



# M.M. MEMORIAL PUBLIC SR. SEC. SCHOOL

## GLOBAL TALENT SEARCH EXAMINATION # 5

### GTSE # 5 (2024)

#### Pre Nurture & Career Foundation Courses

**Time: 3 Hrs.**

**Maximum Marks: 600**

Name of the Candidate .....

Class :- 8th

Reg. No. : GTS/.....

Examination Centre: .....

#### Instructions for the candidate :

**Please read the following instructions carefully before opening the Question Booklet :**

1. This Question Booklet consists of 150 questions. Subject wise Serial Order of the questions is as following :

Question No.	Subject
1 – 20	– English
21 – 70	– Mathematics
71 – 90	– Physics
91 – 110	– Chemistry
111 – 130	– Biology
131 – 150	– Mental Ability

2. Each multiple choice question has four options namely (A), (B), (C) and (D). Out of which only ONE option is correct (except MSQs). Each correct answer earns a credit of **4 marks**. A wrong answer carries a penalty of – 1 mark as negative marking.

3. Use black or blue ball point pen only on OMR sheet. Use of pencil is strictly prohibited.

4. Folding, damaging or leaving any identifiable mark on the OMR sheet is strictly prohibited.

5. No Candidate should possess any document other than Admit Card and Photo Identity Card.

6. Candidate may take Question Booklet with him/her only after handing over OMR sheet to invigilating staff.

7. Rough work should be done on the blank space provided on each page of the booklet.

8. For the given 4 alternative, choose only one alternative (except MSQ's) and dark the selected circle properly as



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## ENGLISH

**Question No. 1 to 4 are of Assertion and Reason type questions. Each question consists of two statements namely; Assertion (A) and Reason (R) :**

**1. Assertion :** We focus on the action rather than the doer in passive voice.

**Reason :** In passive voice what is being done is important than who is doing.

(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.

(B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).

(C) Assertion (A) is true and Reason (R) is false.

(D) Assertion (A) is false and Reason (R) is true.

**2. Assertion :** Positive degree is used to tell us the existence of quality.

**Reason :** Positive degree only used to compare things.

(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.

(B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).

(C) Assertion (A) is true and Reason (R) is false.

(D) Assertion (A) is false and Reason (R) is true.

**3. Assertion :** The subject is what the sentence is about.

**Reason :** The predicate explains what the subject is doing.

(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.

(B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).

(C) Assertion (A) is true and Reason (R) is false.

(D) Assertion (A) is false and Reason (R) is true.

**4. Assertion :** Modals show mood of the speaker.

**Reason :** Only single type of modal can express a particular feeling.

(A) Both Assertion (A) and Reason (R) are true and R is the correct explanation of A.

(B) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).

(C) Assertion (A) is true and Reason (R) is false.

(D) Assertion (A) is false and Reason (R) is true.

**Q.5 to 8 are Comprehension Type Questions**

**Read the passage given below and answer the questions that follow :**

It has been a widespread view that life (5) \_\_\_\_\_ in the sea. Charles Darwin was the first to challenge this view. He suggested that life on earth originated on land in a 'warm little pond' and not in the oceans.

**5. (A) originate (B) originated (C) originating (D) None of these**

**6. Antonymous of 'Challenge':**

(A) Protest (B) Objection  
(C) Acceptance (D) All of these

**7. 'Life' is \_\_\_\_\_ noun.**

(A) Common (B) Collective  
(C) Proper (D) None of these

**8. Correct sequence of 'warm little pond' is \_\_\_\_\_ .**

(A) Adverb Adjective Noun  
(B) Adverb Preposition Noun  
(C) Adjective Adjective Noun  
(D) Adverb Adjective Interjection

**Q.No. 9 to 16 are SCQ's (Single Choice Questions):**

**9. Which part of the following sentence has an error :**

(A) When I arrive  
(B) at the station yesterday  
(C) she was waiting for me.  
(D) No error

\*\*\*\*\*ROUGH WORK\*\*\*\*\*

10. This isn't \_\_\_\_\_ book. It must be \_\_\_\_\_ .  
 (A) my/yours (B) your/she  
 (C) his/her (D) her/me
11. Are you afraid of \_\_\_\_\_ him? Not \_\_\_\_\_ bit.  
 (A) the/a (B) -/a  
 (C) -/- (D) the/-
12. He \_\_\_\_\_ never \_\_\_\_\_ him sing.  
 (A) had - heard (B) have - heard  
 (C) has - heard (D) was - hearing
13. \_\_\_\_\_ I trouble you for a moment? - Yes, certainly.  
 What \_\_\_\_\_ I do for you?  
 (A) Can / might (B) Could / may  
 (C) Must / may (D) May / can
14. Ask him \_\_\_\_\_.  
 (A) how old is he (B) how old he is  
 (C) how old he has (D) None of these
15. Don't touch the door, it \_\_\_\_\_ just \_\_\_\_\_.  
 (A) is / being painted (B) has / been painted  
 (C) is / painted (D) will / be painted
16. Identify the modal auxiliary used to express a strong possibility or probability:  
 (A) might (B) could  
 (C) must (D) would

**Q.17 to 20 are MSQs (Multiple Selection Questions) :**

17. It's \_\_\_\_\_ pity that \_\_\_\_\_ birthday comes only once \_\_\_\_\_ year.  
 (A) a/him/a (B) a/his/a  
 (C) a/my/a (D) an/hers/the
18. Find out **the error part/s** :  
 He /(A) has be suffering /(B) with flu /(C) since four days. /(D)  
 (A) He (B) has be suffering  
 (C) with flu. (D) since four days

19. He must participate \_\_\_\_\_ he will be fined.  
 (A) or  
 (B) but  
 (C) as  
 (D) otherwise
20. Find the **mis-spelt word/s**:  
 (A) Pursue (B) Persuit  
 (C) Persuade (D) All of these

### MATHEMATICS

**Direction:-** In the following question, the Assertion (A) and Reason (s) (R) have been put forward. Read both the Statements carefully and choose the correct alternative from the following:

21. Assertion (A):- The simple interest on Rs 2000 for 4 years is Rs 400. The rate percent of interest is 5%.  
 Reason (R):-  $\text{Rate} = (\text{Simple interest} \times 100) / (\text{Principal} \times \text{Time})$   
 (A) Both A and R are true and R is the correct explanation of A  
 (B) Both A R are true but R is not the correct explanation of A.  
 (C) A is true but R is false.  
 (D) A is false but R is true.
22. Assertion (A):- Getting a head or tail while tossing a coin once is a sure event.  
 Reason (R):-  $P(A) + P(\text{Not } A) = 0$ .  
 (A) Both A and R are true and R is the correct explanation of A  
 (B) Both A R are true but R is not the correct explanation of A.  
 (C) A is true but R is false.  
 (D) A is false but R is true.

\*\*\*\*\*ROUGH WORK\*\*\*\*\*

- 23.** Assertion (A) :-  $(y - 9)^2 = y^2 + 81 - 18y$   
Reason (R) :-  $(a-b)^2 = a^2 + b^2 - 2ab$ .  
(A) Both A and R are true and R is the correct explanation of A  
(B) Both A R are true but R is not the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.
- 24.** Assertion (A):- The marked price of a book is Rs 100. The shopkeeper gives 25% discount on it. 75 is the sale price of the book.  
Reason (R):- The price after the original price has been reduced by a discount is known as sale price.  
(A) Both A and R are true and R is the correct explanation of A  
(B) Both A R are true but R is not the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.
- 25.** Assertion (A):- The common factor of  $p^3q^4$  and  $p^4q^3$  is  $p^3q^3$   
Reason(R):- A common factor is a number that can be divided into two different numbers, without leaving a reminder.  
(A) Both A and R are true and R is the correct explanation of A  
(B) Both A R are true but R is not the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.
- 26.** Assertion (A):-  $0.000007$  is equal to  $7 \times 10^{-5}$   
Reason (R):- An exponent refers to the number of times a number is multiplied by itself.  
(A) Both A and R are true and R is the correct explanation of A  
(B) Both A R are true but R is not the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.
- 27.** Assertion (A):- The ratio of 50 paise to Rs. 1 is 1 : 2  
Reason (R):- A ratio can be defined as the relationship or comparison between two numbers of the same unit to check how bigger is one number than the other one  
(A) Both A and R are true and R is the correct explanation of A  
(B) Both A R are true but R is not the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.
- 28.** Assertion (A):-  $2x + 3y - 5$  is a binomial  
Reasons(R):- A binomial is an algebraic expression that has two non zero terms.  
(A) Both A and R are true and R is the correct explanation of A  
(B) Both A R are true but R is not the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.
- 29.** Assertion (A):- Ramesh rides his cycle at 6km/hr in order to reach school in 20 minutes. If he has to reach in 24 minutes, he should ride his cycle at 5km/ hr.  
Reason (R):- The quantities are directly related so  $20 \times 6 = 24 \times 5$ .  
(A) Both A and R are true and R is the correct explanation of A  
(B) Both A R are true but R is not the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.
- 30.** Assertion (A):- The floor of a room is a square of side 6m. Its height is 4m. The volume of the room is  $142m^3$   
Reason (R):- Volume is calculated by multiplying length x width x height  
(A) Both A and R are true and R is the correct explanation of A  
(B) Both A R are true but R is not the correct explanation of A.  
(C) A is true but R is false.  
(D) A is false but R is true.

\*\*\*\*\*ROUGH WORK\*\*\*\*\*



### Comprehension Type Questions

Read the following, information and answers the questions given below.

Direction:- There are trees in a farm. On the two trees, some birds are sitting in each of the two trees, The head of the birds of first tree says to 2nd trees bird's head, If I give you 6 birds from our group, then number of birds in two trees are equal and if you send only 2 birds to our group, then our group is twice in number of birds to your group. Among them  $\frac{1}{3}$  of total birds is young ones and other are adult one.

Now, On these information based, Answer the following Questions.

31. How many trees are in the farm?

- (A) 0 (B) 1  
(C) 2 (D) not defined

32. In the beginning, the ratio of birds in first tree to that of 2nd tree.

- (A) 5 : 3 (B) 3 : 5  
(C) 1 : 1 (D) None of these

33. How many total birds in the two trees?

- (A) 48 (B) 12  
(C) 30 (D) 18

34. Ratio of all adult birds to total birds in two trees.

- (A) 1 : 3 (B) 2 : 3  
(C) 3 : 2 (D) None of these

35. Ratio of young birds in first tree to adult birds in 2nd tree.

- (A) 5 : 6 (B) 6 : 5  
(C) 1 : 2 (D) 1 : 3

### Single choice questions (SCQs)

36. If  $x^2 - x - 42 = (x + k)(x + 6)$ , then K =

- (A) 6 (B) - 6 (C) 7 (D) - 7

37. If  $a + b + c = 10$  and  $a^2 + b^2 + c^2 = 36$  then

$ab + bc + ca =$  \_\_\_\_\_

- (A) 136 (B) 64 (C) 32 (D) 68

38. Mark ( $\checkmark$ ) against the correct answer:

$$3 + 23x - 8x^2 = ?$$

- (A)  $(1 - 8x)(3 + x)$  (B)  $(1 + 8x)(3 - x)$   
(C)  $(1 - 8x)(3 - x)$  (D) None of these

39. If 22 workers can complete a work in 6 days. How many days would be required for 15 workers to complete the same work'?

- (A) 4 days (B) 5 days  
(C) 7 days (D)  $8\frac{4}{5}$  days

40. On selling a chair for Rs. 720, a man loses 25%. To gain 25% it must be sold for:

- (A) Rs. 900 (B) Rs. 1200  
(C) Rs. 1080 (D) Rs. 1440

41. The smallest number by which 2560 must be multiplied so that the product is a perfect cube is:

- (A) 25 (B) 15 (C) 5 (D) 10

42. The area of a rhombus whose one diagonal is 8m and one side is 5m.

- (A)  $20m^2$  (B)  $40m^2$   
(C)  $24m^2$  (D) None of these

43. The factorization of  $4y^2 - 12y + 9$  is

- (A)  $(2y + 3)^2$  (B)  $(2y - 3)^2$   
(C)  $(3y + 2)^2$  (D)  $(3y - 2)^2$

44. Find the product of the  $\frac{4}{5}$  and the reciprocal of  $\frac{5}{8}$ .

- (A)  $\frac{32}{24}$  (B)  $\frac{31}{25}$  (C)  $\frac{32}{25}$  (D)  $\frac{22}{25}$

45. The value of  $x$  for which  $(\frac{7}{12})^{-4} \times (\frac{7}{12})^{3x} = (\frac{7}{12})^5$ , is:

- (A) -1 (B) 1 (C) 2 (D) 3

46. The area of a trapezium is  $40cm^2$ . Its parallel sides are 12cm and 8cm. The distance between the parallel sides is:

- (A) 1 cm (B) 2 cm (C) 3 cm (D) 4 cm

47. If the cost of 18 pens is Rs. 234, a dozen pen will cost.

- (A) Rs. 144 (B) Rs. 156  
(C) Rs. 192 (D) Rs. 180

\*\*\*\*\*ROUGH WORK\*\*\*\*\*

48. A farmer has food for 15 animals in his cattle which they can have for 9 days. If 12 more animals were added, how long would the food last?

- (A) 6 days (B) 5 days  
(C) 2 days (D) 1 day

49. A number exceeds 25% of itself by 60. The number is:

- (A) 75 (B) 45 (C) 80 (D) 65

50. What should be subtracted from  $-\frac{5}{4}$  to get  $-1$ ?

- (A)  $-\frac{1}{4}$  (B)  $\frac{1}{4}$  (C) 1 (D)  $-\frac{3}{4}$

51. The parallel sides of a trapezium are in the ratio 3 : 4 and the perpendicular distance between them is 12 cm. If the area of the trapezium is  $630\text{cm}^2$ , then its shorter of the parallel sides is:

- (A) 45 cm (B) 42 cm (C) 60 cm (D) 36 cm

52. If  $\frac{n}{2} - \frac{3n}{4} + \frac{5n}{6} = 21$ , then  $n = ?$

- (A) 30 (B) 42 (C) 36 (D) 28

53. If the angles of a triangle are in the ratio 2 : 3 : 4, then the difference between the greatest and smallest angles is:

- (A)  $40^\circ$  (B)  $20^\circ$  (C)  $10^\circ$  (D)  $30^\circ$

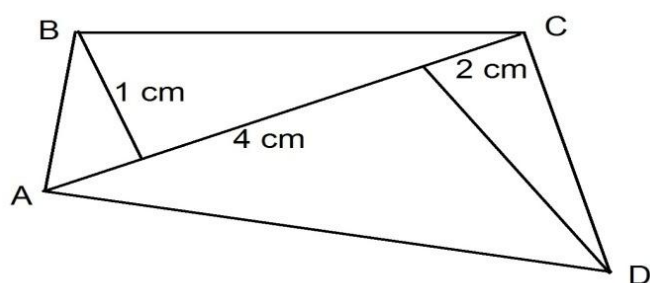
54. What is the total surface area of a cuboid of dimension 4 cm, 5 cm, & 6 cm?

- (a)  $142\text{cm}^2$  (B)  $144\text{cm}^2$   
(C)  $146\text{cm}^2$  (D)  $148\text{cm}^2$

55. A Regular Polygon has 35 diagonals. Find number of sides

- (A) 9 (B) 10 (C) 7 (D) 6

56. The area of the quadrilateral is:



- (A)  $6\text{cm}^2$  (B)  $12\text{cm}^2$  (C)  $3\text{cm}^2$  (D)  $8\text{cm}^2$

57. If  $3x - 7y = 10$  and  $xy = -1$  then the value of  $9x^2 + 49y^2$  is:

- (A) 58 (B) -104 (C) 104 (D)  $\frac{14}{2}$

58. If  $\frac{4x+8}{5x+8} = \frac{5}{6}$ , then  $x = ?$

- (A) 4 (B) 6 (C) 8 (D) 12

59. The sum that amounts to Rs. 4913 in 3 years at  $6\frac{1}{4}\%$  per annum compounded annually, is.

- (A) Rs. 3096 (B) Rs. 4076  
(C) Rs. 4085 (D) Rs. 4096

60. If 10 is added to four times a certain number, the result is 5 less than five times the number. The number is:

- (A) 10 (B) 20 (C) 15 (D) 25

#### Multiple Selection Questions (MSQs)

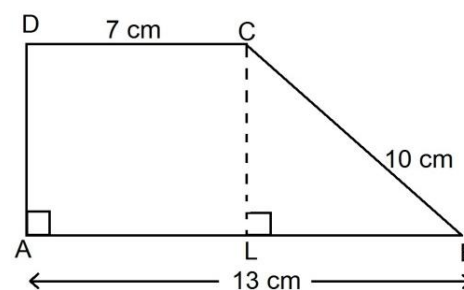
61. In what time will Rs. 1000 amount to Rs. 1331 at 10% p.a. in CI?

- (A) 3 years (B) 12 months  
(C) 36 months (D) 1 year

62. The factors of  $x^2 + xy + 8x + 8y$

- (A)  $(2x + 4)(x + 8)$  (B)  $(y + x)(8 + x)$   
(C)  $(x + y)(x - 8)$  (D)  $(x + y)(y + 8)$

63. In the given figure,  $AB \parallel DC$  and  $AD \perp AB$  if  $DC = 7\text{cm}$ ,  $BC = 10\text{cm}$ ,  $AB = 13\text{cm}$  and  $CL \perp AB$ , the area of trap. ABCD is:



- (A)  $84\text{cm}^2$  (B)  $0.8\text{ dm}^2$   
(C)  $80\text{cm}^2$  (D)  $84\text{ m}^2$

64. The difference between two whole numbers is 66. The ratio of the two numbers is 2 : 5. The two numbers are:

- (A) 110 and 44 (B) 40 and 100  
(C) 44 and 110 (D) 100 and 33

\*\*\*\*\*ROUGH WORK\*\*\*\*\*

65. The sum of the internal angles of a polygon is 10 right angle. Then the number of sides is:

- (A)  $\sqrt{81} - 2$  (B)  $\sqrt{4} + 3$   
(C) 7 (D)  $\sqrt{16} + 2$

66. The solution of  $\frac{x-5}{2} - \frac{x-3}{5} = \frac{1}{2}$

- (A)  $x = 8$  (B)  $x = \sqrt{4}$  (C)  $x = 2^3$  (D)  $x = 2^2$

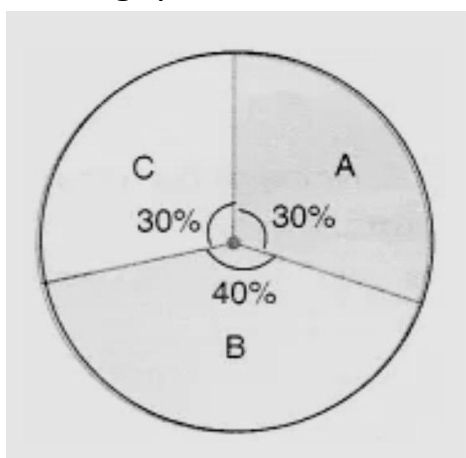
67. If  $x = 2, y = -1$  then the value of  $x^2 + 4xy + 4y^2$  is:

- (A) 0 (B)  $\sqrt{16} - 2$   
(C)  $\sqrt{256} - 4^2$  (D)  $\sqrt{25} - 4$

68. The multiplicative inverse of  $10^{-10}$

- (A)  $10^{-10}$  (B)  $10^{10}$  (C)  $\frac{1}{10^{-10}}$  (D)  $\frac{1}{10^{10}}$

69. Observe the pie chart given below and answer the following questions:



The central angle for sector B is:

- (A)  $108^\circ$   
(B)  $144^\circ$   
(C) Supplementary of  $36^\circ$   
(D) Complementary of  $54^\circ$

70. The denominator of rational number is greater than its numerator by 3. If 3 is subtracted from the numerator and 2 is added to its denominator the new fraction is  $\frac{1}{5}$ . Find the numerator.

- (A) 5 (B)  $\sqrt{25}$   
(C)  $\sqrt[3]{125}$  (D) 0.5

## PHYSICS

### Assertion/Reason questions (Q.71 to Q. 74)

**Directions:-** The questions from 71 to 74 below consist of an assertion and a Reason. Use the following key to choose the appropriate answer.

(A) Both A and R are True and R is the correct explanation of A.

(B) Both A & R are true but R is not the correct explanation of A

(C) A is true but R is false

(D) A is false but R is true

71. Assertion (A):- Tin cans, used for storing food, are made by electroplating tin on to iron.

Reason (R) :- Tin is more reactive than iron and it acts as a preservative.

72. Assertion (A) : The night bird owl can see very well in the night and but not during the day.

Reason (R) : The owl has a large cornea and a large pupil to allow more light in its eye. Also, it has on its retina a large number of rods and only a few cones.

73. Assertion (A) :- The eye cannot see the object at far distance

Reason (R) :- The comfortable distance at which eye can read the object is 25 cm

74. Assertion (A) :- Rainbow is the natural phenomenon of dispersion.

Reason (R) :- Rainbow consist of seven colours of light splitting into its colours.

### Comprehension Type Questions (Q.75 to Q.78)

**Directions :-** The questions from 75 to 78 have to be answered from following paragraph.

Sound plays an important role in our life. It is a form of energy which makes us hear. Vibrating objects produce sound. Vibration is the to and fro or back and forth movement of an objects. Sounds needs a medium to travel. Hence, It cannot travel in a vacuum.

\*\*\*\*\*ROUGH WORK\*\*\*\*\*

Human beings have a voice box or larynx which is present in their throat on the upper side of the windpipe. The larynx has two vocal cords which have a narrow slit between them so that air can pass through it. As the lungs throw the air out of the windpipe, it passes through the slit and hence allows the production of sound as the vocal cords start vibrating. Since sound travels in the form of waves, it is important to study about characteristics of waves. The three main properties of waves are Amplitude, frequency and time period.

The magnitude of disturbance in the medium on either side of the mean value is called as amplitude. Large the amplitude louder the sound. The number of oscillation/vibrations per second is called frequency, which is expressed in Hertz ( $H_z$ ). Time taken for one complete oscillation/ vibration is the time period.

**75.** Which part of the human throat is responsible for the voice produced by a human?

- |             |           |
|-------------|-----------|
| (A) Stomach | (B) Heart |
| (C) Larynx  | (D) Mouth |

**76.** The pitch of sound depends on

- |                |                       |
|----------------|-----------------------|
| (A) Frequency  | (B) Amplitude         |
| (C) Wavelength | (D) None of the above |

**77.** The to and fro or up and down movement of an object from its mean position:

- |                     |           |
|---------------------|-----------|
| (A) Oscillation     | (B) Speed |
| (C) Circular motion | (D) Force |

**78.** 1 hertz is equal to:-

- (A) 1 vibration per minute
- (B) 10 vibrations per minute
- (C) 60 vibrations per minute
- (D) 600 vibrations per minute

#### Single choice questions (Q. 79 to Q.86)

**79.** When a rubber sucker is pressed on a plane surface than it sticks to the surface because of:

- (A) Surface tension
- (B) The glue on it
- (C) The pressure of atmosphere acting on it
- (D) Gravitational force

**80.** Pure or distilled water is a

- (A) poor conductor of electricity
- (B) good conductor of electricity
- (C) both (A) and (B)
- (D) none of these

**81.** Match the following :-

List I

List II

- |  |                               |
|--|-------------------------------|
| 1. An electric bulb of electricity                             | (a) A good conductor          |
| 2. Depositing a thin layer of metal using electricity.         | (b) Anode                     |
| 3. Electrode that is joined with positive terminal of battery. | (c) Electroplating            |
| 4. Ordinary water.   | (d) Heating effect of current |

- (A) 1→d, 2→c, 3→b, 4→a
- (B) 1→d, 2→b, 3→c, 4→a
- (C) 1→a, 2→b, 3→c, 4→d
- (D) 1→b, 2→c, 3→d, 4→a

**82.** Waste from an electroplating factory must be disposed off :-

- (A) in the nearby river
- (B) in the nearby pond.
- (C) in the nearby cornfield
- (D) according to the disposal guidelines of waste management bodies

**83.** Limiting friction of a body depends on –

- (A) Area of contact of surfaces
- (B) The volume of the smaller body on larger surface
- (C) Nature of surfaces in contact
- (D) The periphery contact surfaces

**84.** Which one of the following forces always opposes motion

- (A) gravitational force
- (B) electrostatic force
- (C) muscular force
- (D) friction

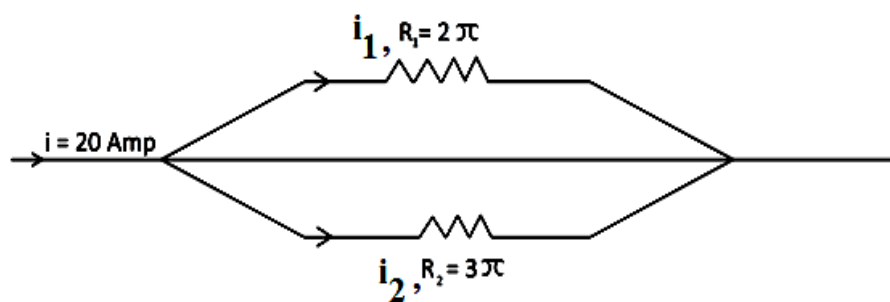
**85.** The frictional force on an object in a fluid depends on its \_\_\_\_\_ with respect to the fluid.

- |            |            |
|------------|------------|
| (A) speed  | (B) weight |
| (C) volume | (D) mass   |

\*\*\*\*\*ROUGH WORK\*\*\*\*\*



86. Find the current  $i_1$  and  $i_2$  respectively :-



- (A) 12, 8 Amp                      (B) 8, 10 Amp  
(C) 9, 11 Amp                    (D) 10, 12 Amp

**Multiple selection questions (Q.87 to Q.90)**

87. Minimum and maximum distance should be for clear vision of healthy eye

- (A) 100 cm                      (B) 25 cm  
(C) Infinite                    (D) 500 cm

88. A list of medium is given below. In which of these medium can sound travel

- (A) Wood                      (B) Water  
(C) Air                        (D) Vacuum

89. Which of the following statement are correct

- (A) Sound is produced by vibrations  
(B) Sound requires a medium for propagation.  
(C) Light and sound both require a medium for propagation  
(D) Sound travels slower than light

90. Choose the correct statement

- (A) The pitch of a sound depends on the frequency of vibration  
(B) If the frequency of vibration is low, the sound produced has a low pitch  
(C) If the frequency of vibrations is high, the sound produced has a high pitch.  
(D) None of the above is correct

**CHEMISTRY**

**Assertion/Reason questions**

Directions:- The questions from 91 to 94 below consist of an assertion and a Reason. Use the following key to choose the appropriate answer.

(A) Both A and R are True and R is the correct explanation of A.

(B) Both A & R are true but R is not the correct explanation of A

(C) A is true but R is false

(D) A is false but R is true

91. Assertion (A) :- Match stick does not catch fire on its own at room temperature

Reason (R) :- The head of the safety match contain only antimony trisulphide and potassium chlorate

92. Assertion (A):- The resources are present in unlimited quantity in nature and are not likely to be exhausted by human activities are called inexhaustible resources

Reason (R):- Forests, wildlife, minerals, etc are the examples of inexhaustible resources

93. Assertion (A):- Sodium chloride is a strong electrolyte –

Reason (R) :- Acetic acid is weak electrolyte

94. Assertion (A) – Fossil fuels cause air pollution

Reason (R):- Fossil fuels contain small amount of nitrogen and sulphur in it

**Comprehension type questions**

**Direction :** The following questions 95 to 98 have to be answered from the following paragraph.

Read the passage carefully and attempt the questions given below.

\*\*\*\*\*ROUGH WORK\*\*\*\*\*

The lowest temperature at which a substance catches fire is called its ignition temperature. The substance which have very low ignition temperature and can easily catch fire with a flame are called Inflammable substances. Example of Inflammable substance are petrol, alcohol, liquefied petroleum Gas (LPG) etc.

95. What are combustile substance?
- (A) Substance that undergoes combustion
  - (B) Substance react with ozone
  - (C) Substance that glows
  - (D) All of these
96. What are inflammable substances?
- (A) Substance with low ignition temperature
  - (B) Substances which catches fire easily with a flame
  - (C) The substances with high ignition temperature
  - (D) Both A and B
97. Rapid combustion occurs when:-
- (A) gas burns and produces heat and light
  - (B) material suddenly bursts into flames
  - (C) there is evolution of heat
  - (D) none of these
98. The products of combustion are:-
- (A) Oxygen & water
  - (B) Carbon dioxide and water
  - (C) Only Carbondioxide
  - (D) Only oxygen

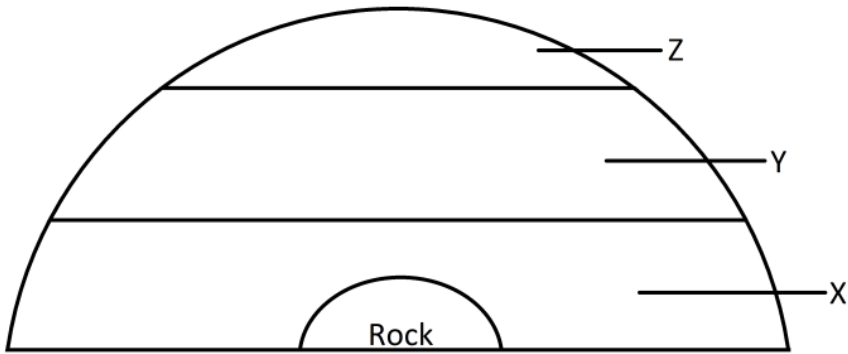
Single choice questions (Q.99 to Q.106)

99. The intensity of an earthquake is recorded with the help of
- (A) Seismograph
  - (B) map
  - (C) Electrodes
  - (D) Electrogram

100. Match the following items given in column ‘A’ with that in Column ‘B’

Column A	Column B
a. CNG	(1) Petroleum product
b. Petroleum	(2) Providing more heat on burning
c. Coke	(3) Non – polluting fuel
d. Bitumen	(4) Insoluble in water
e. Fuels	(5) Carbon
(A) a – 2, b – 1, c – 4, d – 5, e – 3	
(B) a – 2, b – 4, c – 5, d – 1, e – 3	
(C) a – 3, b – 5, c – 2, d – 4, e – 1	
(D) a – 3, b – 4, c – 5, d – 1, e – 2	

101. How much percentage of carbon is present in bituminous? (approximately)
- (A) 20 – 25%
  - (B) 25 – 35%
  - (C) 65 – 85%
  - (D) 98%
102. Petroleum and Natural gas are often found together as large deposits inside the earth’s crust. What is the correct order in which they are present in the earth?



X	Y	Z
(A) Water	Crude oil	Natural gas
(B) Water	Natural gas	Crude oil
(C) Crude oil	Water	Natural gas
(D) Natural gas	Water	Crude oil

\*\*\*\*\*ROUGH WORK\*\*\*\*\*

**103.** Which of the following has the highest calorific value?

- (A) kerosene (B) Biogas  
(C) LPG (D) Petrol

**104.** Unburnt carbon particles are present in the:-

- (A) Blue Zone  
(B) Dark inner zone  
(C) Luminous zone  
(D) Non – luminous zone

**105.** Which of the following oxide is acidic in nature?

- (A) CaO (B) Al<sub>2</sub>O<sub>3</sub>  
(C) SO<sub>2</sub> (D) CO

**106.** The reaction of aluminium atom displacing hydrogen ions from sulphuric acid can be represented as

- (A)  $2\text{Al} + 3\text{H}_2\text{SO}_4 \rightarrow \text{Al}_2(\text{SO}_4)_3 + 3\text{H}_2$   
(B)  $\text{Al} + 3\text{H}_2\text{SO}_4 \rightarrow \text{Al}_2(\text{SO}_4)_3 + \text{H}_2$   
(C)  $3\text{Al} + 2\text{H}_2\text{SO}_4 \rightarrow \text{Al}_3(\text{SO}_4)_2 + 2\text{H}_2$   
(D)  $2\text{Al} + 6\text{H}_2\text{SO}_4 \rightarrow \text{Al}_2(\text{SO}_4)_6 + 6\text{H}_2$

**Multiple selection questions (Q.107 to Q.110)**

**107.** Which of the following are vital constituents of petroleum ?

- (A) Butane  
(B) Liquified petroleum gas  
(C) Jet fuel  
(D) None of the above

**108.** Which of the following statements is/are correct?

- (A) Polymers can be natural or synthetic  
(B) Rayon closely resembles silk  
(C) Most synthetic fibres have very high moisture absorbing capacity  
(D) Polyester is resistant to most chemicals

**109.** Aluminium is used for making cooking utensils.

Which of the following properties of aluminium are responsible for the same?

- (A) Good thermal conductivity  
(B) Good electrical conductivity  
(C) Ductility  
(D) High melting point

**110.** Chlorofluorocarbons is mainly used in :-

- (A) Refrigerators  
(B) Air conditioners  
(C) Perfumes  
(D) Television

### **BIOLOGY**

**Assertion/Reason questions**

**Directions:-** The questions from 111 to 114 below

consist of an assertion and a Reason. Use the following key to choose the appropriate answer.

(A) Both A and R are True and R is the correct explanation of A.

(B) Both A & R are true but R is not the correct explanation of A

(C) A is true but R is false

(D) A is false but R is true

**111.** Assertion (A) :- Crop rotation is the method in which crops are rotated to 90 degrees

Reason (R) :- Crop rotation is used by the farmers so that they can sell different types of crops every year.

\*\*\*\*\*ROUGH WORK\*\*\*\*\*

**112.** Assertion (A) :- There are 23 pairs of chromosomes in human body.

Reason (R) :- Chromosomes is a thread like structure present in nuclei of the cell.

**113.** Assertion (A):- Endocrine glands called ductless glands.

Reason (R):- They don't release hormones directly into blood streams.

**114.** Assertion (A):- Endemic species of plants and animals are found easily.

Reason (R):- Indian giant squirrel and flying squirrel are endemic species.

### Comprehension type questions

**Direction :** The questions from 115 to 118 have to be answered from the following paragraph.

When plants of the same kind of crops are cultivated at one place on a large scale, it is called a crop. For example, crop of wheat means that all the plants grown in a field are that of wheat. You already know that crops are of different types like cereals, vegetables and fruits. These can be classified on the basis of the season in which they grow. India is a vast country. The climatic conditions like temperature, humidity and rainfall vary from one region to another. Accordingly, there is a rich variety of crops grown in different parts of the country. Despite this diversity, two broad cropping patterns can be identified. These are: (i) Kharif Crops: The crops which are sown in the rainy season are called kharif crops. The rainy season in India generally from June to September. Paddy, maize, soyabean, groundnut and cotton are kharif crops.

**115.** Soyabean which is generally sown from June to September is an example of ..... crops.

- |            |           |
|------------|-----------|
| (A) Kharif | (B) Zaid  |
| (C) Rabi   | (D) Fiber |

**116.** Which of the following mentioned crop is included in the category of Rabi crop?

- |               |             |
|---------------|-------------|
| (A) Paddy     | (B) Cotton  |
| (C) Groundnut | (D) Mustard |

**117.** Which among the following factors or conditions does NOT affect the crop production?

- |                 |              |
|-----------------|--------------|
| (A) Temperature | (B) Humidity |
| (C) Literacy    | (D) Rainfall |

**118.** Examples of kharif crops are:-

- |                     |                    |
|---------------------|--------------------|
| (A) Wheat and maize | (B) Gram and maize |
| (C) Paddy and maize | (D) All of these   |

### Q.119 to 126 Single Choice Questions (SCQs)

**119.** Select the incorrect statement.

- (A) NPK fertilizers are insoluble in water and rich in nitrogen, phosphorus and potassium salts.
- (B) Compost is made by burying all available organic materials in a pit and is rich in organic nutrients.
- (C) Pongal and Bihu are celebrated at the time of harvesting of crops
- (D) Granaries are large buildings where grains are stored in gunny bags.

**120.** Crop plants may be attacked by diseases which affect the crop production. Bacteria is the causal organism of diseases like

- |                      |                      |
|----------------------|----------------------|
| (A) Smut of wheat    | (B) Wilt of potato   |
| (C) Blight of potato | (D) Both (A) and (C) |

**121.** Read the given passage and select the correct option for X and Y.

Microorganisms are used for the large scale production of alcohol, wine and acetic acid. X is used for commercial production of alcohol and wine. The process of conversion of sugar into alcohol is known as Y.

- |  |
|--|
| (A) X: Streptococcus; Y: Aerobic respiration |
| (B) X: Saccharomyces; Y: Fermentation        |
| (C) X: Lactobacillus; Y : Fermentation       |
| (D) X: Saccharomyces; Aerobic respiration    |

\*\*\*\*\*ROUGH WORK\*\*\*\*\*



**122.** Match column I with Column II and select the correct option from the codes given below.

(There can be more than one match for column I.)

Column I	Column II
(a) Green algae	(i) Gracilaria
(b) Red algae	(ii) Chara
(c) Blue – green algae	(iii) Nostoc
(d) Brown algae	(iv) Polysiphonia
	(v) Ulothrix
	(vi) Anabaena
	(vii) Sargassum
	(viii) Laminaria

- (A) (a) – (ii, v), (b) – (i, vi), (c) – (iii, iv), (d) – (vii, viii)  
 (B) (a) – (ii, v), (b) – (i, iv), (c) – (iii, vi), (d) – (vii, viii)  
 (C) (a) – (ii, vii), (b) – (i, iv), (c) – (iii, vi), (d) – (v, viii)  
 (D) (a) – (ii, v), (b) – (iii, iv), (c) – (i, vi), (d) – (vii, viii)

**123.** Match column I with Column II and select the correct option from the given codes.

Column I	Column II
(P) Anopheles	(i) A fungus from which antibiotic is obtained
(Q) Rhizobium	(ii) A viral disease
(R) Penicillium	(iii) A bacterium responsible for curdling of milk
(S) Hepatitis B	(iv) Nitrogen fixing bacterium
(T) Lactobacillus	(v) Edible fungus
(U) Mushroom	(vi) Vector for malarial parasite

- (A) P – (vi), Q – (iv), R – (i), S – (ii), T – (iii), U – (v)  
 (B) P – (iii), Q – (v), R – (iii), S – (i), T – (vi), U – (iv)  
 (C) P – (iv), Q – (vi), R – (i), S – (v), T – (ii), U – (iii)  
 (D) P – (i), Q – (iii), R – (iv), S – (ii), T – (vi), U – (v)

**124.** The common wild which grows along with every crop is

- (A) Chenopodium (B) Amaranthus  
 (C) Convolvulus (D) Nerium

**125.** Which of the following sets contains unicellular organisms only ?

- (A) Paramecium, Allium, Amoeba  
 (B) Euglena, Chlorella, Chlamydomonas  
 (C) Euglena, Amoeba, Allium  
 (D) Rhizopus, Spirogyra, Solanum

**126.** Fill in the blank and select the correct option?

- (i) \_\_\_\_\_ is the production of an exact copy of a cell, any other living part, or a complete organism  
 (ii) In \_\_\_\_\_ new individuals develop from buds.  
 (iii) The type of asexual reproduction in which an organism divides itself into two is called \_\_\_\_\_

**Options**

- |                    |                |                |
|--------------------|----------------|----------------|
| (i)                | (ii)           | (iii)          |
| (A) Binary fission | Budding        | Cloning        |
| (B) Cloning        | Budding        | Binary fission |
| (C) Cloning        | Binary fission | Budding        |
| (D) Binary fission | Cloning        | Budding        |

**Multiple Selection Questions (Q.127 to Q.130)**

**127.** During metamorphosis :-

- (A) Tadpole changes to adult  
 (B) Pupa of silk worm changes into adult  
 (C) Human child changes into adult  
 (D) None of the above

**128.** Antibiotics are mostly obtained from :-

- (A) Bacteria  
 (B) Viruses  
 (C) Fungi  
 (D) None of the above

**129.** The endoplasmic reticulum in a cell probably functions in the :-

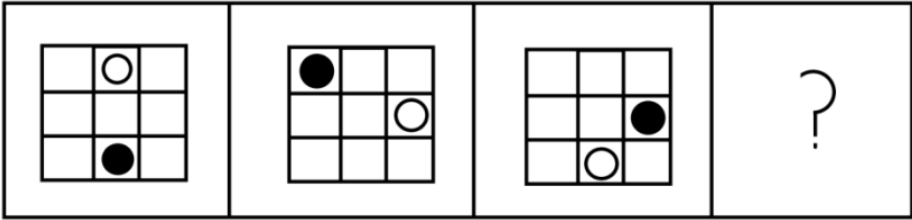
- (A) Secretory activities of the cell  
 (B) Protein synthesis  
 (C) Transport of materials  
 (D) Power house of the cell

\*\*\*\*\*ROUGH WORK\*\*\*\*\*

130. Which of the following statements is correct ?
- (A) If the ovum released from the ovaries is not fertilised, then it is shed along with blood during menstruation.
  - (B) Testes lie within the scrotum inside the abdominal cavity
  - (C) Multiple fission can be seen in Amoeba
  - (D) Fertilization is a by chance process.

**MENTAL ABILITY**

131. Choose the missing figure from the options.



- (A)
- (B)
- (C)
- (D)

132. Choose the missing letter(s) to form a series.  
AZ, CX, FU, ?

- (A) IR                      (B) IV                      (C) JQ                      (D) KP

133. Identify the rule of the pattern and find the missing term which will replace the question mark.

11	6	8
17	12	?
25	34	19
19	28	11

- (A) 9                      (B) 13                      (C) 15                      (D) 16

134. In the following question, three are similar in some way while one is different. Choose the odd one out.

- (A) (52, 142)                      (B) (54, 126)  
(C) (56, 168)                      (D) (58, 184)

135. In a certain code language, BEAT is written as YVZG, then what will be the code of MILD?

- (A) NROW                      (B) NOWR  
(C) ONWR                      (D) ONRW

136. Pointing to a photograph Monika said, "He is the brother of the son of my grandfather's only child". How is the man related to Monika ?

- (A) Brother  
(B) Cousin  
(C) Nephew  
(D) Can't be determined

137. If 'rose' is called 'poppy', 'poppy' is called 'lily', 'lily' is called 'lotus' and 'lotus' called 'anemone', which is the king of flowers ?

- (A) rose                      (B) lotus  
(C) anemone                      (D) poppy

138. If NOIDA is written as 39658, how will INDIA be written ?

- (A) 36568                      (B) 63569  
(C) 63568                      (D) 65368

139. A is the brother of B. B is the wife C. C is the son of P. P is the wife of Q. What is Q of B?

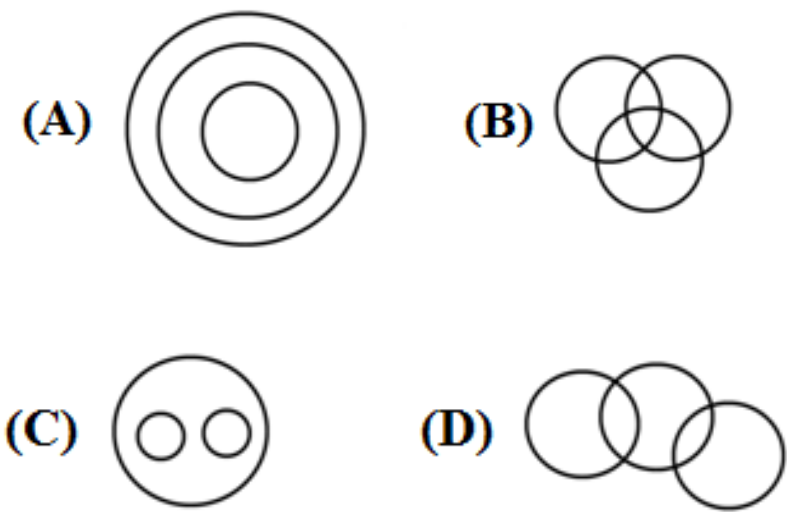
- (A) Mother – in – law                      (B) Son – in - law  
(C) Father – in – law                      (D) Brother – in – law

140. Vipul walks 20 metres towards North. He then turns left and walks 40 metres. He again turns left and walks 20 metres. Further, he moves 20 metres after turning to the right. How far is Vipul from his original position ?

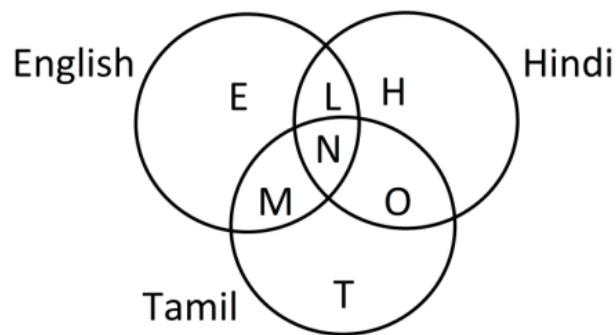
- (A) 20 m                      (B) 30 m                      (C) 60 m                      (D) 50 m

\*\*\*\*\*ROUGH WORK\*\*\*\*\*

141. Science, Physics, Chemistry



142. Study the diagram and identify the people who can speak only one language.



- (A) L + M + O (B) T + H + E  
(C) T (D) E
143. Arrange the words given below in a meaningful sequence.
1. Windows 2. Walls 3. Room  
4. Foundation 5. Roof
- (A) 4, 1, 5, 2, 3 (B) 4, 3, 5, 2, 1  
(C) 4, 2, 1, 5, 3 (D) 4, 5, 3, 2, 1

144. How many 3's are there in the given number series which are preceded by an odd number but not followed by an even number?

3 4 2 5 3 1 5 2 1 3 6 7 3 1 8 2 7 8 5 3 9 1 3 4 5 2 3 5  
4 3 5

- (A) Two (B) Three  
(C) Four (D) Five

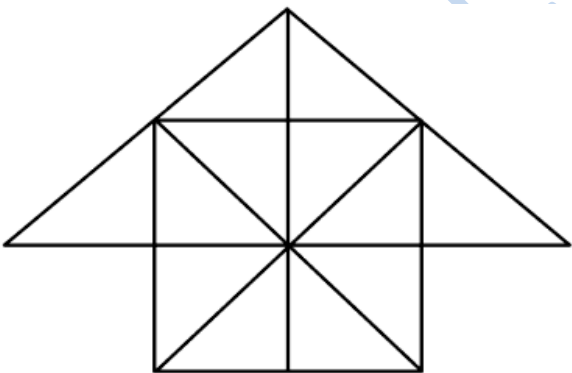
145. In a row of children, Trishika is fifteenth from the left end of the row. If She is shifted towards the right end of the row by four paces, she becomes eighth from the right end. How many children are there in the row?

- (A) 27 (B) 26  
(C) 28 (D) 24

146. If 'a' means '-', 'b' means '+', 'c' means 'x' and 'd' means '÷', then  $32 \text{ d } 4 \text{ b } 7 \text{ c } 2 \text{ a } 6 = ?$

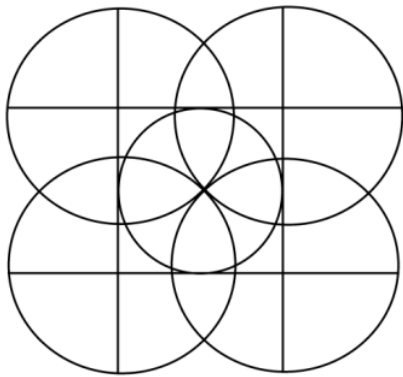
- (A) 18 (B) 24  
(C) 36 (D) 16

147. Count the number of triangles and square in the given figure.



- (A) 26 triangles, 5 squares  
(B) 28 triangles, 5 squares  
(C) 26 triangles, 6 squares  
(D) 28 triangles, 6 squares

148. How many semicircles are there in the given figure?



- (A) 8 (B) 12  
(C) 16 (D) 20

\*\*\*\*\*ROUGH WORK\*\*\*\*\*

149. Choose the correct water image of the given combination.

wrote

- (A) wɹɹɔɹ ǝ
- (B) wɹɹɔɹ ǝ
- (C) ʍɹɹɔɹ ǝ
- (D) wɹɹɔɹ ǝ

150. Select a figure from the given four alternatives which fits exactly into figure (X) to form a complete square.

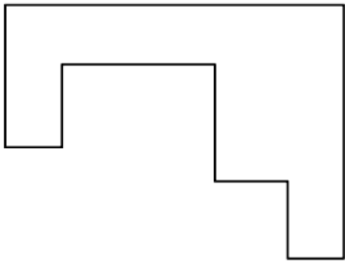


Fig (X)

- (A)
- (B)
- (C)
- (D)

\*\*\*\*\*ROUGH WORK\*\*\*\*\*