Instructions

A. General:

1. This booklet is your Question Paper containing **10**Printed Pages. Do not open this booklet before being instructed to do so by the invigilators.

2. Blank papers, clipboards, log tables, slide rules, calculators, cameras, cellular phones, pagers and electronic gadgets are NOT allowed inside the examination hall.

3. Write your name and roll number in the space provided below.

4. Use a **black ball point pen/HB pencil** to darken the bubbles on the OMR sheet.

B. Question Paper Format:

The question paper consists of **THREE**sections.

1. **Section 1** contains **15 multiple choice questions of MATHEMATICS.** Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE is correct.**

2.**Section 2** contains **15 multiple choice questions of APTITUDE**.Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE is correct.**

3.Section 3 contains **4 subjective questions**

C. Marking Scheme:

1. For each question in **Section 1** and **Section 2** you will be awarded
2 marks if you darken the bubble corresponding to the correct answer and zero mark if no bubbles are darkened. In all other cases, minus one **(–1/2) mark** will be awarded.

2. For each question in **Section 3**, you will be awarded**10mark** if you answer correctly ,**no minus** marks for this section

Class:VIII Time: 2 hours Maximum Marks: 100

Name of the Candidate:_____ _____

Roll Number:

Candidate's Signature:_____Invigilator's Signature:_____

Section –I

15 X 2= 30M

1)The average age of 10 members of a committee is the same as it was 4 years ago, because an old member has been replaced by a young member. Find how much younger is the new member?

(a)40 years
(b)35 years
(c)45 years
(d)None of the above

2)Let f(x) =x^3-$2x^2$-19x+20...what is the sum of square of the roots.

(a)40
(b)64
(c)42
(d)36

3) n be positive integer, it gives remainder of 2 with division by 4 and remainder of 7 with division by 5. What is the remainder that n leaves when divided by 10.

(a)1
(b)2
(c)3
(d)4

4) A person of height 1.64m stand near an advertising board at some distance. It possess circular board on the top of the pole. The angle of depression to the lower end of the pole is 45° from his eyes & the angle of elevation to the top end of the pole and to the top end of the board are 45° and 60° from his eyes. Find the approximate radius of the circular board.

(a)0.4 m
(b)o.6 m
(c)0.8 m
(d)1 m

5) How is the graph f(x+3) - 2 when compared to f(x).

Options:
(a)Shifted 2 units left and 3 units upward.
(b)Shifted 2 units right and 3 units upward.
(c)Shifted 3 units left and 2 units downward.
(d)Shifted 3 units right and 2 units upwards.

6)200 logs are stacked in following manner: the bottom one consists of 20 logs and the next upper one consists of 19 and so on …... find the no of logs in the upper row?

(a) 4
(b) 5
(c)6
(d)None of these

7) An triangle is inscribed in a circle C1 and another circle C2 is inscribed in this triangle. find the ratio of radius of C1: C2?

(a)1:2
(b)1 : 1.732
(c)1: 1.414
(d)Neither of these

8)statement: Consider an isosceles triangle, the angular bisector of larger angle will be perpendicular of that triangle.
(a)statement is true by SAS congruency
(b)statement is true by SSS congruency
(c)statement is true by both SSS and SAS congruency
(d)statement is false

9)Statement I : The inequality $|(\sqrt{x})-4| \geq y \geq |x+1| + |x+2| + |x^2|$ minimum and maximum occurs at a definite value of x
Statement II : The number of possible integral values of y are 40.

(a) S (I) is true S (II) is false (c)Both the statements are true
(b)S (I) is false S (II) is false (d) Both the statements are false

10) The last digit of the exponents of 7 i.e (i) 7^{57} =a, 7^{75} =b. the value of a+b is?
(hint: understand the pattern of the powers of 7 the last number reoccurs periodically)
(a)10 (b)3 (c)7 (d)8

11) If 1, $\log_3(3^{1-x}+2)$, $\log(4.3^x-1)$ are in ap, then "x" equals to

(a) $\log_3 4$ (b) $1-\log_3 4$ (c) $1-\log_4 3$ (d) $\log_4 3$

12) If f:R→R satisfies f(x+y)=f(x)=f(y) for all x, y €R and f(1)=7 then $\sum_{r=1}^{n} f(r)$is

(a) 7n/2 (b) 7(n+1)/2 (c) 7n(n+1) (d) 7n(n+1)/2

13) In a 2D plane, the distance between two points in a Y=X line is equal to twice Of it's slope. If one point is origin ,then the second point is :

(a) (1,1) (c)(1.414 , 1.414)
(b) (4,4) (d)None of these .

14) If 31z5 is a multiple of 9, where z is a positive integer, what is the value of z?

(a)0 and 9 (b)0 (c)9 (d)all of the above

15) How many of the following are not rational numbers:
$\boldsymbol{\pi}$,22/7,$\sqrt{\mathbf{81}}$,$\sqrt[4]{\mathbf{169}}$,$\sqrt{(\mathbf{1152/8})}$,8/9,1/3

(a)1 (b)2 (c)3 (d)4

Section –II

15 X 2= 30M

16)ACE,BFJ,CIO,.....?

(a)DMS (c)DLT

(b)DMT (d)DLS

17) Two bus tickets from city A to B and three tickets from city A to C cost Rs77 but three tickets from city A to B and two tickets from city A to C cost Rs73. What are the fares for cities B and C from A?

(a) Rs4, Rs23 (b) Rs13, Rs17 (c) Rs15, Rs14 (d) Rs17, Rs13

18) In a school 120 boys have registered for a singles carom tournament. Each eliminates one player. How many matches are to be organized to determine the champion?

(a) 60 (b) 61 (c) 119 (d) 120

19)5, 3,16

9,5,46

7,8, __

Find the missing number.

(a)56 (b) 57 (c) 55 (d) 60

20)A cube painted yellow on all faces is cut into 27 small cubes of equal length. How many small cubes are painted on one face only?

(a)1 (b) 6 (c) 8 (d) 12

21) Find the missing number?

(a)15 (b) 18

(c) 20 (d) 25

28	20	7
84	35	12
45	?	9

22) statements: All bats are pads.
Some bats are jugs.
some jugs are glasses.

Conclusions: . some glasses are bats.
. No glass is bat.
. some jugs are pads.
. No jug is pad.

Choose the **BEST POSSIBLE** Answer.

(a)only and are correct
(b) either or is correct , and is correct
(c) only is correct
(d) either or is correct & either or correct

23) A) seven students P, Q, R, S, T, U, V wrote IIT JEE exam**.**
B) No two students got similar marks.
C) V always scores more than P.
D) P always scores more than Q.
E) Each time Either R scores the highest and T gets lowest OR S scores the highest and U or Q scores the least.
If S is ranked sixth and Q is ranked fifth, choose the possible answer.

(a)V is ranked first or fourth.
(b) R is ranked second or third
(c)P is ranked second or fifth
(d) U is ranked third or fourth.

24) NIKHILA started from her home and went 2km straight. Then, she turned towards her right and went 1km.she turned again towards right and went 1 km. If she was North-west from her house, then in which direction did NIKHILA go in the beginning?

(a)north (b)south (c)east (d)west

25) Look at this series: 7, 10, 8, 11, 9, 12, ... What number should come next?

(a)7 (b)10 (c)12 (d)13

26) The sum of three consecutive multiples of 3 is 72. What is the second largest number?

(a)27
(b)24
(c)21
(d)42

27) If FRIEND is coded as HUMJTK, how is CANDLE written in that code?

(a)EDRIRL
(b)DCQHQK
(c)ESJFME
(d)DEQJQM

28) There are five dogs Scooby, Blackee, Copper, Kin and Mimi. Scooby is heavier than Blackee. Copper weighs more than Mimi but less than Kin. Mimi weighs more than Blackee. Kin weighs less than Scooby. Find the one which is heavier than Blackee and lighter than Scooby

(a) Mimi
(c)Copper
(b) Kin
(d) All of these

29) In a certain code language,
'134' means 'good and tasty';
'478' means 'see good pictures' and
'729' means 'pictures are faint'.
Which of the following digits stands for 'see'?

(a) 9
(b) 2
(c) 1
(d) 8

30) Find the missing number in the series?
4, 18, ?, 100, 180, 294, 448

(a) 48
(b) 50
(c) 58
(d) 60

Section –III

4 X 10=40

1)There are no timekeeping mechanisms (watch, clock) in a room. There are 2 candles in the same room. Each candle when lit, has its wax completely exhausted in exactly 1 hour. How will you track the passage of 45 minutes? (NOTE : The candles do not burn in a proportional manner i.e. consumption of half the candle doesn't indicate a passage of 30min.)

2)A king wants his daughter to marry the smartest of 3 extremely intelligent young princes, and so the king's wise men devised an intelligence test.

The princes are gathered into a room and seated, facing one another, and are shown 2 black hats and 3 white hats. They are blindfolded, and 1 hat is placed on each of their heads, with the remaining hats hidden in a different room.

The king tells them that the first prince to deduce the color of his hat without removing it or looking at it will marry his daughter. A wrong guess will mean death. The blindfolds are then removed.

You are one of the princes. You see 2 white hats on the other prince's heads. After some time you realize that the other prince's are unable to deduce the color of their hat, or are unwilling to guess. What color is your hat?

Note: You know that your competitors are very intelligent and want nothing more than to marry the princess. You also know that the king is a man of his word, and he has said that the test is a fair test of intelligence and bravery.

3) There are 1000 lockers in a high school with 1000 students. The problem begins with the first student opening all 1000 lockers; next the second student closes lockers 2,4,6,8,10 and so on to locker 1000; the third student changes the state (opens lockers closed, closes lockers open) on lockers 3,6,9,12,15 and so on; the fourth student changes the state of lockers 4,8,12,16 and so on. This goes on until every student has had a turn.
How many lockers will be open at the end? What is the formula?

4) You have 16 squares in a box ,with 5 colors, 4 blue ,3 green, 3 red, 3white and 3 black .The same color can’t touch or be in the same row?