PROVINCIAL DEPARTMENT OF EDUCATION
Northern Province
Second Term Examination - 2018
Mathematics - I

32	T	I

Grade - 11

Time : 2 hours

Index No

.....
Supervisor Signature

- Write your index number correctly
- To use the under space Part IA, IB questions get answer method
- Answer the all questions must be done part 1A & IB
- Not allowed to get out the answer sheet from the exam hall after the examination

Important

Part IA has 25 questions each has 2 marks totally 50 marks given.

Part IB has 5 questions each has 10 marks totally 50 marks

Marking examiner

.....

Cross examiner

.....

Examiner use only

Part	Questions no	Marks
1 A	1-25	
1 B	1	
	2	
	3	
	4	
	5	
TOTAL		

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Part - I A

Answer the all questions

01) Write next two terms in the number pattern 3, 7, 11, ...

02) If the speed of a car is $30ms^{-1}$. Find the distance travelled by that car in 5 seconds.

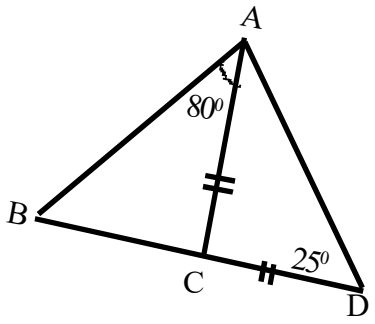
03) Find the value of $\log_3 9 + 1$

04) Simplify $\frac{1}{x} - \frac{1}{3x}$

05) According to the given data in the figure

i) Find the magnitude of $A\hat{B}C$

ii) Write the equal side to the AB?



06) If 3 machines needed 8 hours to harvest the paddy in the paddy filed. How many machines are necessary to harvest the twice of that paddy filed in 6 hours?

07) Find the L.C.M of the algebraic expressions $4a^2$, 6ab

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08) Find the first approximation value of $\sqrt{17}$

09) A and B are sets. If $\cap(A) = 19, \cap(B) = 16$ and $\cap(A \cup B) = 35$

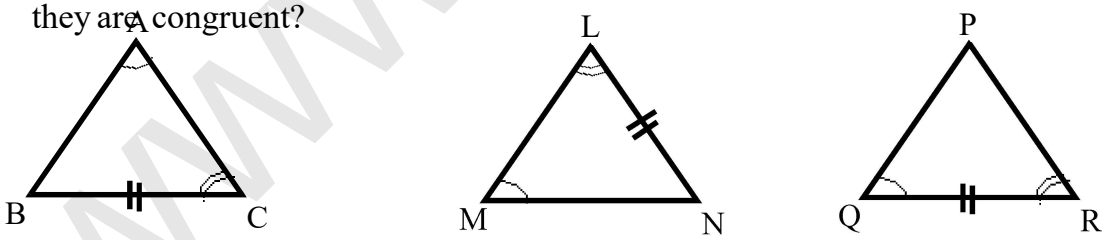
i) Find the value of $n(A \cap B)$

ii) Write the special feature of the sets A and B

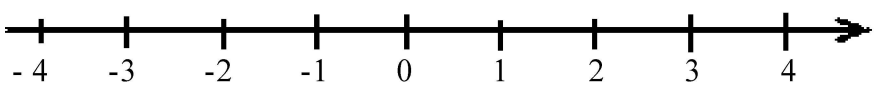
10) Solve $x^2 - 3x = 0$

11) If the possibility of a certain seed to germinate is 70%. How many seeds are expected to germinate if 500 certain seeds are planted?

12) In the given triangles find the pair of congruent triangles and write in which condition they are congruent?



13) Denote the solution for the inequality $2x + 5 \leq 1$

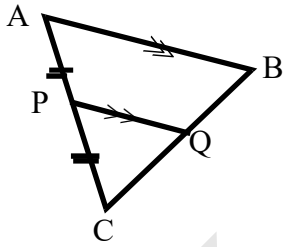


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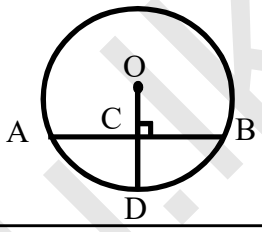
14) factorise

$$x^2 - 2ay + 2ax - xy$$

15) If the area of the ΔPCQ is 5 square units. Find the area of the ΔABC

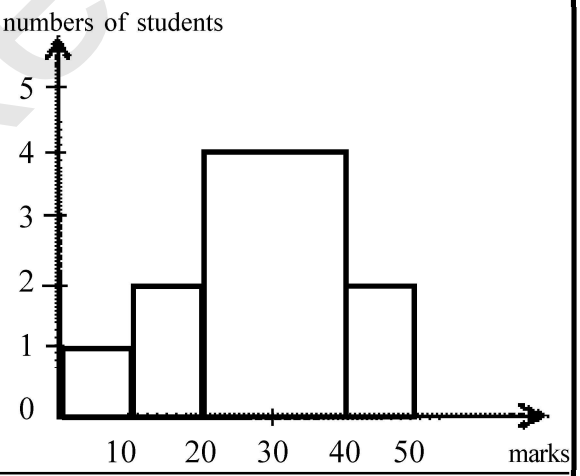


16) Radius of the circle with the centre O is 10cm
If AB = 16cm Find the length of CD



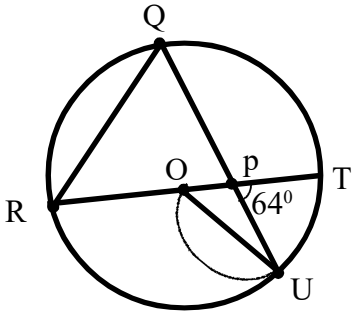
17) Make "R" as the subject of the formula $V = 2\pi(R + T)$

18) The marks obtained by the students in a assignment are shown by Histogram.
Find the number of students are denoted by this histogram.



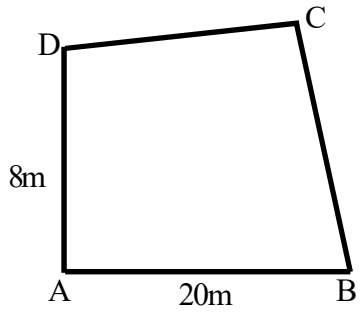
19) Solve : $Log_2 x = 5 - Log_3 81$

20) Diameter of the circle with centre O is RT and arc of the circle with centre P ia OU Find the magnitude of $Q\hat{R}T$



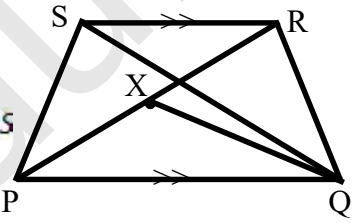
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21) Using your knowledge of locus draw a rough sketch to find the boundry of land. which lies 4m from AB and 8m from the point of A

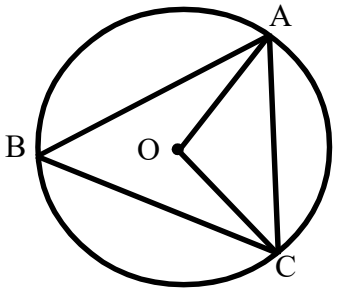


22) If the curved surface area of a cylinder with circumference 22cm is 264cm^2. Find the height of the cylinder?

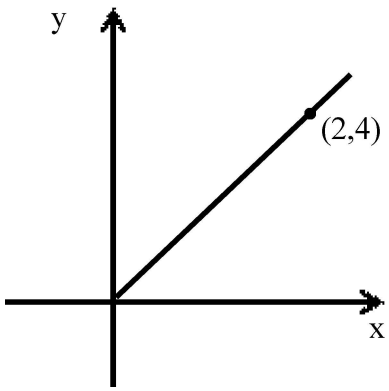
23) PQRS is a trapezium. PQ // SR and X is the mid point of PR. Find the ratio between the area of ΔPQX and ΔPQS



24) In the given circle, O is the centre. Find the magnitude of $A\hat{B}C + A\hat{C}O$



25) Find the equation for the straight Line in this graph.



(25 x 2 = 50 marks)

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Part - I B

Answer the all questions

01) a) Simplify $3\frac{1}{2} \times \frac{5}{7} - \frac{1}{2}$

b) Siva uses his $\frac{1}{4}$ of portion land to sell and $\frac{1}{3}$ of portion land to donate, after that in the remaining $\frac{2}{5}$ of portion land was given to his daughter, remaining other portions of land were equally given to his two sons.

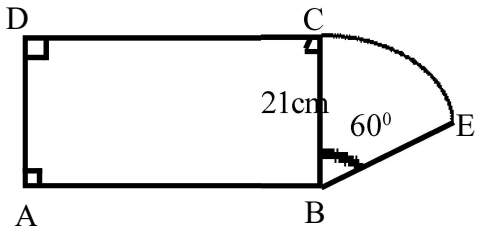
1) What is the fraction for the land sold and donated?

2) What is the fraction of land given to his daughter

3) If daughter gets 2 acres of land more than that of one of his son. How many acres Siva have at the beginning

(3+2+3+2)

02) In the given figure a rectangle ABCD and a sector BCE of angle 60^0, BC = 21cm



01) Find the area of the sector BCE

02) If the area of the figure ABECD is three times of the sector BCE. Find the Length of AB

03) Find the perimeter of compound figure

(3 + 4 + 3)

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03) In the tax imposing system of inland Revenue Department, Initial Rs 800000 in the annual in come is tax free. 6% tax is imposed the remaining income.

01) The monthly income of a certain individual is Rs 120000, How much income tax does he have to pay for a year

02) If a businessman paid an annual income tax of Rs 81600. Find the income for the tax he paid.

03) What is his annual income

(4 + 4 +2)

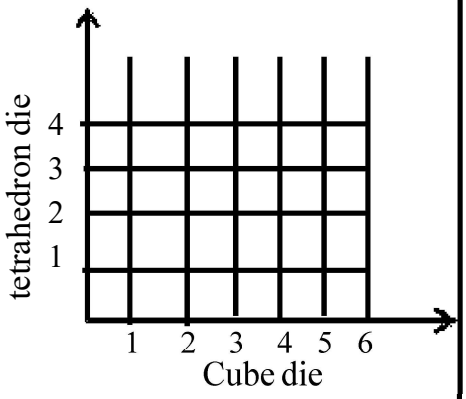
04) a) An Unbiased die numbered from 1 to 6 and a tetrahedron die numbered from 1 to 4 are tossed simultaneously and consider the upwards face for the experiment.

01) Show the relevant sample space in a grid

02) Denote the even of getting number 3 in cube die as A that getting number 3 in cube die.

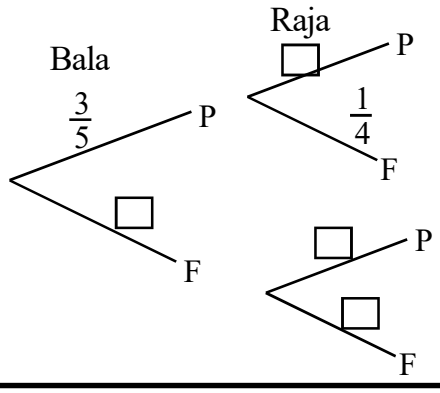
03) Denote the event of getting number 4 in tetrahedron die as B that getting number 4in tetrahedron die?

04) Are the events A and B mutually exclusive Give the reason?



b) The probability that Bala pass the exam is $\frac{3}{5}$ and that for Raja is $\frac{3}{4}$

1) Complete the sample space of the probability that Bala and Raja both pass in the exam in a tree diagram



P - pass
F - Fail

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2) Find the probability that both are not pass in the exam.

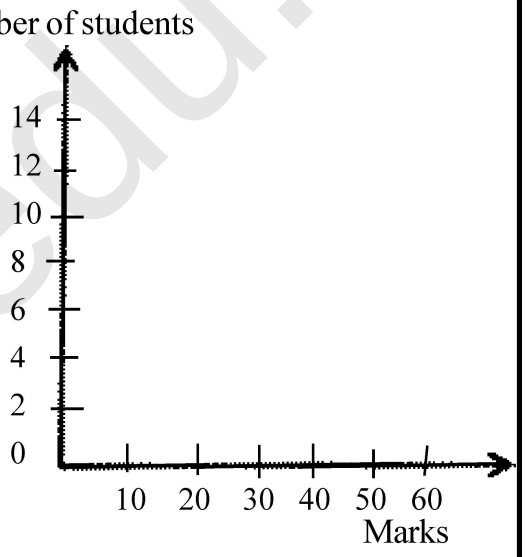
(2 + 1 + 1 + 2 + 2 + 2)

05) a) The given table shows the marks of 30 students in an exam out of 50 marks

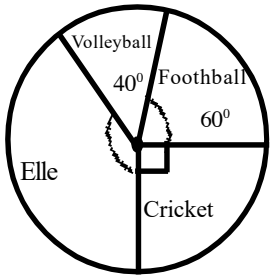
Class interval	0 - 10	10 - 30	30 - 40	40 - 50
No of students	5	.....	8	3

01) Complete the above table

02) Complete the Histogram



b) The pie chart illustrates the information of game like by sports club members. They should play only one game. If the number of volley ball players are 80



1) How match number of players will increase in football than the volleyball?

2) Find the percentage of the number of elle players in the total number of members.

(1+ 4 + 2 + 3)

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PROVINCIAL DEPARTMENT OF EDUCATION
Northern Province
Provincial Level Second Term Examination - 2018
Mathematics - II

32	T	II

Grade - 11

Time : 3 hours

Important : Answer 10 questions selecting five questions from part A and five question from part B

The volume of a cone is $\frac{1}{3}\pi r^2 h$ The volume of a sphere is $\frac{4}{3}\pi r^3$

The volume of a cylinder is $\pi r^2 h$

Part - II A

❖ ***Answer five questions only***

01) a) If Rs 750 has to be paid as quarterly rates for a house of assumed annual value Rs 50000, calculate the rates percentage charged..

b) Raja deposited Rs 100 000 for a interest at 12% per annum from his money of Rs 200 000 and from the rest, he purchased shares of price Rs 25 each . If the dividend of Rs 3.50 is paid for a share

1) Find the income he received at the end of the year by the deposited amount in the bank

2) Find the annual dividend income he receives

3) Which is profitable, deposit in a bank or invest for share? given reason

02) a) An incomplete table is given below to draw the graph of the function $y = 1 - 2x - x^2$

X	-4	-3	-2	-1	0	1	2
Y	-7	-2	1	.....	1	-2	-7

1) Find the value of y when X = -1

2) Draw the graph of the above function by taking suitable scale

b) Using the graph

1) Find the maximum value of the function

2) Find the range of x on which the function is positive

3) Find the roots of the equation $-x^2-2x+1=0$ to the First decimal places.

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03) a) Simplify $\frac{1}{2(x+1)} + \frac{2}{(x+1)}$

b) The price of two pens and 3 pencils is Rs 32. The price of five pens and four pencils is Rs 66 .

1) Make a pair of simultaneous equations by taking the price of a pen as Rs x and the price of a pencil as Rs y.

2) How much does the price of a pen exceed from the price of a pencil by solving the above simultaneous equations.

04) Statistics of brooms produced with 300 days by a certain producer last year are given below.

Number of brooms	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
days	26	28	35	34	63	50	46	18

1) What is the model class of this distribution

2) Considering the midvalue of the 40 - 50 class interval as the assumed mean, calculate the mean number of brooms produced in a day to the closest whole number

3) Production cost of a broom is Rs 50, and he sells it at Rs 80 show that the profit he gains within a month of 30 days exceeds Rs 37000

05) The following table presents the distance traveled by a moving object and the time taken for it

Time (second)	0	2	4	6	8	10	12
Distance (metres)	0	10	20	30	50	70	90

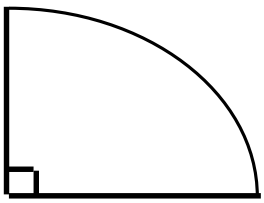
1) Draw the distance - time graph to show the motion of the objects
(x axis - time, y axis - distance)

2) Find the speed of the object in the initial 6 seconds

3) Show that the speed of the object in the final 6 seconds is twice its speed in the initial 6 seconds.

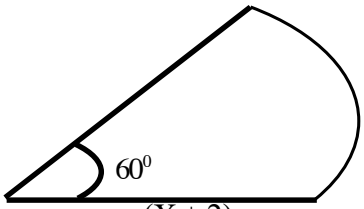
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06) The following two plane figures shows, quarter circle having radius x cm and the sector of circle with angle at the centre equal to 60^0 having radius (x + 2) cm



X cm

Figure - I



(X + 2) cm

Figure - II

1) Find the area of figure II in terms of x .
2) If the area of two plane figures are equal, construct a quadratic equation in terms of x.
3) Find the value of x to its first decimal place by solving above quadratic equation . $\sqrt{6} = 2.4$

Part II B

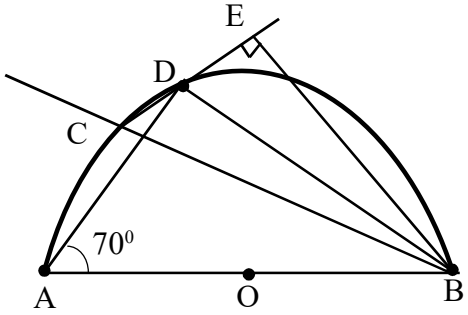
❖ ***Answer five questions only***

07) The metal wire of length 640cm is cut such that the first piece is 10cm long while each of the other piece is 4cm longer than previously cut piece

1) Find the length of the first three pieces.
2) Find the number of all pieces cut from the metal wire.
3) Find the length of largest piece.

08) 1) Construct a triangle ABC so that $A\hat{B}C = 60^0, AB = 7cm \text{ and } Bc = 5.5cm$
2) Measure and write the length of AC
3) Construct the locus of a point equidistant from the sides AB and AC
4) The line drawn parallel to AB through C and the locus drawn in (iii) meet at a point Name it as E
5) Join BE and write down the relationship between the area of $\Delta ABE \text{ and } \Delta ABC$. Write the theorem used here

09) Points C and D are located on the circle shown in the figure where AB is a diameter. BE is the perpendicular from B to CD which is produced to E. BC is the angular bisector of $A\hat{B}D$

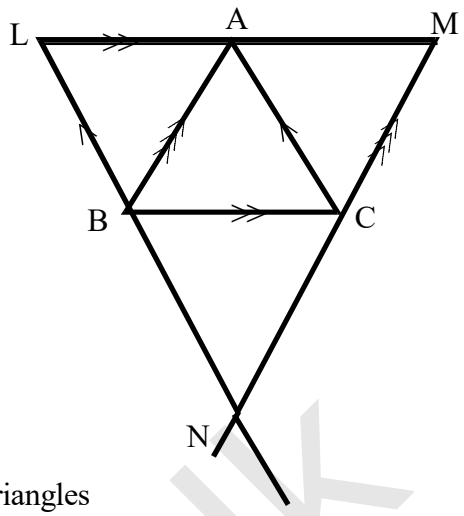


Write the magnitude of each of the following angles and give reasons

1) $A\hat{D}B$ 2) $A\hat{B}C$ 3) $B\hat{D}E$

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10) In ΔABC draw three lines through C,A and B parallel to AB, BC and CA respectively meets on L,M and N



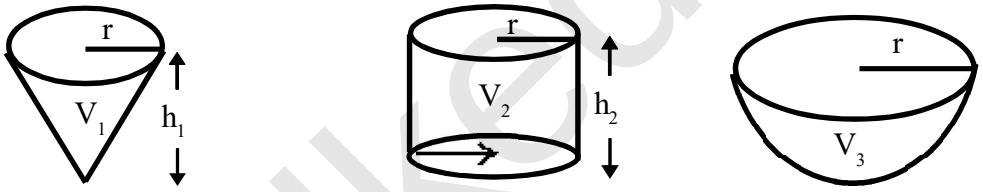
1) Give reasons for the quadrilateral ABCM to be a parallelogram

2) Prove that MC = CN

3) Which angle of ΔLMN is equal to the angle of $B\hat{A}C$ in ΔABC

4) Show that ΔABC and ΔLMN are equi - angular triangles

11) Following diagram shows containers of the shapes of a cone, cylinder and hemisphere with the same radius r units. Capacity of the solids are V_1, V_2 and V_3 cubic units respectively and the hight of the cone and cylinder are h_1 units and h_2 units respectively.

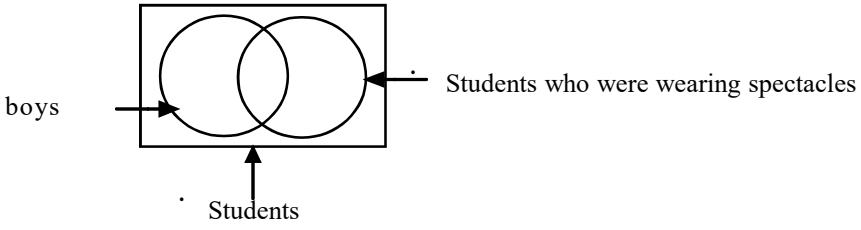


1) If $2V_1 = V_2$ write the relationship between h_1 and h_2

2) If the cone is used five times to fill the container hemisphere gets filled, write h_1 in terms of r

3) When r = 7cm capacity of hemishpere and cylindrical shape containers are equal. Find the value of h_2

12) From a group of 120 students who went on a trip 80 were boys. 3/5 of the girls were wearing spectacles. While the number boys who were wearing spectacles is three times the number of girls who were wearing spectacles.



1) Represent this information in the given Venn diagram

2) How many girls were not wearing spectacles

3) How many boys were wearing spectacles

4) How many students were not wearing spectacles

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