

FIITJEE INTERNAL TEST

8TH CLASS

PHASE TEST - I

07 JUNE 2020

MAT & SAT

Time: 3 hours

Max. Marks:125

INSTRUCTIONS

Question Paper contains 125 questions.

Question paper consists of 5 parts (IQ , Maths, Physics, Chemistry & Biology).

Each question has 4 options with one correct answer. Bubbling of correct answer must be done on OMR Sheet.

Each question carries 1 mark. There is no negative marking.

HONESTY IS THE BEST POLICY. FINALLY HONESTY ONLY WINS. SO NEVER INVOLVE IN MALPRACTICE

IQ

Directions (Questions 1-3): In the following questions, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern.

1. 121, 225, 361, _____
(A) 441 (B) 484 (C) 529 (D) 729
2. 0.5, 0.55, 0.65, 0.8, _____
(A) 0.9 (B) 0.82 (C) 1 (D) 0.95
3. $11\frac{1}{9}, 12\frac{1}{2}, 14\frac{2}{7}, 16\frac{2}{3},$ _____
(A) $8\frac{1}{3}$ (B) $9\frac{1}{11}$ (C) 10 (D) 20
4. Which of the following will not be number of the series 1, 8, 27, 64, 125,?
(A) 256 (B) 512 (C) 729 (D) 1000

Directions (Questions 5-7): In each of the following questions, one term in the number series is wrong. Find out the wrong term.

5. 10, 26, 74, 218, 654, 1946, 5834
(A) 26 (B) 74 (C) 218 (D) 654
6. 1, 5, 9, 16, 25, 37, 49
(A) 9 (B) 15 (C) 25 (D) 37
7. 105, 85, 60, 30, 0, - 45, - 90
(A) 105 (B) 60 (C) 0 (D) - 45

Directions (Questions 8-9): In each of the following questions, two terms have been put within brackets. Mark your answer as

- (A) if both bracketed terms are right
- (B) if first bracketed term is right, second is wrong
- (C) if first bracketed term is wrong, second is right
- (D) if both bracketed terms are wrong

8. 3, 10, 29, (66), (127), 218
9. (2), 5, (12), 25, 41, 61

Directions (Questions 10-13): Here, various terms of a letter series are given with one term missing. Choose the missing term.

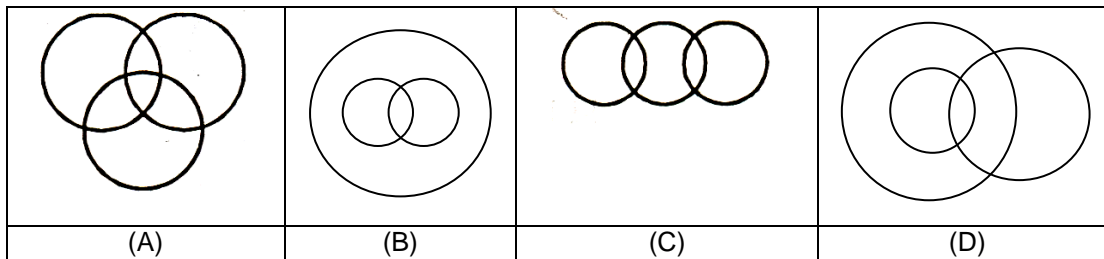
10. b e d f __ h j __ l
(A) i m (B) m i (C) i n (D) j m
11. AZ, GT, MN, __, YB
(A) KF (B) RX (C) SH (D) TS
12. __, siy, oeu, kaq, gwm, eri
(A) wnc (B) wnb (C) vnc (D) wmc
13. AYD, BVF, DRH, ____, KGL
(A) FMI (B) GMJ (C) HLK (D) GLJ

14. Find the wrong term in the given letter-number series given below:
G4T, J10R, M20P, P43N, S90L
(A) G4T (B) J10R (C) P43N (D) S90L

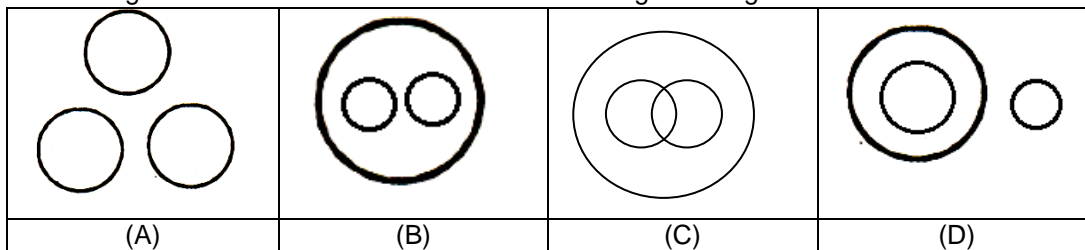
Directions (Questions 15-17): Some of the letters are missing which are given in the order. Choose the correct alternatives.

15. abb _ baa _ a _ bab _ aba
(A) abba (B) abab (C) ccac (D) aabb
16. c _ baa _ aca _ cacab _ acac _ bca
(A) acbaa (B) bbcaa (C) bccab (D) cbaac
17. mnonopqopqrs _ _ _ _ _
(A) mnopq (B) oqrst (C) pqrst (D) qrstu
18. How many 7's are there in the following series which are preceded by 6 which is not preceded by 3?
8 7 6 7 8 6 7 5 6 7 9 7 6 1 6 7 7 6 8 8 6 9 7 6 8 7
(A) 0 (B) 1 (C) 2 (D) 3
19. In the series, how many pairs of alternate numbers have a difference of 2?
6 4 1 2 2 8 7 4 2 1 5 3 8 6 2 1 7 1 4 1 3 2 8 6
(A) 1 (B) 2 (C) 3 (D) 4
20. How many numbers amongst the numbers 9 to 54 are there which are exactly divisible by 9 but not by 3?
(A) 8 (B) 6 (C) 5 (D) nil
21. A number is greater than 3 but less than 8. Also, it is greater than 6 but less than 10, the number is
(A) 6 (B) 9 (C) 7 (D) 8
22. If position of 1st and 6th (sixth) digits of a sequence of numbers 8903214675 are interchanged, the second and seventh and so on, which number would be 7th from right end?
(A) 2 (B) 6 (C) 7 (D) 8 (E) 9
23. Aruna ranks twelfth in a class of forty-six. What will be her rank from the last?
(A) 33 (B) 34 (C) 35 (D) 37
24. Ravi is 7 ranks ahead of Sumit in a class of 39. If Sumit's rank is seventeenth from the last, what is Ravi's rank from the start?
(A) 14 (B) 15 (C) 16 (D) 17
25. If Atul finds that he is twelfth from right in a line of boys and fourth from the left, how many boys should be added to the line such that there are 28 boys in the line.
(A) 12 (B) 13 (C) 14 (D) 20
26. In a queue of children, Kashish is fifth from left and Mona is sixth from the right. When they interchange their positions, Kashish becomes thirteenth from left. Then, what will be Mona's position from the right?
(A) 4 (B) 8 (C) 14 (D) 15
27. If the day before yesterday was Thursday, when will Sunday be?
(A) Today (B) Two days after today
(C) Tomorrow (D) Day after tomorrow
28. Mohini went to the movie nine days ago. She goes to the movies only on Thursday. What day of the week is today?
(A) Thursday (B) Saturday (C) Sunday (D) Tuesday

29. In a row of 10 boys, when Rohit was shifted by 2 places towards left, he became 7th from left end. What was his earlier position from right end?
 (A) 1st (B) 2nd (C) 4th (D) 6th
30. Ajay left home for the bus stop 15 minutes earlier than usual. It takes 10 minutes to reach the stop. He reached the stop at 8:40 am. What time does he usually leave home for the bus stop?
 (A) 8:30 am (B) 8:45 pm (C) 8:55 am (D) none of these
31. In a row of trees, one tree is 5th from either end of the row. How many trees are there in the row?
 (A) 8 (B) 9 (C) 10 (D) 11
32. Standing on a platform, Amit told Sunita that Aligarh was more than 10 km but less than 15 km from there. Sunita knew that it was more than 12 km but less than 14 km from there. If both of them were correct, what could be the distance of Aligarh from the platform?
 (A) 11 km (B) 12 km (C) 13 km (D) 14 km
33. Raman ranks 16th from top and 49th from bottom in a class. How many students are there in the class?
 (A) 64 (B) 65 (C) 66 (D) none of these
34. In a row of 21 girls, when Mounika was shifted by 4 places towards the right, she became 12th from left end. What was her earlier position from right end of the row?
 (A) 9th (B) 10th (C) 14th (D) 12th
35. Which one of following figures correctly represent relationship between – Tennis fans, cricket players, students.

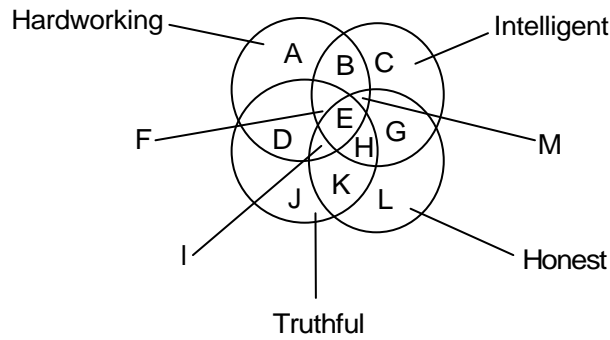


Directions (Questions 36-40): Using the relationship between these given classes, match given questions with the most suitable diagram. Give the answer as the letter denoting that diagram.



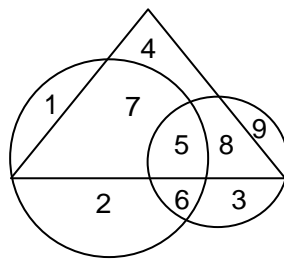
36. Whales, Fish, Crocodiles
37. Plums, Tomatoes, Fruits
38. Uncles, Parents, Friends
39. Sea, Island, Mountain
40. Rohtak, Haryana, Punjab

Directions (Questions 41-45): Given four intersecting circles, each representing a group of persons having quality written. Study the figure and answer the questions.



41. The region which represents people who are intelligent, honest, truthful but not hard working _____
 (A) E (B) F (C) H (D) I
42. People possessing all quantities _____
 (A) I (B) H (C) F (D) E
43. People who not not honest but possess all other 3 qualities, _____
 (A) B (B) D (C) F (D) I
44. People who are not hardworking, intelligent, truthful.
 (A) G (B) H (C) K (D) L
45. People not honest, and truthful but are hardworking and intelligent both, _____
 (A) E (B) B (C) M (D) I

Directions (Questions 46-50): For the data given, triangle represents female graduates, small circle represents self employed females, big circles represents self employed females with bank loan facility. Answer the following questions:



46. How many female graduates are self employed?
 (A) 12 (B) 13 (C) 15 (D) 20
47. How many female graduates are not self employed?
 (A) 4 (B) 10 (C) 12 (D) 15
48. How many non-graduate females are self employed.
 (A) 9 (B) 11 (C) 12 (D) 21
49. How many self employed female graduates are with bank loan facility?
 (A) 5 (B) 7 (C) 12 (D) 20
50. How many non graduate self employed females are with bank loan facility?
 (A) 3 (B) 8 (C) 9 (D) 12

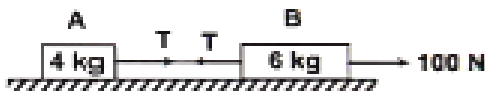
MATHS

51. How many perfect cubes are present between 1 to 500
 (A) 5 (B) 6 (C) 7 (D) 8
52. The value of $\sqrt{1+2008\sqrt{1+2009\sqrt{1+2010\sqrt{1+2011\times 2013}}}}$
 (A) 2008 (B) 2009 (C) 2010 (D) 2013
53. If $\frac{5}{\sqrt{7+3\sqrt{x}}} = \sqrt{7-3\sqrt{x}}$ then $x =$ _____
 (A) $\frac{8}{3}$ (B) $\frac{7}{3}$ (C) $\frac{5}{3}$ (D) $\frac{2}{3}$
54. $\sqrt[3]{x^{18}y^{-12}z^4} =$ _____
 (A) $x^6y^{-4}z^4$ (B) $x^6y^4z^{4/3}$ (C) $x^6y^{-4}z^{4/3}$ (D) Not exist
55. If $\sqrt{1+\frac{x}{169}} = \frac{14}{13}$ then $\frac{1}{x} =$ _____
 (A) $\frac{1}{27}$ (B) 13 (C) 27 (D) 14
56. Find the least number which must be added for 306452 to make a perfect square
 (A) 454 (B) 464 (C) 460 (D) 474
57. $\frac{\sqrt{59.29} - \sqrt{5.29}}{\sqrt{59.29} + \sqrt{5.29}} =$ _____
 (A) 0.56 (B) 0.59 (C) 0.48 (D) 0.54
58. If $1^3 + 2^3 + 3^3 + \dots + n^3 = 44100$ then $n =$ _____
 (A) 20 (B) 55 (C) 100 (D) 25
59. Given $\sqrt{1936} = 44$ then $\sqrt{19.36} + \sqrt{0.1936} + \sqrt{0.001936} + \sqrt{0.0001936} =$ _____
 (A) 48.84 (B) 4.884 (C) 488.4 (D) 0.4884
60. Solving $0.2x + 0.4 = 0.3x + 0.9$, we get value of 'x' is _____
 (A) -5 (B) 3 (C) 4 (D) 5
61. Which of the following is not correct?
 (A) $86 + 7 + 5 + 4 - 3 + 2 - 1 = 100$ (B) $8 \times 7 + 6 \times 5 \times 4 \times 2 - 3 + 1 = 100$
 (C) $86 + 7 \times 2 - 9 + 5 + 3 + 1 = 100$ (D) $123 + 4 - 5 - 67 - 89 = 100$
62. What is rational form of $0.\overline{54} + 4.\overline{7}$?
 (A) $\frac{527}{99}$ (B) $\frac{525}{99}$ (C) $\frac{524}{99}$ (D) $\frac{526}{99}$

63. It is given that $5\frac{3}{a} \times b\frac{1}{2} = 19$ (where the two fractions are mixed fractions then $a + b =$ _____
(A) 15 (B) 10 (C) 9 (D) 12
64. What is the length of a side of a square play ground whose area is equal to the area of a rectangular field of dimensions 72 m & 338 m
(A) 156 m (B) 154 m (C) 56 m (D) 176 m
65. Seema present age is 4 times her daughter's age. After 20 years, she will be twice her daughter's age. The present age of her daughter _____
(A) 40 (B) 10 (C) 50 (D) 20
66. If $8x - 3 = 2x + 15$ then $x =$ _____
(A) 3 (B) 5 (C) 20 (D) 8
67. If $\frac{x-b-c}{a} + \frac{x-c-a}{b} + \frac{x-a-b}{c} = 3$ then $x =$ _____ (a, b, c are positive integers)
(A) abc (B) $ab + bc + ca$ (C) $a + b + c$ (D) $3abc$
68. Denominator is 5 more than twice of numerator then fraction is _____
(A) $\frac{5x}{2x+5}$ (B) $\frac{x}{2x+5}$ (C) $\frac{2x}{5}$ (D) $\frac{2x+5}{5}$
69. The equivalent rational number $\frac{-7}{9}$ is _____
(A) $\frac{-21}{18}$ (B) $\frac{-63}{81}$ (C) $\frac{-14}{9}$ (D) $\frac{-49}{81}$
70. Rational number $\frac{8}{3}$ can lies between _____
(A) 2 and 3 (B) 3 and 4 (C) 4 and 5 (D) 5 and 6

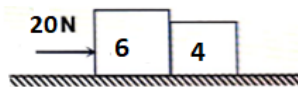
PHYSICS

71. A constant force of 200N acts on a body for 4 sec for changing its momentum. The change of momentum of the body in $\text{kg}\frac{\text{m}}{\text{s}}$
(A) 400 (B) 800 (C) 200 (D) 100
72. If the pressure due to a force of 500 N on the tip of a nail is $4 \times 10^6 \text{ Pa}$, then find the pressure if the same force is applied on 100 such identical nails simultaneously
(A) $6 \times 10^4 \text{ Pa}$ (B) $4 \times 10^5 \text{ Pa}$ (C) $4 \times 10^4 \text{ Pa}$ (D) $6 \times 10^5 \text{ Pa}$
73. The pressure at any point in a liquid at rest depends only on the depth and on the ____ of the liquid
(A) density (B) temperature (C) colour (D) none of these
74. At high altitudes the air pressure (as compared to pressure on the surface of the earth) is
(A) less (B) more (C) same (D) none of these
75. A force of 10 N acts on a body of mass 5 Kg for 4 s. Assuming the body to be initially at rest, find the velocity of the body when force stops acting?
(A) 4 m/s (B) 8m/s (C) 12 m/s (D) 0 m/s
76. A feather of mass 10 g is dropped from a height. It is found to fall down with a constant velocity. What is the net force acting on it?
(A) 10 N (B) 100 N (C) 0.1 N (D) 0 N
77. Calculate the pressure at a depth of 20 m in a liquid of density 1200 Kg/m^3 . Take $g = 10 \text{ m/s}^2$
(A) $2.4 \times 10^5 \text{ Pa}$ (B) $1 \times 10^5 \text{ Pa}$ (C) $5 \times 10^5 \text{ Pa}$ (D) $1 \times 10^4 \text{ Pa}$
78. A man weighing 1000 N exerts a pressure of 10^3 N/m^2 on the floor of his drawing room. Calculate his area of contact with the floor of his drawing room
(A) 5 m^2 (B) 2 m^2 (C) 1 m^2 (D) 10 m^2
79. Newton's first law of motion is known as
(A) law of momentum (B) law of force (C) law of inertia (D) law of energy
80. Choose the right answer.
If A and B are two objects with masses 8 kg and 20 kg respectively, then
(A) A has more inertia than B (B) B has more inertia than A
(C) A and B have the same inertia (D) none of the two has inertia
81. Two forces 15 N and 8 N act upon a body. The resultant force on the body has a maximum value of
(A) 4 N (B) 0 N (C) 7 N (D) 23 N
82. Two masses A and B measuring 4 kg and 6 kg are connected by a string. If a force of 100 N is applied on the bigger weight, the tension shown in the figure is



- (A) 20 N (B) 80 N (C) 40 N (D) 60 N

83. A force of 6 N acts on a body at rest and mass 1 kg. During this time, the body attains a velocity of 18 m/s. The time for which the force acts on the body is
(A) 10 s (B) 8 s (C) 7 s (D) 3 s
84. The engine of a car produces an acceleration of 6m/s^2 in the car. If the car pulls a block of double of its mass, then the acceleration would be
(A) 6m/s^2 (B) 12m/s^2 (C) 2m/s^2 (D) 1.5m/s^2
85. Atmospheric pressure is nearly 100 kPa. What is the force does the air in a room exert on one side of the window of dimension 60 cm x 70 cm?
(A) 42 N (B) 42 kN (C) 420 N (D) 4200 N
86. The pressure at the bottom of a tank containing a liquid does not depend on
(A) Acceleration due to gravity (B) Height of the liquid column
(C) Area of the bottom surface (D) Nature of the liquid
87. Of the following which is correct
(A) $P = \frac{F}{A}$ (B) $P = \frac{A}{F}$ (C) $A = PF$ (D) $F = \frac{P}{A}$
88. A tank 5 m high is filled with water upto 3m then the rest 2m is filled with oil of density 850 Kg/m^3 . The pressure at the bottom of the tank due to these liquids is?
(take $g = 10\text{m/s}^2$, density of water = 1000 Kg/m^3)
(A) 470 Pa (B) 47000 Pa (C) 300 Pa (D) 30000 Pa
89. Two blocks of masses 6 Kg and 4 Kg are acted upon by a force of 20 N on the 6 Kg block as show in the figure. Neglecting friction everywhere, find the normal force acting between the blocks.



- (A) 16 N (B) 20 N (C) 8 N (D) 10 N
90. Which of the following statement is true for action and reaction forces? They:
(A) Act on one body (B) Have equal magnitude
(C) Act in the same direction (D) All of the above

CHEMISTRY

91. X is most abundant metal in the earth crust. It is used as reducing agent in thermit process. The important ore of X is
 (A) Calamine (B) Hematite (C) Galena (D) Bauxite
92. What will be the valency of an element with atomic number 17?
 (A) 1 (B) 2 (C) 3 (D) 4
93. Which of the following is not the property of synthetic fibre?
 (A) hydrophobic (B) hydrophilic
 (C) melt before burning (D) produce static electricity
94. Which of the following is a homopolymer.
 (A) Nylon-6,6 (B) Buna-N (C) Teflon (D) PET
95. Formula of sodium carbonate is
 (A) Na_2CO_3 (B) NaCO_3 (C) Na_3CO_3 (D) $\text{Na}(\text{CO}_3)_2$
96. When metals react with dil acids the gas evolved is
 (A) oxygen (B) carbon dioxide (C) hydrogen (D) carbon monoxide
97. A metal 'M' exist as sulphide ore. The ore is subjected to auto reduction. 'M' exist as liquid at room temperature. Identify M.
 (A) Cu (B) Hg (C) Ag (D) Au
98. Non metal used in disinfection of water is
 (A) sulphur (B) phosphorous (C) iodine (D) chlorine
99. Thermoplastic is
 (A) not recyclable (B) good conductor of electricity
 (C) linear polymers (D) corrode easily
100. $\text{N}_2 + \text{H}_2 \rightarrow \text{NH}_3$
 Find the suitable numbers to balance the above equation.
 (A) 2, 1, 2 (B) 1, 2, 2 (C) 2, 3, 2 (D) 1, 3, 2
101. If x^{+2} ion has 18 electrons atomic number of x will be
 (A) 20 (B) 18 (C) 22 (D) 16
102. Molecular mass of NH_3 is _____ (in amu) [given atomic mass of N = 14 amu, atomic mass of H = 1 amu]
 (A) 10 (B) 15 (C) 17 (D) 19
103. Bakelite is condensation polymer of
 (A) formaldehyde and phenol (B) formaldehyde and urea
 (C) phenol and urea (D) formaldehyde and glycol

104. The non metal stored in water to prevent it from reaction with oxygen is
(A) C (B) P (C) S (D) I
105. Which of the following is termed as artificial wool?
(A) Nylon-6 (B) Rayon (C) Spandex (D) Acrylic
106. Roasting is done for
(A) sulphide ore (B) carbonate ore (C) oxide ore (D) halide ore
107. Vulcanization is done for
(A) fibres (B) blend fibres (C) plastics (D) natural rubber
108. Al cannot displace metal from
(A) FeSO_4 (B) MgSO_4 (C) ZnSO_4 (D) CuSO_2
109. The thermosetting plastic used for Firemen Cloths is
(A) Bakelite (B) Polystyrene (C) Melamine (D) Polyvinylchloride
110. The element which cannot exhibit malleable or ductile property is
(A) aluminium (B) iodine (C) copper (D) silver

BIOLOGY

111. In which crop seedling transplantation is used?
 (A) Jowar (B) Bajra (C) Paddy (D) Pea
112. Weeding is done by using a
 (A) sickle (B) plough (C) harrow (D) thresher
113. Which of the following is meant for both harvesting and threshing?
 (A) sickle (B) harvester (C) combine (D) all of these
114. Which of the following is the source of potassium for the crop?
 (A) KCl (B) Urea (C) NPK (D) both (A) and (C)
115. Growing and production of flowering plants and vegetables come under
 (A) horticulture (B) agriculture (C) floriculture (D) none of these
116. Match the following
- | Column I | Column II |
|------------------|-------------------------|
| i. logging | a. crop protection |
| ii. weeding | b. irrigation |
| iii. fertilizers | c. excessive irrigation |
| iv. drip method | d. chemical nutrients |
| v. clover | e. Rabi crop |
| vi. paddy | f. Kharif crop |
- (A) i-c, ii-a, iii-d, iv-b, v-e, vi-f (B) i-f, ii-e, iii-d, iv-b, v-a, vi-c
 (C) i-c, ii-a, iii-b, iv-d, v-e, vi-f (D) i-c, ii-a, iii-d, iv-b, v-f, vi-e
117. Compost is produced using
 (A) Farmyard manure and green manure (B) farm and household refuse
 (C) organic remains of biogas plant (D) rotten vegetables and animal refuse
118. Which of the following is not a viral disease?
 (A) common cold (B) typhoid (C) measles (D) polio
119. Nostoc is
 (A) photosynthetic (B) non-photosynthetic (C) an alga (D) both (A) and (C)
120. Which of the following is added in powder form in the preparation of dhokla?
 (A) protozoa (B) fungi (C) algae (D) virus
121. Which is not an antibiotic?
 (A) aspirin (B) penicillin (C) streptomycin (D) tetracycline
122. Bacteria were discovered by
 (A) Leeuwenhoek (B) Iwanosky (C) Pasteur (D) Stanley
123. Louis Pasteur contributed for
 (A) anti-rabies vaccine (B) fermentation
 (C) disproving abiogenesis theory (D) all of these
124. Virus that infects bacteria is
 (A) TMV (B) retrovirus
 (C) Soybean mosaic virus (D) bacteriophage
125. Protein coat of a virus is
 (A) capsid (B) envelope (C) plasmid (D) none

❖ *Wish you all the best* ❖