Zonal Education office – Anuradhapura

G.C.E (O/L)- 2021 / 2022

REHERSAL PAPER-MATHEMATICS(32 E)

Time 02 Hours

Paper 1 - Part A

Answer all questions in this paper it self .

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01) Find the value of , $\frac{6}{8} \div 2$

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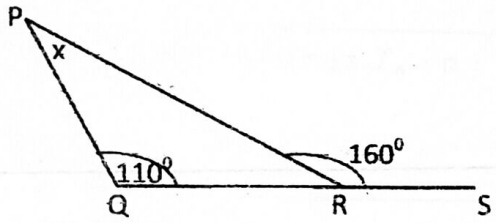
02)



Find the value of 'x' according to the given figure.

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03) Find the

I mode

ii median of the data distribution ,4,5,6,1,2,4,7

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04)If the magnitude of an interior angle of an interior angle of a regular polygon is 156°,find ,

I. The magnitude of an exterior angle
II. The number of sides of the polygon

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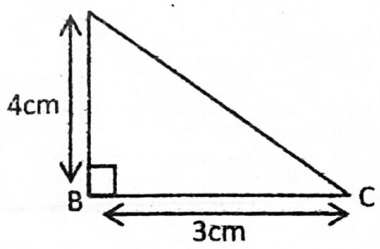
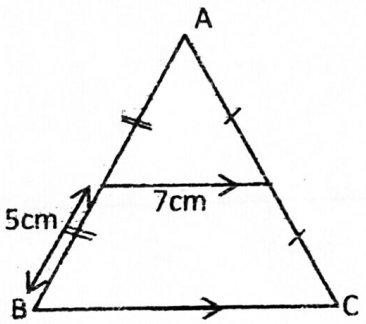
05)If the buying price of an article is 3000/= and the selling price is 2700/= find the loss percentage .

06) Find the area of the triangle ABC.



07) If lg 3= 0.4771,Find the value of lg 30.

08) According to the information is the figure find the length of the side "BC"



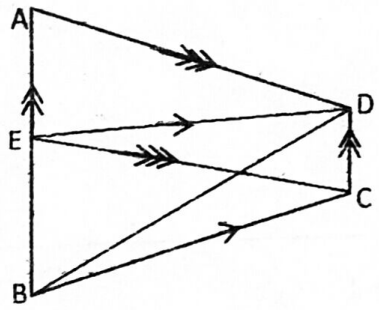
09) Find the value of $\sqrt{7}$ to the 1^{st} decimal.

10) If radius of a sector is 7cm and the angle at the centre is 45° find the perimeter of the sector.

11) write the equation of the straight line which is the gradient is +2 and the intercept is -5

12) solve , $\frac{x}{3} - 1 = 8$

13) According to the given figure point "E" is on the straight line segment AB , If the area of the parallelogram AECD is $6cm^2$,Find the area of the triangle ABD.



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14) Fill in the blanks of,

$(3-x)^2 =$ ☐ $-$ ☐ $+ x^2$

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15)Make "d" the subject of the Formula ,$T_n = a + (n - 1)\,d$

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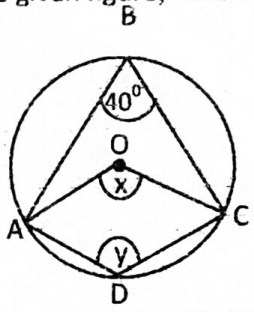
16)In the given figure, ABCD is a cyclic quadrilateral , based on the given information find the values of 'x' and 'y'



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17) . Find the Probability of , getting a multiple of '2' or multiple of '3' when an unbiased die with its faces numbered 1,,3,4,5,6,7and 9 is rolled.

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18) Find the time it takes ,for a thank of capacity 480 L to be filled completly , with a pipe through which water flows at a rate of 8 litres per minute

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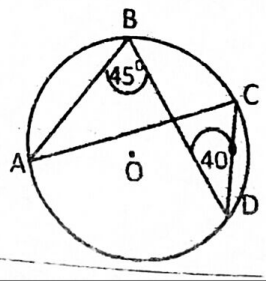
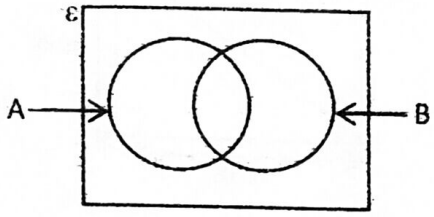
19) Find the magnitude of $A\hat{C}D$ basedon the given information.



20) Shade the region of $(A \cap B)^1$ OF the given venn diagram.



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21) Slove the inequality and represent the solutions on numberline $3 + x \geq 1$.

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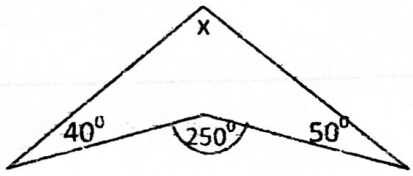
22) According to the figure given ,find the value of 'x'



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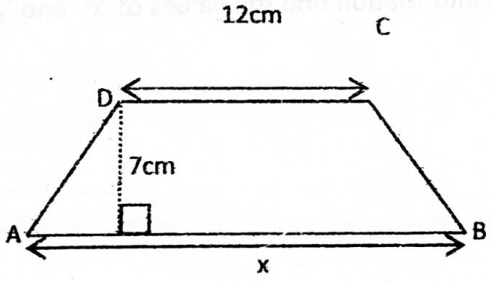
23)If the area of ABCD Trapezium is 112 cm^2 find the value of 'x'



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24)Find the 15^{th} term of the arithmetic progression 4,7,10 .....

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25) Sketch the construction line of a drain that is necessary to locate equidistant from two trees named 'p' and 'Q'

Paper 11 - Part B

Answer all questions in this paper it self .

01) Mr Ajith though to use $\frac{3}{5}$ Of his land for paddy cultivation and $\frac{1}{2}$ of the remaining land for black gramms (udu) cultivation. The remaining 8 acres of land was used for corn cultivation.

i. what fraction of the total land used for the cultivation of the black gramms?(undu).

ii. what fraction of the total land used for the cultivation of corn.

iii. what is the total area of Mr Ajith's land .

iv. If 3 bags fertilizer per an acre are given as the fertilizer subsidy for the paddy cultivation ,How many bags of fertilizer are received by Mr Ajith .

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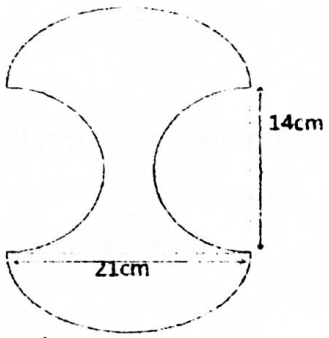
02) Sagarika constructed a decoration by using the semicircular laminas is given below .

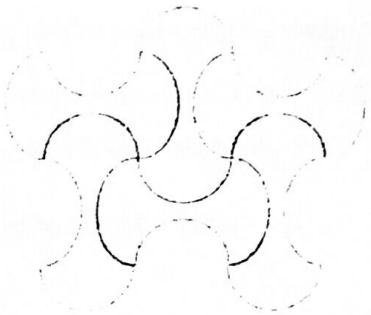


i What is the total height of the decoration.

ii Sagarika decided to attach a thin ribbon around the border of lamina . find the length of the ribbon needed

iii Find the minimum area of a rectangular lamina witch can be used to cut out such a decoration.

Draw a sketch of another figure that can be constructed using such 6 pieces with the measurements.



03) a) The annual estimated value of a house is Rs.52,000 The Urban council charges an annual rates of 8% for this property.

i. What is the annual rates changed for the house?

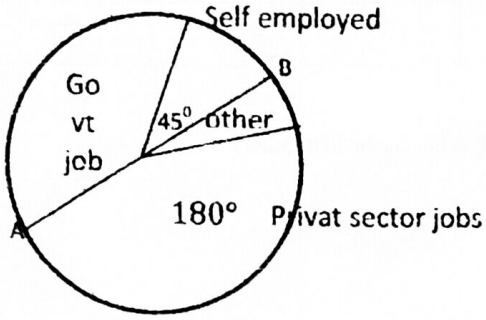
ii. What is the rates is paid for a quarter

b) A tariff of 12 % is charged for an imported computer the price of the computer without the tariff is 225 000/ =

i. What is the price of the computer , with the tariff?

ii. find the selling price of the computer ,if it sold with 5% of a profit of the expences

04) Information of a survey collected from a group of student on their parents livelihoods is depicted in a pie chart AB is a diameter the pie chart.



i. Find the angle of the sector of the sector represent the government sector jobs

ii. If the number of parents engaged in government jobs in the pie chart is 15 , find the number of self employees

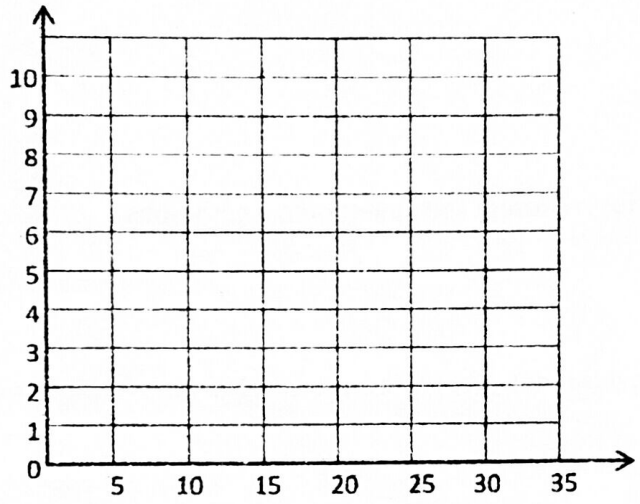
iii. Find the ratio of the number of the number of parents engaged in government jobs to the number of parents engaged in private sector jobs in the simplest from.

iv. Find the total number of students in this group.

05) The table containing marks scored by a group of student for a test

Class intervals	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35
frequency	2	3	6	8	4	4	3

i. Represent above information by a histogram on the given codinate plane.



iii. Draw the frequency polygon on the histogram

iv. Find the model class of the data distribution.

iv. indicate the number of students who are scoring than or equal 20 marks as a percentage of the total number of students.

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REHERSAL PAPER-MATHEMATICS(32 E)

Paper 11

Time 03 Hours

Answer ten questions, selecting five questions from part A and five questions from part 'B'

- Give Correct steps and the units with your answers.
- Each questions carries 10 marks
- The Volume of a right cylinder of a radius r and heigh is $\pi r^2 h$
- The Volume of a right circular cone with base radius r and heighth is $\frac{1}{3}\pi r^2 h$

Part A

- Part A (Answer 5 questions

01) The Government has decided to charge another Rs 20/= for each 100/= that spends importing 1 kg of dates The headline of a daily news paper as given above

i. If the earlier tax for imported datesd is 35% find the new percentage of tax.

ii. If the imported price of 1 kg of dates is 300/= find the new amount of tax on 1 kg of dates

iii. To issue 1kg of this type of dates to the market after packing It will be cost Rs 35/= further more .then find the amount of expenditure for 1kg of dates to provide to the market by the importer

iv. If the importer issues 1 kg of dates by Rs 575/= find his profit percentage

v. The seller sells 1 kg of dates with 12% of the profit find the price of 1 kg of dates in the market

02) An incomplete table of drawing the graph of the function $y = (x-3)^2 - 10$ give below.

x	- 1	0	1	2	3	4	5	6	7
y	6	- 1	- 6	- 9	-	- 9	- 6	- 1	6

i. Fill the blank of the table with the calculation .

ii Draw the graph of the function taking 10 small divisions along both x and y axes as 1 unite . using the graph ,

iii. find the minimum value of the function

iv. write the co- ordinates of the vertex

v. write the rang of x which the function is negatively decreasing

03) The following frequency distribution shows the amounts of sugar sold by a sales out let on each day during 40 days

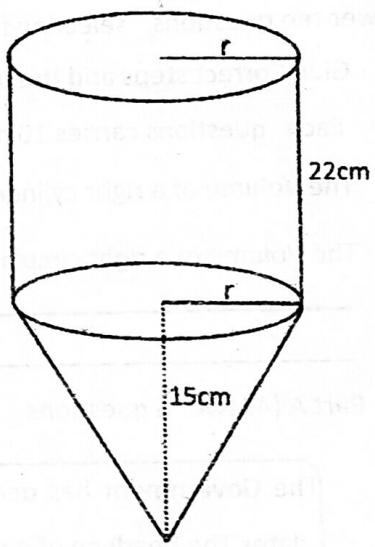
Amount of sugar sold	51 - 75	76 - 100	101 - 125	126 - 150	151 - 175	176 - 200	201 - 225
Number of	4	7	12	8	6	2	1

i. what is the modal class of this distribution?

ii. find the mean amount of sugar sold per day.

ii. If the profit earned by selling 50kg of a bag of sugar is 400/ find the total amount of profit earned by selling sugar during 30 days.

04) The compound object in the figure consists of a hollow cylinder of radios 'r' and the height 22cm and aright circular hollow cone of height 15cm and radius 'r' the volume of a cuboid whose the length width and height are 20cm ,10cm and 8 respectively



i. write down the volume of the cylinder in terms of π

ii. write down the volume of the cone in terms π

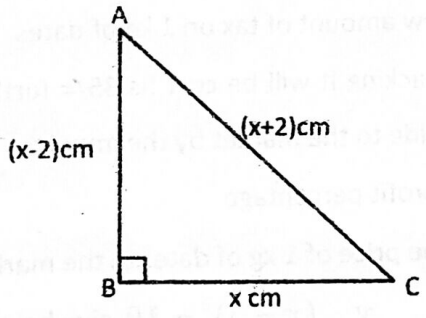
iii. show that the volume of the compound object is $27\pi r^2$

iv. show that $r = \dfrac{40}{\sqrt{27\pi}}$

v. find the value of 'r' to the 1^{st} *decimal* using the logarithm table (take $\pi = 3.14$)

05) i. simplify $(32)^{\frac{2}{5}} \times \dfrac{1}{(81)^{\frac{3}{4}}}$

ii. factorize $8a^2 - 16a - 10$



v. Accoding to the information given in the diagram find the value of 'x'

iv. find the lengh of AC

06) The Price of a pen is Rs a

The Price of a book is Rs b

The Price of an eraser is Rs c

Kamal bought 4 Pens ,6 books and 3 erasers. Sunil bought 3 pens, 4 books, and an eraser

i. write two algebraic expressions for the amounts of money spent , both Kamal and Sunil Separately .

ii. From the matrix including the co-efficient of above algebraic expressions and write down the order of the matrix.

iii The price of 3 pens and 5 books is Rs .245 The price of a book is Rs 25 more than the price of a pen Build up an pair of simultaneous equation using above information and find the price of a pen and a book by solving the equations.

iv If the price of an eraser is Rs.5/= less than the price of a pen,find the price of an eraser

v. Find the amount of money spent by Kamal and Sunil Separately

Part B

07) (a) In the arithmetic progression 4, 7, 10, ... ,

i. Find the 45^{th} term

ii. Find the sum of all the terms from the45^{th}term to 70^{th}term

(b) If a person takers a loan of Rs 50000/= at a compound interest rate of 8% per year

i calculate the interest he has to pay at the e end of the 1^{st} year .

ii. calculate the total amount required to repay the entire loan in two years

08) using only a straight edge with cm/mm Scale and a pair of compasses , and showing the construction lines clearly

i. construct triangle ABC with $AB = 8cm$ $B\hat{A}C = 60^0$ $AC = 6.5\ cm$

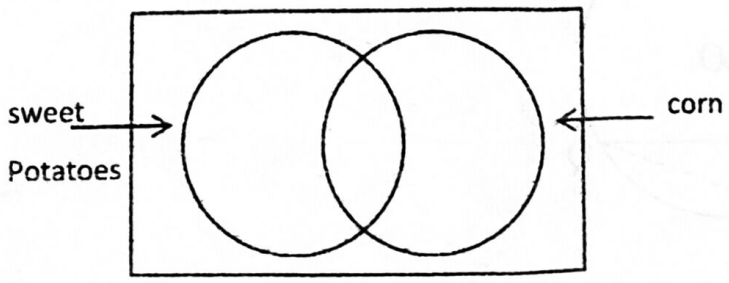
ii. construct the locus of the point moving equi-distant from the two verities A and c

iii. construct the circle which passes through points $A, B, andC$

iv. Measure and write down the radios of the circle

09) In a certain village, 50 farmers grow sweet potatoes and 20 farmers grow only corns Furthermore the number of those who do not grow sweet potatoes is 28

i. Copy the given Venn diagram to year answer script and represent given information in it



ii. How many of the farmers grow only sweet potatoes?

iii. How many of the farmers grow both crops?

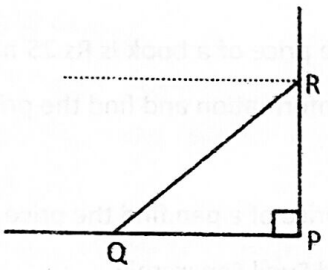
iv Find the probability of a famer selected random from the village being which grow corns.

10) a) When observed harbour P a point Q , the harbour p is located at a distance of 40 km on a bearing of 050° harbour p When observed from harbour R is located at a distance of 50 km on a bearing of 120^0

I .Represent the above information in a sketch.

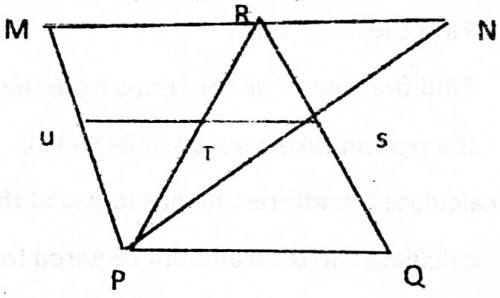
ii. Talking 1 cm to represent the 10km as the scale draw the scale diagram and find the actual distance from Q to R

b) Diagram shows a vertical building ps situated on a horizontal ground. From point R at the building ,observes point Q on the ground with an angle of depression of 42 ° and PQ =12m Find the distance of PR to the 1^{st}decimal



11) a) Write the converse of the theorem of "the straight line segment through the mid points of two sides of a triangle is parallel to the third side and equal in length to half of it "

b) in the given, figure S and T are the mid points of the sides Q R and P R respectively MRN/PQ and PM//QR Prove that ,



i. $PU = UM$

ii. $PS = SN$

iii. $MR = RN$

iv. $PQNR$ is a parallelogram

12) MN and PQ are two chords of the circle with center 'o' the chords are intersected at"R"and PR=RN prove that

i. $PRM\triangle \equiv QRN\triangle$

ii. $MN = PQ$

iii. OR is the bisector of the angle $M\hat{R}Q$