Minuwangoda Education Zone

Second Term Evaluation - 2025

Grade - 10

Mathematics II

Name: ..... Time: 3 hours

- Answer 10 questions by selecting 5 questions from part A and 5 questions from part B.
- Each question carries 10 marks.
- The volume of a right cylinder with the radius of the base r and the height h is $\pi r^2 h$

PART A

Answer five (05) questions only.

01) The table of values for the function of $y = 3 - x^2$ is shown below.

x	-3	-2	-1	0	1	2	3
y	-6	.....	2	3	2	.....	-6

i. Fill in the blanks in the table.

ii. Plot the graph of the function $y = 3 - x^2$ by taking 10 small division as 1 unit along x and y axes.

iii. From the graph

a) Write the maximum value

b) Coordinates of the maximum points

c) Equation of the axis of symmetry

d) Range of x that the function is positive.

02)

i. Simplify $\lg 5 + \lg 8 - \lg 4$

ii. Simplify using logarithmic table. $\frac{33.47 \times 6.4}{101.3}$

iii. Simplify . $\frac{5(x+y)}{x^2-y^2} - \frac{3}{x-y}$

iv. factorize. $3x^2 - 4x - 4$

03)

a) There are 38 students in a class. After Rs.200 each girls and Rs.100 each boys are procured the total amount was Rs.5800

i. Build up a pair of simultaneous equations by getting number of girls as x and number of boys as y.

ii. Find the number of boys and girls separately by make equal the coefficient of x and .

b) Solve $-3x < 15$. Find the minimum value that x can take.

04) Rs. 200 000 was borrowed from a certain finance company at 12% of simple interest rate to pay back after 3 years.

i. Calculate total interest to be paid in 3 years.

ii. Find the total amount that should be paid at the end of the third year.

iii. If the interest and, the amount was deposited in an another finance company at 2% monthly simple interest rate, Find monthly total income

iv. Is the amount that is received from deposited amount exceed the loan when the time period of the loan is over. Give reasons for the answer.

05) Below table shows the distance of motion of a certain object and the corresponding time.

Time (Seconds)	2	4	6	8	10	12
Distance (Meters)	10	20	30	50	70	90

i. Draw a graph of distance and time by selecting time along X axis and distance along y axis.

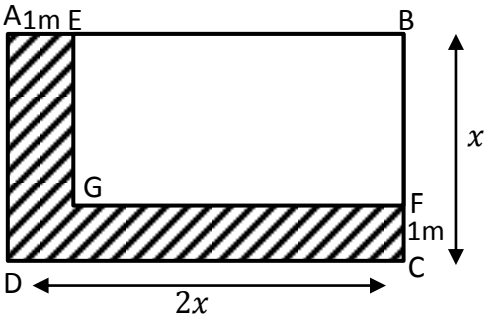
ii. Find the speed in first 6 minutes.

iii. Find the speed in last 6 minutes.

iv. Show that the speed in last 6 minutes is twice of the speed in first 6 minutes.

06) Figure shows ABCD rectangular shaped plot of land with length $2x$ metres and breadth x meters.

As shown in the figure, from one length side and one breadth side 1m width trip has been separated to grow grass. Vegetables have been cultivated in remaining portion ($AB = 2x, BC = x$)



i. Write the length of un shaded part in terms of x

ii. Write the breadth of the un shaded part in terms of x

iii. If the area of the region used to cultivate vegetables is $21cm^2$. Show that x satisfies the quadratic equation $2x^2 - 3x - 20 = 0$

iv. By solving the above equation find the value of x.

v. By using the value obtained for x, find the area of ABCD plot of land

PART B

Answer five (05) questions only.

07) Use only cm/mm straight edge and a pair of compass to do this construction.

i. Draw a circle with radius is 4cm.

ii. Draw any radius on it and Name the intersection point where it meets the circle as D.

iii. Construct the perpendicular bisector of the radius. Name the two ends where it meets the circle as AB.

iv. Draw the chord BC, such that BC=5cm and C lies on major segment.

v. Mark the point E on the circle where equidistance to the lines AB and BC and complete the quadrilateral ABCE on the circle.

08) n^{th} term of a certain number pattern is $5n - 3$

i. Find first 4 terms of its.

ii. Find 15^{th} term

iii. What is the common difference.

iv. Which term is 57 in the pattern

09) B is located 80m away from A and bearing of 060° C is located 60m away from B and bearing of 150°

i. Sketch a diagram and mark above information on it.

ii. Draw a scale drawing by getting a suitable scale.

iii. Which type of triangle ABC

iv. Find the length AC using the scale diagram

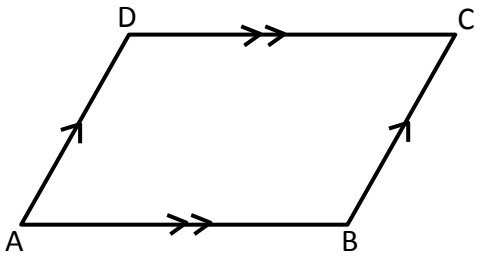
v. Verify the length using an another method.

10) $PQ = PR$ in the isosceles triangle PQR. The line drawn parallel to QR intersects sides PQ and PR at T and U respectively. $A\hat{Q}T = B\hat{R}U$

i. Draw a suitable figure and Mark above information on it.

ii. Prove that triangle $AQT \equiv URB$

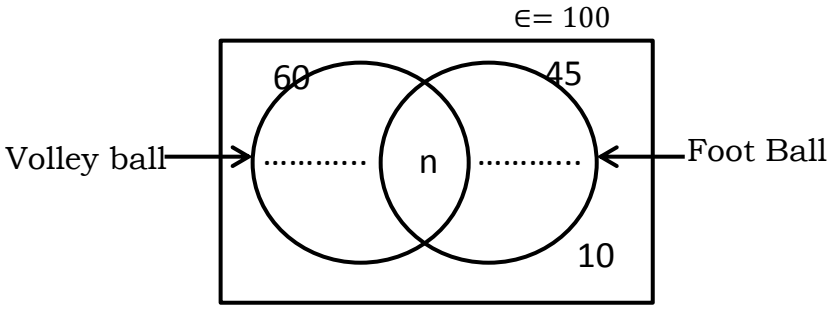
11) $ABCD$ is a parallelogram. The line drawn through C such that to parallel to diagonal BD meets the side extended AD at X-BX and DC intersect at P.



i. Prove that DBCX is a parallelogram

ii. If BD ⊥ AX, Prove that diagonals of the parallelogram DBCE are equal in length

12) The players of a certain sport club practice both volleyball and football



Using the information of Venn diagram

i. Write suitable values for the blanks using n

ii. Build up simple equation to find out the value of n

iii. Find the value of n

iv. Find number of players who are done only one sport.

v. Shade the region who are in neither volleyball nor football