Please check the examination details below before entering your candidate information

Candidate Name	Class	Section

BLOOM Reasoning & Aptitude Olympiad (BRAO)

Question Paper 2024-25

Class 11

Total Questions **50 + 5** (Tie-Breaking Section)

Total Time Allotted : 60 minutes	**Total Marks** 60

Instructions

1. There are **50 Multiple Choice Questions** in this booklet having 4 options out of which **ONLY ONE** is correct.
2. There are two sections in the Question Paper; Section A having 40 Questions carrying 1 Mark each & Section B having 10 Higher Difficulty Order Questions carrying 2 Marks each.
3. All questions are compulsory. There is **NO negative** marking for incorrect answers.
4. Total time allotted to complete the paper is 60 minutes.
5. Please fill in your details in the space provided on this page before attempting the paper.

OMR Sheet Instructions

1. Before starting the paper, fill in all the details in the OMR Sheet.
2. Additional 10 minutes will be provided to fill up the OMR sheet, before the start of the exam.
3. Use HB Pencil to darken the circle of the correct Option in OMR sheet. The correct way to darken the circle in OMR sheet is shown below.

   ● ○ ○ ○
4. Use black or blue ball point pen/HB pencil to fill the information in the OMR sheet. Partially filled OMR sheet will not be checked.
5. Return the OMR sheet to the invigilator after the exam.

CODE #192

R11

BLOOM CAP
Founded by | arihant

Bloom Reasoning & Aptitude Olympiad Class 11

Section A (1 Mark)

1. It was Monday on 1st January, 2005. What was the day of the week 1st January, 2011?

(a) Sunday (b) Monday
(c) Saturday (d) Tuesday

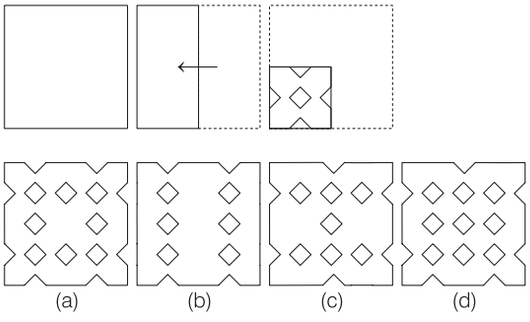
2. The number of rational numbers between $\frac{1}{3}$ and $\frac{1}{6}$ are

(a) Infinite (b) Two
(c) Three (d) Zero

3. If in the quadrilateral *ABCD* are $AB = 7$ cm, $BC = 6$ cm, $CD = 12$ cm, $DA = 5$ cm and $AC = 9$ cm, then what is the area of quadrilateral *ABCD*?

(a) 39.76 cm (b) 41.37 cm
(c) 34.55 cm (d) 56.56 cm

4. Select a figure that would most closely resemble the unfolded form of the question figure.



5. Select the correct mirror image of the given combination when the mirror is placed on the right side of the given combination.

WQ12FNZ7

(a) ϒΣИFSιΩW (b) ϒΣИFSιQW
(c) ϒΣИFSιΩW (d) ϒΣИFSιΩW

6. A dishonest shopkeeper sells his goods at 25% loss on the cost price but uses a faulty weight that weighs 30% less. What is the profit or loss percentage?

(a) 7.14 profit (b) 8.23 loss
(c) 7.14 loss (d) 8.23 profit

7. In the question, the second term is related to the first term by following the same pattern.

Based on this pattern determine the missing term from the given alternatives.

SDRKJ : HWTMN :: NPAQR : ?

(a) TRCUT
(b) CUTRF
(c) TRCFG
(d) TRCUL

8. In a certain code language, "CAPITAL" is coded as "3187615" and "DECLINE" is coded as "9435724". What is the code for "PICNIC"?

(a) 874573 (b) 873237
(c) 873273 (d) 783273

9. Select the set of number pairs that is different from the others.

(a) 45 : 50 (b) 67 : 98
(c) 53 : 42 (d) 39: 104

10. The largest value of *a* for which *a*47990*a*03 is divisible by 11 is

(a) 3 (b) 6 (c) 8 (d) 9

11. Select the correct set of mathematical symbols that will replace the "*" and make the equation correct.

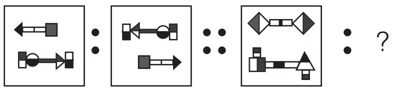
148 * 4 * 38 * 24 * 3 * 3

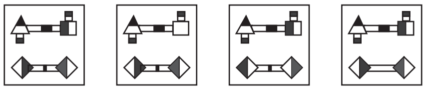
(a) ÷, +, ×, –, =
(b) ÷, +, –, =, ×
(c) ÷, +, =, –, ×
(d) ÷, +, –, ×, =

12. Select the water image of the given combinations from the alternatives.

JK6LS79W

13. Select the figure from the alternatives that will replace the question mark (?) and follow the same relation as given in the question figure.





(a) (b) (c) (d)

14. What is the angle between the minute and hour hand when the time on the clock is 8 : 30 pm?

(a) 175° (b) 75°
(c) 67° (d) 195°

15. How many meaningful words can be formed with the letters E, A, M, L by using all the letters only once?

(a) One (b) Two
(c) Three (d) None

16. If a sphere with a radius of 14 cm is molded to make a small sphere with a radius of 7 cm. Then how many such small spheres can be made?

(a) 2 (b) 3 (c) 5 (d) 4

17. Which least number is multiplied by 1944 to make the perfect cube?

(a) 3 (b) 8 (c) 7 (d) 5

18. Select the pair of alphanumeric clusters from the alternatives that follow the same relation as given in the question.

DEFGHI13 : EGIKMO26 :: ? : ?

(a) TUUWXY32 : UWYCAE62
(b) TUVWXY31 : UWYACE62
(c) RSTUVW12 : FHTSJT17
(d) MNOPQR89 : ZXVWSH56

19. In a certain code language, "chocolates are sweet" is coded as "um nm gm" and "she likes sweet dish" is coded as "nm jm rm sm" and "this is dark chocolate" is coded as "zm gm dm hm". What is the code for "sweet chocolate"?

(a) nm um (b) gm hm
(c) nm gm (d) um zm

20. Three of the four alternatives follows the same rule and follow the same pattern thus formed a group. Find the alternative that does not belong to the group.

(a) ACFJ (b) FHKO
(c) WYBE (d) SUXC

21. The average of 20 numbers is 32. If two numbers are 29 and 31, then what is the average of the remaining numbers (correct up to two decimals)?

(a) 31.24 (b) 30.22
(c) 34.44 (d) 32.22

22. Aman is facing South direction and he turns 90° in an anticlockwise direction and 45° in the same direction and then rotates by 270° in a clockwise direction. In which direction he is facing now?

(a) North-West
(b) North-East
(c) South-West
(d) South-East

23. Two ropes of length 3.5 m and 2.5 m are to be cut into two equal pieces without leaving any extra length. What will be the greatest length of the rope pieces of same size which can be cut from these two lengths?

(a) 0.7 m (b) 0.15 m
(c) 0.5 m (d) None of these

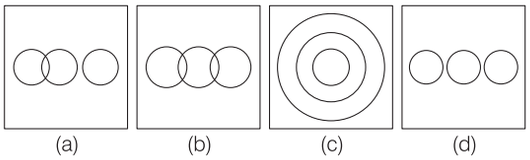
24. Select the option that represents the letters that, when placed left to right in the following blanks, will complete the letter series.

M _ R _ N _ R _ N _ _ T _ T S _

(a) S T S M T R N T
(b) S T S T T R N U
(c) S T S T T R N T
(d) S T S N T R N T

25. Identify the Venn diagram that best represents the relationship between the given classes.

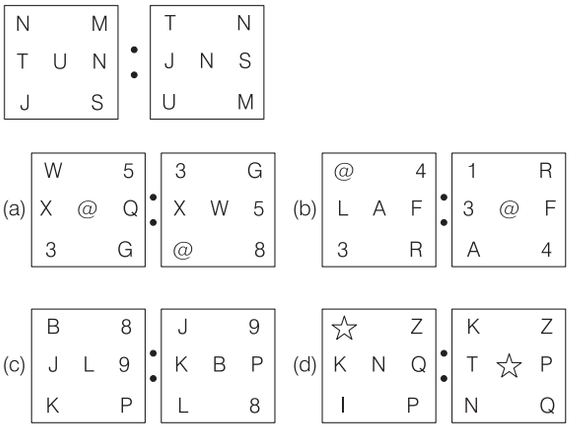
Engineer, Doctor, Professor



26. In a university seats for Commerce, Art and Science are in the ratio 4 : 5 : 6. But after a new proposal these seats are increased by 50%, 60% and 70% respectively. What will be the ratio of increased seats?

(a) 30 : 31 : 42 (b) 30 : 40 : 51
(c) 21 : 21 : 31 (d) None of these

27. Find the pair of figures that have the same relation as given in the question and will replace the question mark (?)



28. If the sum of four consecutive even numbers is 164, then which number will be the smallest?

(a) 34 (b) 36 (c) 38 (d) 40

29. If the length of the floor is 6cm and width of the floor is 7 cm and the length and width of the carpet that is laid on the floor is 4 cm. Then what is the area of the floor that is not covered by the carpet?

(a) 24 cm (b) 22 cm (c) 46 cm (d) 16 cm

30. Three of the following four pairs of words follow the same pattern so form a group, find the word from the alternatives that is different from the others.

(a) Albania : Lek
(b) Russia : Ruble
(c) Japan : Yen
(d) Monaco : Leu

31. If $a = \frac{1}{(1-\sqrt{3})}$ and $b = \frac{1}{(1+\sqrt{3})}$ then what is the value of $\frac{1}{a} + \frac{1}{b}$?

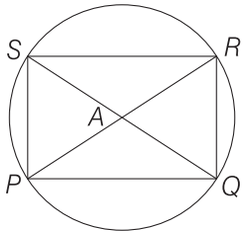
(a) 2 (b) $\frac{1}{2}$ (c) $\frac{1}{\sqrt{3}}$ (d) $\sqrt{3}$

32. Select the missing term from the alternatives that will replace the question mark (?) and complete the series.

SMZ, TOX, VQV, YST, CUR, ?

(a) HWX (b) GWP
(c) HWP (d) FWP

33. *PQRS* is a cyclic quadrilateral whose diagonals intersect at *A*. If $PQ = RQ$, $\angle SQR = 60°$ and $\angle QPR = 40°$, then the measure of $\angle ARS$ is



(a) 35 (b) 60
(c) 80 (d) 40

34. *A* and *B* working together can do a piece of work in 15 days and 30 days respectively. They work on alternate days starting with *A* on the first day. In how many days will the work be completed?

(a) 12 (b) 20
(c) 14 (d) 11

35. If $\sin A + \cos B = \frac{8}{9}$ then what is the value of $\frac{\sin A}{\cos A} + \frac{\cos A}{\sin A}$.

(a) 89/15 (b) 56/17
(c) 98/15 (d) 15/98

36. In a class of students, Kripa is 234th from the left and Raju is 165th from the right. One more person Reva sits between Kripa and Raju and an equal number of persons sit between Reva and Kripa and Reva and Raju. If there are 34 persons between Kripa and Reva. Then find the total number of persons in the row.

(a) 460 (b) 468
(c) 567 (d) 342

37. A man bought two tables for the same price. He sold both the tables, one at 20% profit and the other at 20% loss. Find his overall profit or loss per cent.

(a) 5% gain (b) 2.5% gain
(c) No gain, no loss (d) 5% loss

38. Find the difference between the compound interest, being compounded annually and the simple interest accumulated on 15000 at 10% p.a. at the end of two years.

(a) 150 (b) 189 (c) 190 (d) 200

39. The distance between the points $P(1, 0)$ and $Q(0, 2)$ is

(a) $\sqrt{7}$ (b) $\sqrt{5}$ (c) 4 (d) $\sqrt{2}$

40. The codes for numbers and letters is as follows,

Digit/ Alphabet	A	2	H	B	C	4	D	E	F	5	6	8	G
Code	@	%	&	$	#	+	–	=	^	>	<	÷	×

Conditions for Coding

1. If the first element is a vowel and the last element is an odd number, then both are coded as the code of the first element's code.
2. If the first and last elements are an odd number, then both are coded as the code of the last element.
3. If the first element is a vowel and the last element is a consonant then the code of the first and last element is to be interchanged.

A56ED85G

(a) × > > = – ÷ > @
(b) × < > = – ÷ > @
(c) × > < = – ÷ > @
(d) × > < = – ÷ + @

Section B (2 Marks)

41. In each of the questions below are given some statements followed by some conclusions. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Statements

56% laptops are desktop.

100% laptops are mobile.

0% mobile is the table.

Conclusions

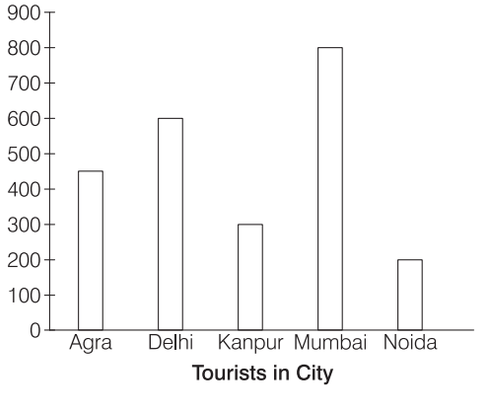
I. Some laptop are table is a possibilities.
II. Some laptop are mobiles.
III. No laptops are tables.
IV. Some mobile are tables.

(a) Only I follows
(b) Only I and II follows
(c) None follows
(d) All follows

42. If $a^2 + b^2 = 461$ and $ab = 190$, then what is the value of $a + b$?

(a) 26 (b) 24
(c) 27 (d) 29

Directions (Q. Nos. 43-45) *Consider the following bar graph and answer the following questions.*



43. Number of tourists in Agra is what percentage of the total number tourists in Mumbai city?

(a) 56.25 (b) 78.34
(c) 35.25 (d) 75.25

44. What is the average total number of persons in all the cities?

(a) 450 (b) 470
(c) 420 (d) 500

45. Total number of tourists in the of city Delhi and Noida is?

(a) 800 (b) 650
(c) 750 (d) 700

46. Which of the following conclusions follows according to the given statements?

Statement

$G > J < H = Y \leq D > K \geq L = M > N$

Conclusions

I. $J > M$
II. $N < D$
III. $H \geq N$

(a) Only I follows (b) Only II follows
(c) Both I and II follows (d) All follows

47. Select the set in which the numbers are related in the same way as the numbers of the following sets.

(**Note** Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/ multiplying etc. to 13 can be performed mathematical operations on 1 and 3 is not allowed).

(34, 17, 102)
(51, 18, 138)
(a) (49, 62, 222)
(b) (98, 45, 145)
(c) (24, 45, 202)
(d) (31, 67, 124)

48. Which of the following symbols and numbers should be interchanged to make the equation correct?

$39 \div 13 + 89 \times 5 - 25 = 79$

(a) (5, 13), (×, +) (b) (25, 5), (÷, –)
(c) (89, 5), (×, –) (d) (89, 5), (+, ×)

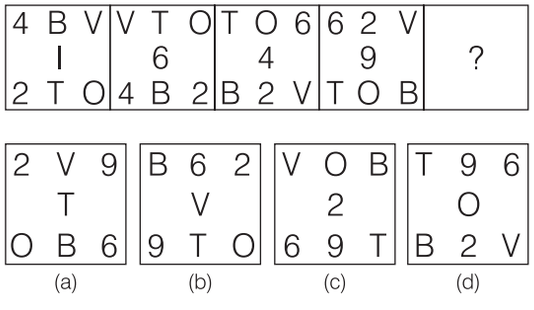
49. Eight persons A, B, C, D, E, F, G and H are sitting around a circular table facing the centre but not necessarily in the same order.

A sits second to the right of C. Only two persons sit between C and D. E sits immediate right of H who neither sits adjacent to D nor sits second to the right of D. B sits second to the right of E. Only two persons sit between B and F. Both G and B are not immediate neighbours.

Who sits second to the right of B?

(a) A (b) E
(c) F (d) D

50. Select the next figure in the given figure series from the given alternatives.



(a) (b) (c) (d)

Tie-Breaking Section

Instructions

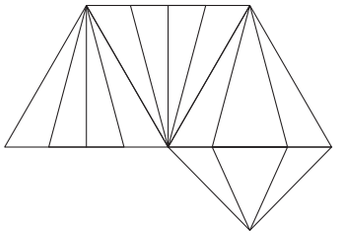
1. This section consists of 5 Questions.
2. The score achieved in this section will not be included in the total marks.
3. If overall marks of two or more students are same, winner will be decided based on the score in this section.
4. Participation in this section is optional, and students may choose to attempt it or not.

1. An uncertain number of persons are sitting in a linear row, facing the North. Y sits fifth from the right end of the row. Only six persons sit person between A and N. Z sits second to the right of N. Q sits third to the right of Y. J sits fourth to the right of A. T sits to the immediate right of X. Five persons sit between Z and Y. A sits second from the left end of the row. M sits to the immediate left of J. E sits third from the right end of the row. T sits third to the right of Z.

How many persons in the row?

(a) 29 (b) 21 (c) 20 (d) 19

2. Count the number of triangles in the given question figure.



(a) 31 (b) 30 (c) 32 (d) 29

3. In question below is given a statement followed by some conclusions. You have to assume everything in the statement to be true, then consider the conclusions together and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.

Statement

Gujarat government launched a scheme for gujarat's girl called ''Vahli Dikri Yojana'' that provides financial support to parents at many stages of their daughter's education, including ₹ 4000 at birth, ₹ 6000 when she starts class 1, ₹ 10000 when she starts class 9 and ₹ 1 lakh for her wedding. The main goal of this scheme is to encourage parents to send their daughters to school and to promote gender equality.

Conclusions

I. Only this scheme will encourage the girl child for education.

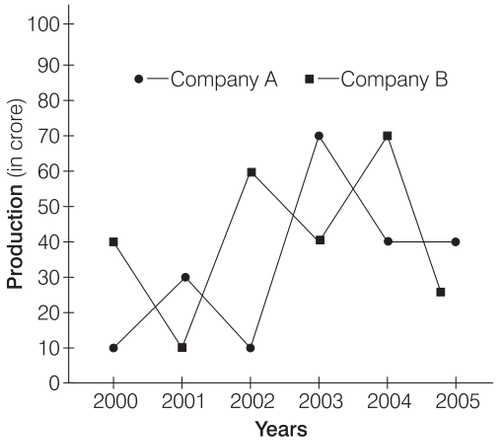
II. This scheme will provide women empowerment.

III. This will provide gender equality

(a) Only I follows (b) Both I and II follow

(c) Only II and III follow (d) None follows

Directions (Q. Nos. 4 and 5) *The following line graph shows the production of companies A and B in different years.*



4. What is the difference between the sum of production company A and B from 2000 to 2005?

(a) 10 cr (b) 12 cr (c) 13 cr (d) 15 cr

5. After combining the production of companies A and B which of the following year has the highest production?

(a) 2003 (b) 2004

(c) 2005 (d) 2003 and 2004