PLEASE DO NOT OPEN THE SEAL UNTIL YOU ARE ASKED TO DO SO.

# **Part 1: Logical Reasoning**

1. Find the next number in the sequence

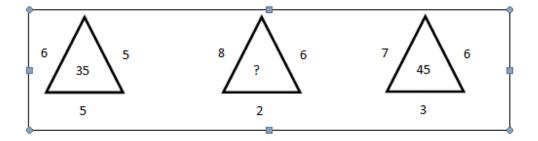
e sequence 7 : 48 :: 8 : ?

- a. 78
- b. 65
- c. 59
- d. 63

2. Choose a number that is similar to the numbers in the set 579, 489, 363

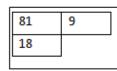
- a. 471
- b. 284
- c. 296
- d. 167
- 3. Find the odd pair
  - a. 54-62
  - b. 70-80
  - c. 28-32
  - d. 21-24
- 4. A watch reads 7:30. If the minute hand points at West, in which direction will the hour hand point?
  - a. South-West
  - b. North-West
  - c. South-East
  - d. North-East
- 5. One early morning immediately after sunrise, I stood directly facing my house. I noticed that the shadow of the house fell to my left. In which direction was I facing?
  - a. South b. North c. East d. West

- 6. Complete the series: 11, 23, 48, 99, 202, ...
  - a. 401
  - b. 408
  - c. 409
  - d. 405
- 7. Complete the series: A, CD, GHI, ..., UVWXY
  - a. LMNO
  - b. MNO
  - c. NOPQ
  - d. MNOP
- 8. Find the missing number



- a. 55
- b. 50
- c. 36
- d. 40

#### 9. Find the missing number



a.

84	12	
14		

	11	88
?		?

b. 16

18

8

- c. 25
- d.
- 10. Other than noon and midnight, how many times do the hour and the minute hands cross each other?
  - a. 11
  - b. 10
  - c. 9
  - d. 12
- 11. Five marbles of different colors are arranged in a line. You decide to arrange these marbles in different unique combinations, but move only one marble per minute. How much time will it take for you to arrange them in all possible combinations?
  - a. One hour
  - b. One and half hours
  - c. Two hours
  - d. Two hours and 20 minutes
- 12. I told my daughter: "I was your present age when you were born". I am 40 years old now. How old will be my daughter 10 years from now?
  - a. 10
  - b. 20
  - c. 30
  - d. 25

- 13. If 9 \* 3 = 144 and 6 \* 3 = 81, what is 10 \* 2?
  - a. 100
  - b. 144
  - c. 104
  - d. 169
- 14. Five timers are set to ring at durations of 12 seconds, 15 seconds, 20 seconds, 25 seconds and 45 seconds. If they all ring together at 12:00 noon, when will they all ring together again next?
  - a. 1:00 PM
  - b. 1:05 PM
  - c. 12:30 PM
  - d. 12:15 PM
- 15. Imagine that Dec 1st of some year is a Tuesday. When will the last Sunday of that year fall on?
  - a. Dec 29th
  - b. Dec 27th
  - c. Dec 26th
  - d. Dec 30th
- 16. All students in a class are arranged in a line. You are 10th in the line from the beginning and I am 8th from the end. When we switch places, you are 25th from the beginning. How many students are in the class?
  - a. 32
  - b. 29
  - c. 30
  - d. 34

- 17. A caterpillar climbs up a wall five meters every minute, but slips back two meters in the next minute. If it starts climbing a 90 meters tall wall at 5:00 AM, at what time will it touch the top of the wall?
  - a. 6:00 AM
  - b. 5:30 AM
  - c. 5:59 AM
  - d. 6:01 AM

18. Pointing out to a photograph, a man tells his friend, "She is the daughter of the only son of my father's only wife". How is the girl in the photograph related to the man?

- a. Niece
- b. Daughter
- c. Sister
- d. Cousin
- 19. How many numbers are there from 1 to 50, each of which is exactly divisible by 4 and also contain 4 as a digit in it?
  - a. 4
  - b. 6
  - c. 3
  - d. 5

20. How many times are the hour and minute hands at 1800 from each other in 24 hours?

- a. 24
- b. 23
- c. 22
- d. 21

## **Part 2: Mathematics**

21. If 
$$\frac{\sqrt{3}-1}{\sqrt{3}+1} = a - b\sqrt{3}$$
, then find values of 'a' and 'b'  
a.  $a = -2, b = 1$   
b.  $a = 2, b = 1$   
c.  $a = -2, b = -1$   
d.  $a = 2, b = -1$   
22. If  $\sqrt{5} = 2.236$  and  $\sqrt{3} = 1.732$ , find the value of  $\frac{2}{\sqrt{5}+\sqrt{3}} + \frac{2}{\sqrt{5}-\sqrt{3}}$   
a. 16.36  
b. 19.268  
c. 15.296  
d. 4.47  
23. When the price of onions reduced by 30%, I could buy 3 more kilograms of it at the same previous price of Rs 280. What was the original price of onions?  
a. 80  
b. 40  
c. 36  
d. 24  
24. What percentage of a full day is one hour and forty five minutes?  
a. 7.228%  
b. 7.291%  
c. 7.193%  
d. None of these  
25. Abdullah drank 77 glasses of milk in a week, each day drinking 3 more than the previous day. How many glasses of milk did he drink on the first day?

a. 3 b. 5 c. 2 d. 1

- 26. You are given two fractions. Fraction A is twice Fraction B. The product of the two fractions is . What is the value of fraction B?
  - a. 1/25
  - b. 2/5
  - c. 1/5
  - d. None of these
- 27. What is the value of the expression

	$\frac{(x-y)^3 + (y-z)^3 + (z-x)^3}{(x-y)(y-z)(z-x)}$
a.	30
b.	3
c.	x + y + z
d.	x - y - z
If x +	$y + z = 0$ , then $\frac{x^2}{yz} + \frac{y^2}{zx} + \frac{z^2}{xy}$ is equal to
a.	3
b.	1
c.	-3
d.	27
	(** 1) (** 2)
If $\left(\frac{a}{a}\right)$	$\binom{(x-1)}{2} = \left(\frac{b}{2}\right)^{(x-3)}$ , find the value of x

29. If  $\left(\frac{a}{b}\right)^{(a-b)} = \left(\frac{b}{a}\right)^{(a-b)}$ , find the value of x a. 4 b. 3 c. 2 d. 1

28.

30.	For the	e equation $3x^2 + px + 3 = 0$ , $p > 0$ , if both the roots are the same, then p is equal to
	a.	$\frac{1}{3}$
	b.	6
	c.	2
	d.	-
31.	If tan (	$\theta = \frac{4}{3}$ , what is the value of $\sqrt{\frac{1 - \sin \theta}{1 + \sin \theta}}$
	a.	3
	b.	1/3
	c.	1/4
	d.	4
32.	If 5 tar	$\theta = 4$ , find the value of $\frac{5 \sin \theta - 3 \cos \theta}{5 \sin \theta + 2 \cos \theta}$
	a.	$\tan \theta$
	b.	$3 \tan \theta$
	c.	1/3
	d.	1/6

33. Two cars are driving on the road towards a building from opposite sides. The angles of elevation of the top of the building as observed from the two cars are 30° and 45°. If the building is 100 units high, the distance between the two cars is?

- a. 273 units
- b. 500 units
- c. 440 units
- d. 370 units

- 34. The cost of carpeting a hall 20 feet long is Rs 40. Had the breadth been 3 feet less, the cost would have been Rs 25. Find the area of the hall.
  - a. 360 ft2
  - a. 260 ft2
  - b. 160 ft2
  - c. 200 ft2
- 35. A drum manufacturer has decided to make the radius of the drum be twice as large. However, he still wants the drum to contain the same amount of liquid. What should be the new height of the drum?
  - a. 40% smaller
  - b. 75% smaller
  - c. 50% smaller
  - d. 20% smaller
- 36. The diagonals of a rhombus are 48 cm and 64 cm. The height of the rhombus is
  - a. 38.4 cm
  - b. 43.5 cm
  - c. 30.5 cm
  - d. 29 cm
- 37. The point on the x-axis which is the same distance from (5, 4) and (-2, 3) is
  - a. (0, 0)
  - b. (2, 2)
  - c. (2, 0)
  - d. (1.5, 3.5)

38. If two dice are thrown, what is the probability of getting two numbers whose product is even?

- a. 1/2
- b. 1/3
- c. 5/16
- d. 3/4

39. If  $\frac{a^2-1}{a} = 2$ , then the value of  $is\frac{a^6-1}{a^3}$ 

- a. 11
- b. 12
- c. 13
- d. 14
- 40. If two triangles are on the same base and between the same parallels, then the ratio of their areas is
  - a. 1:1
  - b. 1:2
  - c. 2:1
  - d. 1:3
- 41. A circle has a radius of 5 cm. You have a chord in it of length 8 cm. The distance of the chord from the center is
  - a. 2 cm
  - b. 5 cm
  - c. 3 cm
  - d. 6 cm

42. The record of a weather station shows that out of the past 250 forecasts were correct 175 times. What is the probability that correct?						-		
	a.	0.8	b.	0.33	c.	0.75	d.	0.7
43.	If mean = $110$ and mode = $80$ , then the median is							
	a.	90	b.	95	c.	105	d.	100
44.				n is melted and and 2 cm, find			-	l balls. If the radii
	a.	2.5 cm	b.	1.75 cm	c.	1 cm	d.	1.25 cm

45. Tony's grandmother was 8 times older than him 16 years ago. She would be 3 times of his age 8 years from now. Eight years ago, what was the ratio of Tony's age to that of his grandmother?

a. 2:7 b. 11:53 c. 5:17 d. 3:8

## **Part 3: Physics**

46. A person moves a certain distance in a certain time. If 1/3 of the distance is covered in 2/3 of the

time with speed V1 , and the rest of the 2/3 distance in 1/3 of the time speed V2 , then V1 / V2 is

- a. 1/2
  b. 1/4
  c. 4/9
  d. 2/9
- 47. If one puts ones ears to the steel rail, the sound of a coming train can be heard even when the Train cannot be seen. One can conclude from this observation that
  - a. Sound travels faster in steel than in air.
  - b. Amplitude of sound in the rail is much larger than in air.
  - c. Sound can travel larger distances in solids than in air.
  - d. Quality of sound in rail is better than in air.

The reasonable conclusions are

- $a. \ a \ and \ c$
- b. a and b
- c. b and c
- d. b and d

48. Examine the following statements:

- a. When two bodies are rubbed against each other, the charges are created.
- b. When two bodies are rubbed against each other, charges in these bodies are redistributed.
- c. When two bodies are rubbed against each other, similar charges appear on each.
- d. When two bodies are rubbed against each other, dissimilar charges appear on both.

The correct statements are:

- a. All four
- b. None
- c. Only A and C
- d. Only B and D
- 49. Bottom of the bucket containing water appears to be raised; physical phenomenon behind it is:a. Reflection of light

- b. Refraction of light
- c. Diffraction of light
- d. Dispersion of light

50. The type of motion with reference to friction in decreasing order is:

- a. rolling, static, sliding
- b. rolling, sliding, static
- c. static, sliding, rolling
- d. sliding, static, rolling
- 51. Mohan moves 30 mts in a straight line towards East and then moves 40 mts to the South. Find his displacement:
  - a. 70 mts
  - b. 20 mts
  - c. 50 mts
  - d. 60 mts
- 52. A vibrator generates the waves of the speed 330 m/s and wavelength 1.1 m. Then the frequency and timeperiod is
  - a. 264 Hz, 0.0037 sec
  - b. 412.5 Hz, 0.0024 sec
  - c. 300 Hz, 0.0033 sec
  - d. 264 Hz, 0.0033 sec
- 53. When a stone is dropped into the lake, the produced waves are
  - a. Transverse waves
  - b. Sound waves
  - c. Longitudinal waves
  - d. Electromagnetic waves
- 54. The power of the concave lens is 0.05 per cm. At what distance should the object from the lens be placed so that it forms an image at 10 cm from the lens?
  - a. 20 cm
  - b. 1/20 cm
  - c. 10 cm
  - d. 1/10 cm
- 55. The acceleration due to gravity of the earth is 9.8 m/s<sup>2</sup> and the radius of the earth is 6400 km. What is the approximate mass of the earth ? Take Universal Gravitational constant  $G = 6.67 \times 10^{-11} \text{ Nm}^2/\text{Kg}^2$  :
  - a.  $6 \times 10^{24} \text{ kg}$ b.  $6 \times 10^{20} \text{ kg}$ c.  $9 \times 10^{24} \text{ kg}$
  - d.  $9 \times 10^{20} \text{ kg}$

56. Which of the following correctly describes the magnetic field near a long straight wire?

- a. The field consists of straight lines perpendicular to the wire.
- b. The field consists of straight lines parallel to the wire.
- c. The field consists of radial lines originating from the wire.
- d. The field consists of concentric circles centred on the wire.

57. Boiling point of water in Fahrenheit scale is

- a. 180 deg F
- b. 158 deg F
- c. 100 deg F
- d. 212 deg F

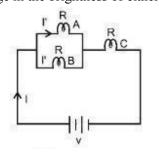
58. Heat supplied to a substance at its melting point is used for

- a. Rise in temperature
- b. Change of state
- c. Both (1) and (2)
- d. Doing work

59. A car is moving with a constant speed of 70 km/h. Which of the following statements is correct ?

- a. The acceleration of the car is definitely zero.
- b. The car has an acceleration only if it is moving along a curved path
- c. The car may have an acceleration even if it is moving along a straight path
- d. The car may not have an acceleration even if it is moving along a curved path
- 60. A box of mass 20 kg is pushed along a rough floor with a velocity 2 m/s and then let go. The box moves 5 m on the floor before coming to rest. What must be the frictional force acting on the box ?
  - a. 4 N
  - b. 2 N
  - c. 20 N
  - d. 8 N

- 61. A spring balance measures the weight of an object in air to be 0.1 N. It shows a reading of 0.08 N when the object is completely immersed in water. If the value of acceleration due to gravity is 10m/s<sup>2</sup>. The volume of the object is
  - a.  $20 \text{ cm}^3$
  - b.  $80 \text{ cm}^3$
  - c. 200 cm<sup>3</sup>
  - d.  $2 \text{ cm}^3$
- 62. Consider a simple circuit as shown containing a battery and three identical incandescent bulbs A, B and C. Bulb A is wired in parallel with bulb B and this combination is wired in series with bulb C. What would happen to the brightness of the other two bulbs if bulb A were to burn out?
  - a. Only bulb B would get brighter.
  - b. Both B and C would get brighter.
  - c. Bulb B would get brighter and Bulb C would get dimmer.
  - d. There would be no change in the brightness of either bulb B or bulb C.



- 63. A ball of mass 0.20 kg falls freely from a certain height and rebounds elastically with a speed of 40 m/s. The change in momentum of the ball is
  - a. 4 kg-m/s b. 8 kg-m/s c.16 kg-m/s d.40 kg-m/s
- 64. The amount of energy consumed by a 10HP water pump in 10 minutes to lift the water to overhead tank is:
  - a. 26.856 MJ
  - b. 4.476 MJ
  - c. 53.712 MJ
  - d. 13.428 MJ
- 65. A ray of light passes from denser medium to rarer medium. If the thickness of the denser medium is doubled, then the emerging angle is
  - a. also doubled.
  - b. Reduced by its half.
  - c. Not affected.
  - d. Critical angle.

66. Inside the magnet, the field lines run

- a. From south to north
- b. Away from north pole
- c. From north to south
- d. Away from south pole
- 67. When light passes through a prism, the colour which deviates the least is a. Red b. Violet c. Green d.Blue
- 68. An electric fuse is based on
  - a. the chemical effect of the current
  - b. the heating effect of the current
  - c. the magnetic effect of the current
  - d. None of these

69. Two charged bodies having equal potential are connected through a conducting wire. In this case

- a. current will flow.
- b. current will not flow.
- c. cannot say.
- d. current will flow if a resistor is also connected.
- 70. A body of weight W is suspended from the ceiling of a room through a rope of weight R. The ceiling pulls the rope by a force of
  - a. W
  - b. R
  - c. W + R
  - d. (W + R)/2

# Part 4 : CHEMISTRY

71. How many electrons are present in second shell of Oxygen ?

a) 2	b)6	c)8	d)4					
72. Most solut	ole in water	is —						
a) Camphor	b)	Sugar						
c) Sulphur	d)	d) Common Salt						
73. The number	er of moles o	of solute preser	nt in 1 kg of a solvent	is called its				
a) molality	b)	molarity						
c) normality	d)	formality						
74. The most e	electronegati	ve atom amon	g the following is					
a) Oxygen	b)	Fluorine						
c) Nitrogen	d)	Helium						
75. The metall	lurgical proc	ess in which a	metal is obtained in a	fused state is called				
a) smelting	b)	Roasting						
c) calcinations	s d)	froth floatatio	n					
76. Which solu	76. Which solution is most acidic							
a) pH = 6	b)	pH = 7	c) pH = 3	d) pH = 2				

77. The main buffer system of the human blood is

a) $H_2CO_3 - HCO_3^-$	b) $H_2CO_3 - CO_3^{2-}$
c) CH <sub>3</sub> COOH - CH <sub>3</sub> COO <sup>-</sup>	d) $NH_2CONH_2 - NH_2CONH^+$

78. The gas present in the stratosphere which filters out some of the sun's ultraviolet light and provides an effective shield against radiation damage to living things is a) helium b) ozone c) oxygen d) methane 79. The formula C<sub>6</sub>H<sub>5</sub>-CO-CH<sub>3</sub> represents a) Acetone b) Acetic acid c) Acetophenone d) Phenyl acetate 80. The names of the scientists- Newlands, Mendeleev, and Meyer are associated with the development of a) atomic structure b) metallurgy c) periodic table of elements d) discovery of elements 81. The half life period of an isotope is 2 hours. After 6 hours what fraction of the initial quantity of the isotope will be left behind? a) 1/6 b) 1/3 c) 1/16 d) 1/8 82. The number of electrons presents in  $H^+$  is d) three a) zero b) one c) two 83. The hardest form of carbon is a) coke b) Graphite c) charcoal d) Diamond

84 The action of w	ater on quick lime is an e	example of which type of	reaction?				
a) Combination	b) Displacement	c) Decomposition	d) Redox				
<ul> <li>85. Following is the reactivity series in decreasing order of their reactivity -</li> <li>Magnesium &gt; Zinc &gt; Iron &gt; Lead &gt; Copper &gt; Silver &gt; Gold</li> <li>Which one of the following metals can displace copper from copper sulphate solution?</li> <li>a) Zn</li> <li>b) Ag</li> <li>c) Au</li> <li>d) None</li> </ul>							
<ul> <li>a) Zn</li> <li>b) Ag</li> <li>c) Au</li> <li>d) None</li> </ul> 86. The method that cannot be used for removing permanent hardness of water is <ul> <li>a) adding sodium carbonate</li> <li>b) distillation</li> <li>c) adding caustic soda</li> <li>d) Boiling</li> </ul>							
87. The hydronium a) H <sup>+</sup>	ion is b) HO <sup>-</sup>	c) H <sup>2+</sup>	d) H <sub>3</sub> O <sup>+</sup>				
<ul><li>88. Formalin is :</li><li>a) 60 % formic acid</li><li>c) 60 % Acetic acid</li></ul>		-					
89. Which of the fo	llowing pairs are bivalen	t metals?					
a) Zn, Al	b) Fe, Al	c) Ca, K	d) Mg, Zn				
90. Which of the fo	llowing show variable va	llency?					
a) Mg	b) Zn	c)Fe	d) K				
91. The total number	er of covalent bonds in p	ropane is					
a) 6	b) 8	c) 10	d) None of these				
<b>10  </b> D a g a			EAD Truct Pangalara				

92. Which of the following compounds contain least number of oxygen in its molecules ?

- a) Nitric acid b) Sodium Carbonate
- c) Sulphuric acid d) Zinc oxide

93. The oxygen atom has 8 protons and 8 electrons. The oxide ion  $O^{2-}$  will have

- a) 8 protons and 6 electrons
- b) 6 protons and 8 electrons

c) 8 protons and 10 electrons

d) 8 protons and 16 electrons

94. The total number of atoms present in 3 moles of water is

a) $6.02 \times 10^{23}$	b) 3 x 10 <sup>23</sup>	c) 1.806 x 10 <sup>24</sup>	d) $12.04 \times 10^{24}$
	- /		

95. Which of the following statements is wrong about alkynes?

a) They have general formula C<sub>n</sub>H<sub>2n-2</sub>

b) They have carbon – carbon triple bond

c) They have general formula  $C_{n}H_{2n}$ 

d) The first member is ethyne

# Part 5: BIOLOGY

96. A cross is made between true breeding tall and dwarf pea plants, in F<sub>1</sub> generation all plants appear tall. Up on selfing F<sub>1</sub> hybrids in F<sub>2</sub> generation, both tall and dwarf plants appear. Which principle of inheritance is explaining this genetic phenomenon is

- a. Law of dominance
- b. Law of segregation
- c. Law of unit character
- d. Law of independent assortment.
- 97. Cold treatment given to the seeds for the induction of early flowering is
  - a. Photoperiodism
  - b. Vernalization
  - c. Photorespiration
  - d. Cryopreservation
- 98. Light reaction of photosynthesis occurs in grana of chloroplast and it results in formation of following assimilatory powers is
  - a. ATP
  - b. NADPH +  $H^+$
  - c. O2
  - d. Both a and b

99. Which of the following acts as antitranspirant

- a. Gibberalic acid
- b. Auxin
- c. Ethylene
- d. Phenyl mercuric acetate

100.

- The RQ value becomes one when
- a. Oxygen consumed more than  $CO_2$  evolved.
- b. Oxygen consumed less than CO<sub>2</sub> evolved.
- c. Oxygen consumed equals to CO<sub>2</sub> evolved.
- d. Respiration stops.
- 101. Causative agent for tuberculosis is
  - a. Mycobacterium leprae
  - b. Mycobacterium tuberculosis
  - c. Yersinia pestis
  - d. Vibrio cholera

102. If DNA contains 15% Adenine find out the percentage of C+G

- a. 15%
- b. 70%
- c. 35%
- d. 20%

103. What happens when RBCs are kept in distilled water

- a. Swelling due to endosmosis and finally burst
- b. Swelling due to endosmosis but do not burst
- c. No change at all
- d. RBC undergoes shrinking
- 104. G.J. Mendel conducted experiments upon
  - a. Allium cepa
  - b. Drosophilia melanogaster
  - c. Pisumsativum
  - d. Cucurbitapepo

 105.
 If both sperm and ovum contain 7 chromosomes, the resulting embryo contains chromosomes.

- a. 7
- b. 3.5
- c. 14
- d. 7.5

106. Which of the following are the symptoms of diabetes mellitus

- a. Polyurea
- b. Glycosurea
- c. Ketonurea
- d. All of these

107. Which of the following are responsible for acid rain

- a.  $CO_2$
- b. CO
- $c. \quad NO_2$
- d. CH<sub>4</sub>

a. Insulin

- b. Parathormone
- c. Thyrosine
- d. Thyroxine

#### 109. Saliva contains \_\_\_\_\_\_ enzymes

- a. Ptyalin
- b. Pepsin
- c. Rennin
- d. Trypsin

#### 110. Milk teeth contain total \_\_\_\_\_ teeth

- a. 10
- b. 25
- c. 20
- d. 32

111. During which stage of cell division crossing over occurs

- a. Zygotene
- b. Pachytene
- c. Diplotene
- d. Leptotene

112. The valve present in human heart between Right Atrium and Right Ventricle is

- a. Bicupsid
- b. Semilunar
- c. Tricusid
- d. Eustachian
- 113. Programmed cell death is called
  - a. Endocytosis
  - b. Apoptosis
  - c. Phagocytosis
  - d. Pinocytosis

114. The normal blood pressure is 120/80 mmHg. The normal pulse pressure is

- a. 40 mmHg
- b. 200 mmHg
- c. 1.5 mmHg
- d. 9600 mmHg

115. During which stage of cell division centromere splits

- a. Metaphase
- b. Telophase
- c. Prophase
- d. Anaphase

- 116. Root hairs are
  - a. Unicellular
  - b. Multicellular
  - c. Binucleated
  - d. Multinucleated

117. Antimicrobial activity in tears is due to which enzyme

- a. Pepsin
- b. Lysozyme
- c. None of these
- d. Trypsin
- 118. Maintenance of body posture is due to which part of the brain
  - a. Hypothalamus
  - b. Cerebrum
  - c. Cerebellum
  - d. Medulla

### 119. The ability of a single plant cell to develop into a whole plant is called

- a. Pluripotency
- b. Totipotency
- c. Unipotent
- d. All of these

#### 120. Which blood group lacks blood antigens

a. A b.B c.AB d. O

-----End of Question Paper-----