MAT 2025 PBT Question Paper - 13 December (Memory based)

Time Allowed :3 Hours	**Maximum Marks :**300	**Total Questions :**90

General Instructions

Read the following instructions very carefully and strictly follow them:

1. The test is of 3 hours duration.
2. The question paper consists of 90 questions, out of which 75 are to attempted. The maximum marks are 300.
3. There are three parts in the question paper consisting of Physics, Chemistry and Mathematics having 30 questions in each part of equal weightage.
4. Each part (subject) has two sections.
   (i) Section-A: This section contains 20 multiple choice questions which have only one correct answer. Each question carries 4 marks for correct answer and –1 mark for wrong answer.
   (ii) Section-B: This section contains 10 questions. In Section-B, attempt any five questions out of 10. The answer to each of the questions is a numerical value. Each question carries 4 marks for correct answer and –1 mark for wrong answer. For Section-B, the answer should be rounded off to the nearest integer

1. If MADRASH is coded as LZCQZRG, and DELHI is coded as CDKGH, then in the same language how BOMBAY will be coded as?

(1) ANLAZX
(2) AQBUMN
(3) APLABX
(4) AOZTML

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2. A person Kash starts from a point and walks 30m towards north and then he takes a left turn and walks 40m towards west and then he takes a left turn and walks 30m and then he takes a left turn and walks 50m. Calculate the distance from the starting point and direction.

(1) 50m, east
(2) 10m, south
(3) 30m, east
(4) 10m, east

3. The present age of Ishan is $\frac{2}{5}$th of the age of Subash. After 2 years, the age of Subash will be 2 times the age of Ishan. Two years back, the age of Subash was 4 times the age of Ishan. Find the present age of Ishan?

(1) 10
(2) 6
(3) 4
(4) Cannot be determined

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4. Aruna and Sudeshana are standing in a queue. Aruna is 5th from the front and Sudeshana is 6th from the end. Now, they interchange their position. Now, Aruna is 13th from the front. Find the position of Sudeshana from the end after the interchange.

(1) 18th
(2) 15th
(3) 14th
(4) Cannot be determined

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5. There are 6 members in a family A, B, C, D, E, F. B is brother of E's husband. D is the father of A and grandfather of F. C is the sister of F. There are 2 fathers, 3 brothers, 1 mother the F's father.

(1) A
(2) B
(3) C
(4) Cannot be determined

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6. Find the wrong number in the series: 2, 10, 30, 68, 130, 232.

(1) 10
(2) 30
(3) 130
(4) 232

Direction for questions 7 to 10:

- $P + Q$ means that P is the brother of Q.
- $P \times Q$ means that P is the mother of Q.
- $P + Q$ means that P is the sister of Q.
- $P - Q$ means that P is the father of Q.
- $P \times Q$ means that P is the husband of Q.
- $P \# Q$ means that P is the daughter of Q.

7. If (K-R) and (SxR), then the relation between K and S is:

(1) K+S
(2) S*K
(3) K*S
(4) Cannot be determined

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8. B is father of K and K is husband of R. Find the relation between B and R?

(1) B*R
(2) B+R
(3) B-R
(4) Cannot be determined

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9. It is known that B is father of K and R is son of B, then find the relation between K and R.

(1) R+K
(2) R-K
(3) K+R
(4) Cannot be determined

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10. What are the statements required for R to be the brother-in-law of K?

(1) 1 AND 5
(2) 2 AND 3
(3) 1 AND 3
(4) 3 AND 4

The Chatterjee Family has 8 members: A, B, C, D, E, F, G, H. There are 3 generations in the family. They go to 4 different countries: France, Canada, UK and USA. They make 4 groups of 2 members each. Each group goes to 1 country.

Passage:
1. The family consists of 3 married couples and each couple forms a group.
2. The oldest member of the family goes to Canada.
3. H, a female, is married to E, who doesn't go to UK.
4. B and D form a group and agreed to go to USA.
5. E's mother-in-law is the mother of C, who is the father of B and brother of H.
6. A is grandfather of 1 of male members, who goes to USA.
7. D is unmarried and niece of C.
8. F is the oldest member of the family.

11. Who is the mother-in-law of E?

(1) G
(2) F
(3) A
(4) Cannot be determined

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12. Which of the following members will go to Canada?

(1) A and F
(2) C and F
(3) D and B
(4) A and G

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13. How many male members are there in the family?

(1) 3
(2) 5
(3) 4
(4) CBD

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14. How is D related to E?

(1) Daughter
(2) Niece
(3) Sister
(4) CBD

QUANT

1. The average score of the first four batsmen in a cricket match was 58 runs. The average score of the last four batsmen was 6 runs less than the average of the first four batsmen, and the average of the remaining batsman was 11 runs less than the average of the first four and last four batsmen. Determine the average score of the team.

(1) 52 runs
(2) 56 runs
(3) 54 runs
(4) 50 runs

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2. Pipe-1 can fill a tank in 17.5 minutes. Pipe-2 can fill the tank in 20 minutes. Both pipes can fill at the rate of 6 liters/sec. What is the capacity of the tank?

(1) 3360
(2) 3570
(3) 3670
(4) 3450

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3. For a sports event of class V students, a packet of 7 caps is to be prepared from 9 green colored caps and 4 red caps. In how many ways can this be done when the packet contains at most 3 red caps?

(1) 1588 ways
(2) 1632 ways
(3) 1748 ways
(4) 1684 ways

4. A trader gives a discount of 25% and makes a profit of 20%. He wants to earn more and he reduces the discount to 15%. Find the new profit percentage.

(1) 24%
(2) 36%
(3) 28%
(4) 30%

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5. A man takes 24 minutes to row 10 km upstream, which is one-fifth more than the time he takes on his way downstream. What is his speed of rowing in still water?

(1) 27.5 km/hr
(2) 25.5 km/hr
(3) 24 km/hr
(4) 22.5 km/hr

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6. A bag contains $4\frac{2}{3}$ dozens of candies, out of which a are lemon candies. If one candy is drawn at random from the bag, there is some probability that it will be a lemon candy. Now, $4\frac{2}{3}$ dozen more lemon candies are put in the bag, and the probability of drawing a lemon candy will be $2\frac{1}{2}$ times higher than in the first case. Find a.

(1) 16
(2) 14
(3) 20
(4) 18

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7. In the given figure, PQ is the diameter of the circle with center O. If angle PQR = 60°, RPS = 35°, PQM = 45°, find the measure of QPR, PRS, and QPM.

(1) 35°, 30°, 40°
(2) 20°, 25°, 35°
(3) 30°, 25°, 45°
(4) 30°, 25°, 35°

8. A right-angle triangle has perimeter equivalent to 7 times its height, which is the shortest side, while the area of the triangle is 17.5 times the length of the shortest side. Find the measures of the three sides of the triangle.

(1) 28, 45, 53
(2) 20, 21, 29
(3) 12, 35, 37
(4) 7, 24, 25

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9. The ratio of the present age of A and B is 4:7, and 6 years back the ratio was 2:5. What will be the ratio of their ages after 9 years?

(1) 5:7
(2) 5:9
(3) 7:10
(4) 6:11

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10. Guddu and Sonu can do a certain work in 12 days and 24 days respectively. They started the work together, but Sonu left after some time and Guddu finished the remaining work in 6 days. After how many days (from the start) did Sonu leave?

(1) 4 days
(2) 3 days
(3) 5 days
(4) 6 days

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11. The horizontal distance between the towers is 108 metres. The angle of depression of the top of the first tower when seen from the top of the second tower is 30°. If the height of the second tower is 140 metres, find the height of the first tower.

(1) 56.35 m (approx)
(2) 62.63 m (approx)
(3) 54.96 m (approx)
(4) 77.65 m (approx)

12. In a given figure, PQ is the diameter of the circle with center O, PR and QS are produced to meet at T and angle ROS is equal to 70°. Calculate the angle RTS.

13: If

$$\frac{\sqrt{19}^{P} \times 361^{1/3} \times 191^{1/3}}{19 \times (6.859)^{3/2}} = (19^2)^2, \text{ find P.}$$

(1) 15
(2) 17
(3) 19
(4) 13

DATA SUFFICIENCY AND DATA INTERPRETATION

1. Quantity A: 9% of 93
Quantity B: 93 times 0.09

(1) If Quantity A is more than Quantity B
(2) If Quantity A is equal to Quantity B
(3) If Quantity A is less than Quantity B
(4) If comparison can't be made from the information given

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2. Quantity A: The sum of integers from -6 to 7
Quantity B: The sum of integers from -7 to 6

(1) If Quantity A is more than Quantity B
(2) If Quantity A is equal to Quantity B
(3) If Quantity A is less than Quantity B
(4) If comparison can't be made from the information given

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3. A: Circumference of a circle with radius 7 inches
B: Perimeter of a square with 7 inches of sides

(1) If Quantity A is more than Quantity B
(2) If Quantity A is equal to Quantity B
(3) If Quantity A is less than Quantity B
(4) If comparison can't be made from the information given

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4. Quantity A: The area of 4 squares with 3 inches of side.
Quantity B: The area of 3 squares with 4 inches of side.

(1) If Quantity A is more than Quantity B
(2) If Quantity A is equal to Quantity B
(3) If Quantity A is less than Quantity B
(4) If comparison can't be made from the information given

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5. Quantity A: A is the Maternity Hospital with an average of one child birth a day throughout the year. The probability that a child is born in a September is $\frac{30}{365}$.
Quantity B: The probability that a child is born at the same hospital on Friday is $\frac{1}{7}$.

(1) If Quantity A is more than Quantity B
(2) If Quantity A is equal to Quantity B
(3) If Quantity A is less than Quantity B
(4) If comparison can't be made from the information given

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6. What is the swimming speed of the champion swimmer in the still water of a river?

Statement 1: The swimmer seems at the speed of 3 km per hour upstream.
Statement 2: The swimmer swims at the speed of 5 km per hour downstream.

(1) If statement 1 alone is sufficient to answer
(2) If statement 2 alone is sufficient to answer
(3) If both the statements are needed to answer
(4) Cannot answer from both statements using together

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7. What is the cost of 3 mocktails and one cocktail in the society club?

Statement A: The cost of three cocktails is twice the cost of six mocktails.
Statement B: The cost of two mocktails is equal to the cost of one cocktail which is Rupees 500.

(1) If Statement A is alone sufficient to answer
(2) If Statement B is alone sufficient to answer
(3) If both the statements are needed to answer
(4) Cannot answer from both statements using together

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8. How many people are internal auditors in the multi-location company?

Statement A: Each auditor conducts at least 12 internal audits.
Statement B: The company conducts 120 audits across all company locations.

(1) If statement 1 alone is sufficient to answer
(2) If statement 2 alone is sufficient to answer
(3) If both the statements are needed to answer
(4) Cannot answer from both statements using together

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9. What is the area of the circle?

Statement A: The radius of the circle is equal to the side of the square of the area 256 square inches.
Statement B: The width of the rectangle is 3/4 of the radius of the circle.

(1) If statement 1 alone is sufficient to answer
(2) If statement 2 alone is sufficient to answer
(3) If both the statements are needed to answer
(4) Cannot answer from both the statement using together

10: What will be the age of Sita 8 years from now?

Statement A: Geeta, who is half of Sita's present age, was 11 years old 5 years ago.
Statement B: Sita's presently twice Geeta's age.

(1) If statement 1 alone is sufficient to answer
(2) If statement 2 alone is sufficient to answer

(3) If both the statements are needed to answer
(4) Cannot answer from both statements using together

Passage:
An international NGO for homeless people has certain items for ongoing winters to new shelters for homeless people. These consist of items like blankets, jackets, shoes, socks, and room heaters. The total number of five such items distributed in December 2024 was 3300. 24% of all are blankets, 16% of jackets, 14% were the remaining items distributed at either socks or room heaters. Number of room heaters distributed are more than socks distributed.

11. Difference between the total number of blankets distributed and the number of shoes distributed

(1) 1022
(2) 1068
(3) 1025
(4) 1048

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12. Number of socks distributed is approximately what percent of the total number of shoes and the room heaters put together?

(1) 59
(2) 63
(3) 55
(4) 51

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13. What is the total number of jackets, shoes, and room heaters distributed?

(1) 1810
(2) 1834
(3) 1850
(4) 1814

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14. What is the respective ratio between the numbers of female blood donors from the Anand Lok and Green Park?

(1) 2:7
(2) 2:3
(3) 2:5
(4) 3:7

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15. The total number of male blood donors from the Jor Bagh and Saket together is

(1) 1264
(2) 1088
(3) 1363
(4) 1138

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16. Find the ratio between the male blood donors from Golf Link and Saket.

(1) 197:134
(2) 199:133
(3) 123:83
(4) 197:135

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17. Find the Ratio of the number of female blood donors from Anand Lok and the number of male blood donors from the same colony.

(1) 35:69
(2) 32:69
(3) 38:69
(4) 35:67
