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ஊவா மாகாண கல்வித் திணைக்களம்
Uva Provincial Department of Education

1058

PRACTICE TEST - 2025(2026)

Grade 11	Mathematics - I	Time : 02 hrs.

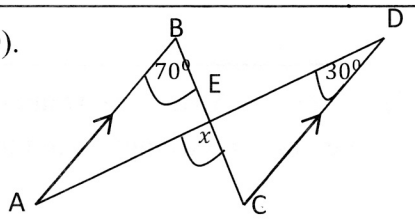
Part A

Answer all the questions on this paper itself.($\boldsymbol{Take\ \pi = \frac{22}{7}}$)

1) It has been estimated that 12 men can finished a certain work within 6 days. How many men required for finished the same work within 4 days.

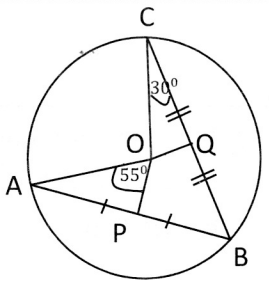
2) A 90^0 sector of a circle is cut out from a circle of radius 21cm. Find the arc length of the sector of the circle.

3) Using the given diagram, find the magnitude of x. (AB//CD).



4) Solve the inequality $3x - 4 \geq 13$ and write the least positive intergal value that satisfies x .

5) The points A, B and C are on the circle with centre O. P and Q are the mid points of the sides AB and BC respectively. If $A\hat{O}P = 55^0$and $O\hat{C}Q = 30^0$, find the value of $A\hat{B}C$.

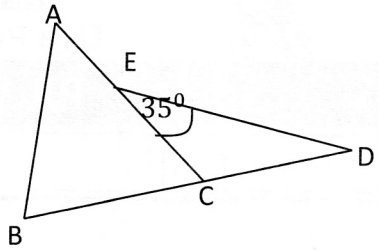


6) The last 9 numbers of a set of 15 numbers arranged in ascending order is given below.

__,__,__,__,__,__,12,15,17,18,20,22,24,25,26

The inter quatile range of the above data is 14. Find the first quatile.

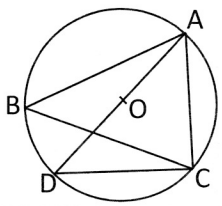
7) In the triangle ABC, If $AB = AC$ and in triangle CDE, $CD = CE$ and $C\hat{E}D = 35^0$, find the magnitude of $B\hat{A}C$.



8) Express $lg3.7 = 0.5682$, in index form.

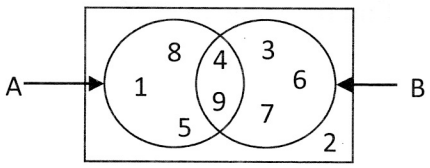
9) There are certain number of milk flavoured and tamarind flavoured toffees in a bottle.The probability of a toffee taken being tamarind flavoured at random from this bottle is $\frac{5}{9}$. If there are 24 milk flavoured toffees in that bottle, find the number of tamarind flavoured toffees in the bottle?

10) The points A,B,C and D are on the circle with centre O. ABC is an equilateral triangle. Find the magnitude of $B\hat{C}D$



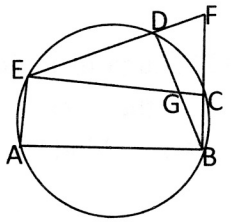
11) If the minimum area of a sheet of paper that requires to cover the curved surface of a right circular cylinder of radius 7 cm and height h cm is $352cm^2$, find the value of h.

12) Find the follwing using the Venn diagram.
a) $n\,(A \cap B)$
b) $A' \cap B$

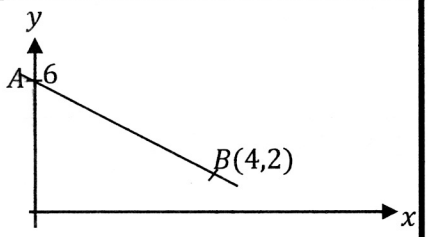


13) Achini can walk on a flat surface at a speed of 3 meters per second, and on a surface with a 20° incline at a speed of 2 meters per second. The path from her house to the bus stop consists of a 50 m straight road with a 20° incline and a 75 m straight road on a flat surface. Find the time it takes for her to go from her house to the bus stop.

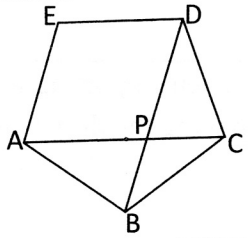
14) A, B, C, D and E are five points on a circle. The produced BC and ED, meet at F. If $B\hat{A}E = 82^0$ and $C\hat{F}D = 66^0$, find the magnitude of $B\hat{G}E$.



15) Express the equation of the straight line AB in the form of $y = mx + c$.



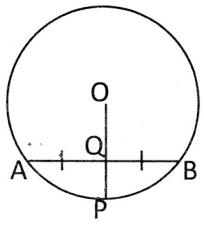
16) ABCDE is a regular pentagon. Name a pair triangles that has to be congruent become AP=PD.



17) The product of two matrices is given below. Find the values represented by *a and b*

$$\begin{pmatrix} 3 & 4 \\ 2 & -1 \end{pmatrix}\begin{pmatrix} 5 \\ a \end{pmatrix} = \begin{pmatrix} 7 \\ b \end{pmatrix}$$

18) In the given circle with centre O, Q is the midpoint of the chord AB. The produced OQ meets the circle at P. If the radius of the circle is 10 cm and OQ:QP = 3:2, Find the length of AB.



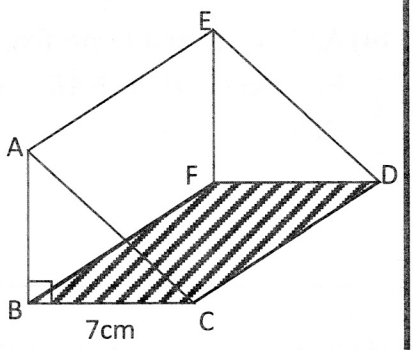
19) Factorize. $2x^2 - 9x + 4$

20) The second term and the third term of a geometric progression are 21 and 63 respectively. Find the

a) common ratio

b) first term.

21) The area of the cross section of the given prism is $28cm^2$ and the area of the shaded BCDF rectangular face is $70cm^2$. Find the volume of the prism.

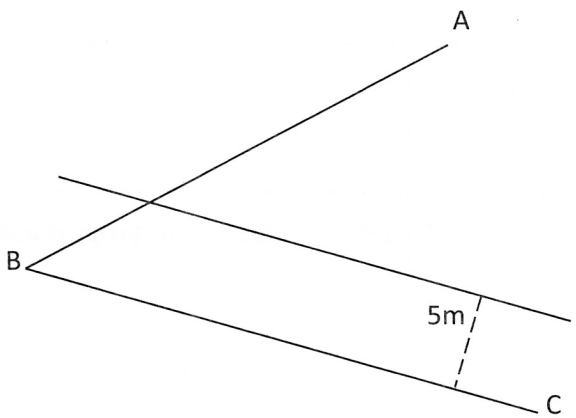


22) Solve . $\frac{1}{2x} + \frac{1}{3x} = \frac{5}{18}$

23) When importing a mobilephone a 40% duty is charged. If the price of a mobilephone after paying the duty was 56000 rupees, find the price of the mobilephone before paying the duty.

24) Find the Least Common Multiple of $2xy, 6xy^2, 9x^2$.

25) A land that is bounded by the straight roads AB and BC given in the diagram. It is required to place a water pot 5m away from the road BC and equidistant to the points A and B. Using the knowledge of loci, find and mark a place to keep the water pot in the given diagram.



Part B

Answer all the questions on this paper itself.($\pi = \frac{22}{7}$)

1) From the money collected for the annual trip of Grade 11 students of Medimaha Central college, $\frac{1}{3}$ was spent for bus fares and $\frac{3}{4}$ of the remaining was spent for the food. After that half of the remaining was spent for the entry tickets to the places they visited. Now the remaining amount is 7000 rupees.

   i. Express the remaining amount of money after giving for bus fares as a fraction from whole.

   ii. Express the amount of money spent for food as a fraction from whole.

   iii. Find the amount spent for food?

   iv. If the number of participants who particiapte for this trip is 84, find the amount of money collected from one person.

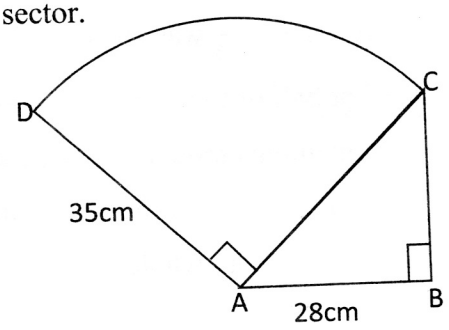
2) Mr Arjuna has a house and a financial building within a Municipal Councill area. 12% annual rates is charged for the house as rates.

   i. If the annual assessed value of the house is 24000 rupees, find the rates charged for a quater.

   ii. The ratio between the annual assessed value of the finacial building and the house is 5:2. If 3600 rupees are paying as rates for the financial building for a quater, calculate the annual rates percentage charged for the finacial building and find how many times is it from the annual rates percentage charged from the house?

   iii. 2% reduction is given when paying the rates for annum one time for the house and building at the begining of the year. Find the profit he can gain through this process.

3) A rough diagram of a badge that was designed for a math society is given below. It consists of ABC right angled triangular shape and ACD sector.



i. Find the area of the ACD sector

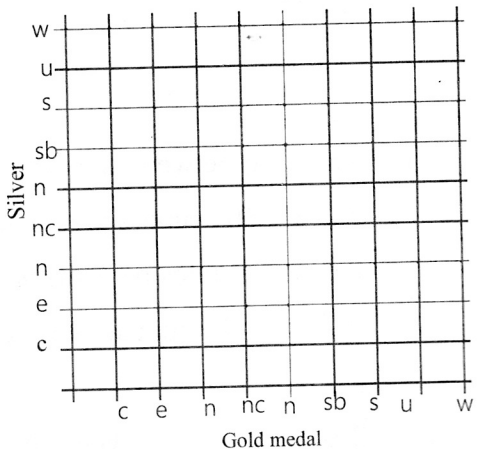
ii. Find the length BC and the area of the badge

iii. It is required to attach 2 strands of gold thread along the boundary of this logo. Calculate the minimum length of thread required for this.

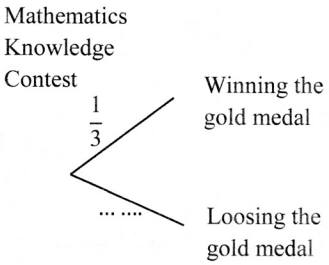
4) (a). The Mathematics Knowledge Contest is one of the events of All Island Mathematics Competition. One team from each of the nine provinces participates in this contest. The team that wins the first place receives the gold medal and the team that wins second receives a silver medal.

i. Indicate the relevant sample space of winning the awards in the given grid using the mark ×.

ii. Enclose the event of winning the gold medal or silver medal by the team Uva in the grid and find the probability of it.



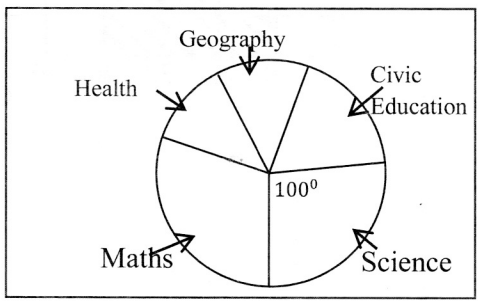
b) The Mathematics Knowledge Contest and the Mathematics Puzzle Solving Contest are two parts of All Island Mathematics Competition. The probability of the Senior Uva Provincial team winning a gold medal in the Mathematics knowledge Contest is $\frac{1}{3}$ and the probability of winning a gold medal in the Mathematics Puzzle Contest is $\frac{4}{5}$. Accordingly, an incomplete tree diagram drawn to indicate whether they will win or not a gold medal in this year's All Island Mathematics Competition is shown below.



i. Complete the tree diagram by indicating the corresponding probabilities.
ii. Extend the tree diagram for the event of winning or loosing the gold medal in the Mathematics puzzle competition.
iii. Using above, find the probability of winning a gold medal in one event only in these two competitions.

5). (a) The following pie chart is drawn to depict the bilingual teachers who were called to the National Institute of Education to introduce new education reforms.

- $\frac{1}{3}$ of the total number of teachers are Mathematics teachers.
- The number of mathematics teachers is twice the number of Civic Education teachers.
- The number of Geography teachers and Health teachers are equal.



i. Find the number of Mathematics teachers if the number of Science teachers who participate in this programme is 40.

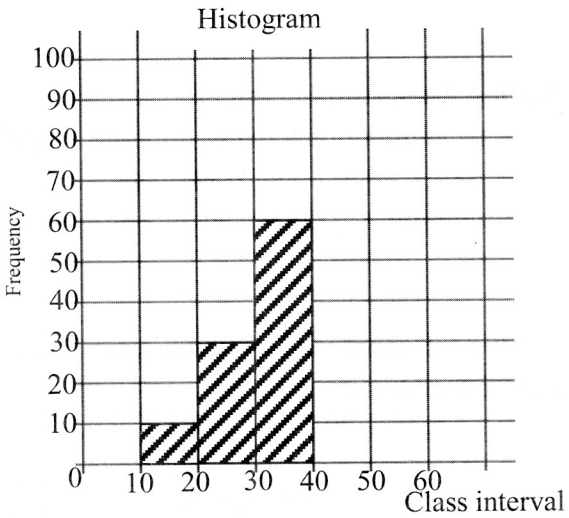
ii. Find the magnitude of the angle of the sector representing the Geography teachers.

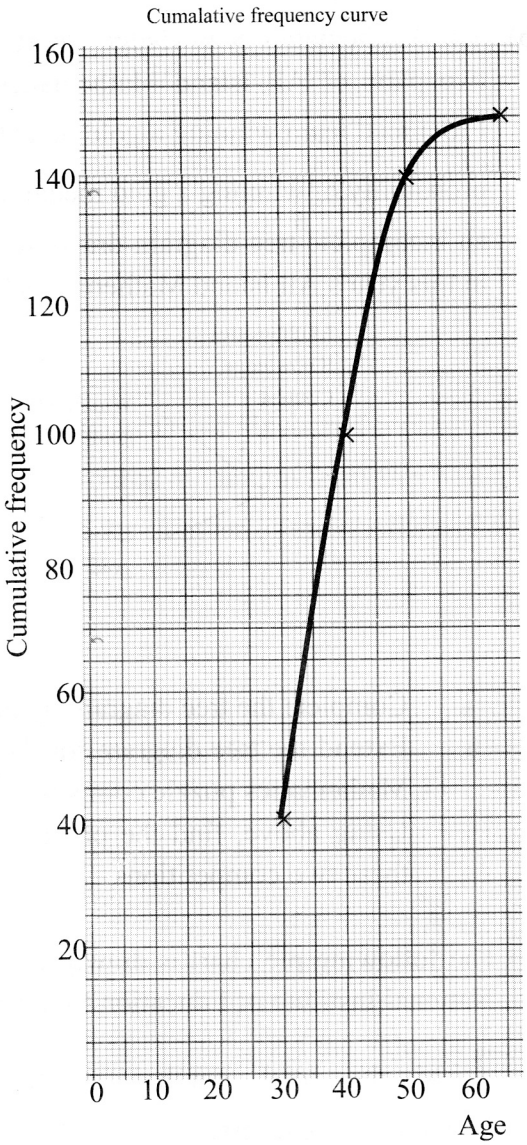
b) The incomplete histogram and its corresponding cumulative frequency curve drawn to represent information from a frequency distribution on the ages and number of participants of a group of 150 people who attended a function are shown below.

i. Complete the cumalative frequency curve using the histogram.

ii. Complete the histogram using the cumalative frequency curve.

iii. Find the median age of a participant.





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Uva Provincial Department of Education

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PRACTICE TEST - 2025(2026)

Grade 11	Mathematics - II	Time : 03 hrs.

Additional Reading Time – 10 minutes

- Answer ten questions selecting five questions from Part A and five questions from Part B.
- Each question carries 10 marks. Write the relevant steps and the correct units in answering the questions.
- The volume of a right circular cone of base radius r and height of h is $\frac{1}{3}\pi r^2 h$

Part A

1)

Bank A
An annual compound interest rate of 10% is paid for fixed deposits. Interest is added to the principal annualy.

Company B
Can purchase a share for 60 rupees. Dividend of 3.50 rupees paid annualy per share.

Mr. Gunasiri received an EPF of Rs. 1 500 000 and gave Rs. 300 000 of this amount to his wife. He deposits exactly half of the remaining amount in Bank A for two years. He invests the remaining half in purchasing shares of Company B. At the end of two years he withdraw the deposited amount and the interest from the bank A. At the end of two years he sells all of the shares at Rs. 66.80 each after receiving dividends from the company B. Show that the total profit from these two investments at the end of the two years is 22% of the amount invested.

2) A table containing x values and corresponding y values to draw the graph of the function $y = (x - a)^2 + b$ in the classinterval of $-2 \leq x \leq 4$ is given below.

x	-2	-1	0	1	2	3	4
y	4	-1	-4	-5	-4	-1	4

i) Using the standard axes and a suitable scale, draw the graph of the function on a graph paper based on the table values.

ii) Write the coordinates of the turning point of the function.

iii) Deduce the values of a and b and express the above function in the form of $y = px^2 + qx + r$. p, q, r are three constants. Using it find the positive root of the quadratic equation $x^2 - 2x - 4 = 0$ to the nearest first decimal place.

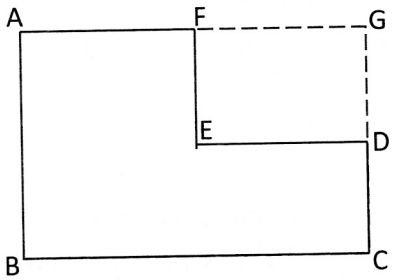
iv) Write the range of the values of x, which the function decreases within the interval of $-4 < y < 4$

3) A plant sales shop has coconut seedlings and mango seedlings for sale. The price of 2 coconut seedlings is Rs. 100 more than the price of 3 mango seedlings. Mr. Siriwardana bought 7 coconut seedlings and 4 mango seedlings from this shop for Rs. 4 700.

i) By taking the price of a coconut seedlings as x and the price of a mango seedlings as y, construct a pair of simultaneous equations using the above information and by solving them find the price of a coconut seedlings and the price of a mango seedlings separately.

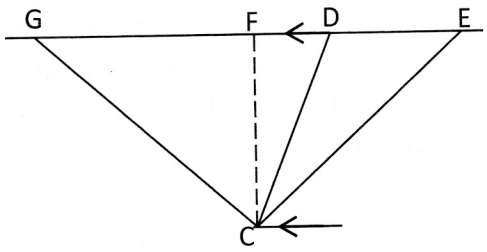
ii) Find the number of mango seedlings that can be purchased for exactly Rs. 10 500 if the ratio of the number of coconut seedlings to mango seedlings is 4:5.

4) A rectangular hall ABCG, where the width AB is $2x$ and the length BC is 2 metres more than width is shown in the diagram. Inside this hall a rectangular portion of EFGD is reserved for the school cooperetive shop such that the length and the breadth is exacly half the length and the breadth of the hall. The area of the remaining part after reservation for the shop is $93m^2$. Show that x satisfies the quadratic equation $x^2 + x - 31 = 0$ and solving it, find the value of x to the nearest first decimal place. ($\sqrt{5} = 2.23$)



Find the perimeter of the part ABCDEF

5) An aircraft flying in a straight line at a constant speed of 720 km per hour from a constant height of h. The pilot of this aircraft sees Air Traffic Control tower C at an angle of depression of 30°58' from position E. One minute later, the officer at the tower C sees the aircraft flying at an angle of elevation of 45° at the position D. The flight path of the aircraft and the air traffic control tower lie in the same vertical plane.



i) Copy the diagram into your answer script and include the given data in it.

ii) Find the length DE.

Using the trigonometric ratios,

iii) By taking CF=h, express the value of EF interms of h and find the value of h.

iv) When at the point G, if GF=36km ,calculate the magnitude of $C\hat{G}F$

6) The information about the number of packets containing 100 Sesame balls prepared by a certain sweet manufacturer in 40 days is shown in the table below. (Here, class interval 50-100 represents 50 or more but less than 100.)

Number of packets of Sesame balls (Class interval)	50-100	100-150	150-200	200-250	250-300	300-350
Number of days (Frequency)	4	6	7	10	9	4

i) Write the modal class of the distribution.

ii) Find the mean number of packets of Sesame balls he produced in a day.

iii) If the cost of a Sesame ball is 11 rupees and the selling price of a packet of Sesame balls is 1500 rupees, show that his expected income by selling is less than 10 million rupees in 30 days.

Part B - Answer 5 questions only.

7) Use only a straight edge with a cm/mm scale and a pair of compasses for the following constructions. The construction lines should be drawn clearly.

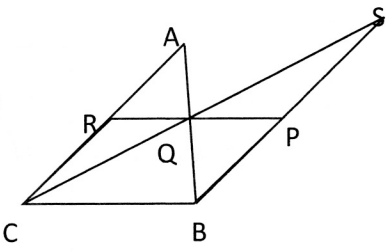
i) Construct the line segment $AB = 11cm$ and construct a semicircle with the diameter AB.

ii) Mark a point C on the semicircle such that $BC = 6cm$. Complete the triangle ABC and construct a tangent to the circle at C.

iii) Construct the bisector of $A\hat{B}C$ and name the point it intersects the arc ACB as P. Construct a perpendicular to AB from P.

iv) Join the lines and give reasons for $C\hat{A}P = C\hat{B}P$.

8) In the given triangle ABC, BC= AC, CQ⊥AB and CR=RQ.



i) Prove that $ACQ\Delta \equiv BCQ\Delta$ and Prove that R is the midpoint of AC.

ii) If $AR = QP = PS$, Prove that ARBP is a paralleogram.

iii) Find the value of $\frac{Area\ of\ BRP\Delta}{Area\ of\ quadrilateral\ ACBS}$.

9) Mahendra left out from his house on a Motor Cycle to visit his friend, traveling 5 km in the first hour. Thereafter, each hour he traveled 3 km more than the distance covered in the previous hour. He reached his friend's house at the end of 11 hours. On the following day, in the first hour, he started his journey to go to his home from his friend's home by increasing the distance by 3 km more than the distance covered in the last hour of the previous day, and thereafter, each hour he traveled 3 km more than the previous hour.

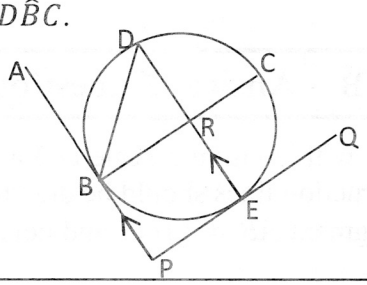
i) Write the distance seperately traveled in the first three hours in order on the day he visited his friend. Indicate whether that distance is in arithmetic or a geometric progression.

ii) Find the distance he traveled in the 11^{th} hour and find the distance between Mahendra and his friend?

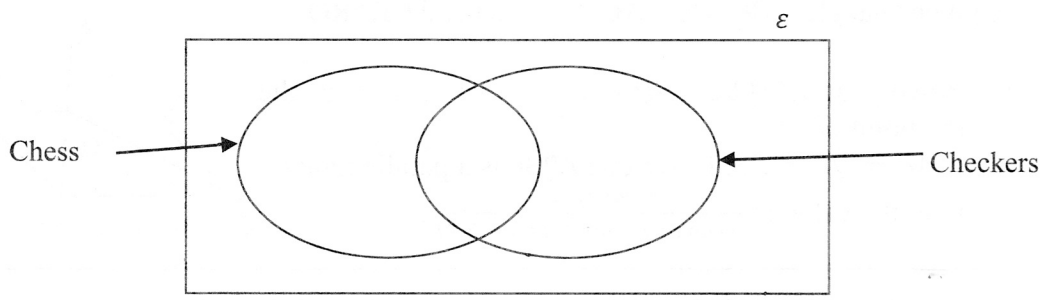
iii) Calculate the time it takes to return from the friend's house to Mahendra's house?

10) A soild right circular cone of base radius r and height a made by melting a cylinderical iron rod of cross sectional area of $9a$ and height $\frac{2a}{3}$ so that the metal would not be wasted. Show that, $r^2 = \frac{18a}{\pi}$. Using the logarithmic tables, find the value of r^2, to the nearest second decimal place, when $a = 0.281$ and $\pi = 3.14$ and find the value of r.

11) B, C, D and E are four points on the circle. ABP is a tangent drawn to the circle at B and $A\hat{B}C$ bisected by BD. $AP//DE$ and PQ is the tangent drawn to the circle at E. Lines BC and DE intersect at R. Such that RD=RC, show that DE is the diameter, show BDCE is a rectangle and $B\hat{P}E = 180^0 - 2D\hat{B}C$.



12) There are 50 members in the sports club of Ramanujan College. Among them, all those who play both Chess and Checkers also play Carrom. The number of members who play Checkers is 15. Out of them 9 are engaged in at least two games. $\frac{1}{10}$ of the total members participate in all three games. 7 players are involved only in two games mentioned above. 13 members do not participate in any of the three games, while 31 members do not take part in Carrom.



i) Copy the above Venn diagram onto your answer script and insert the set of the members who play carrom suitably in the Venn diagram.
ii) Insert the given data in the Venn diagram.

Using the Venn diagram,

iii) Find the number of members who participate in only one game.
iv) Shade the region which represents the members who participate for only two games.