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 மேல் மாகாணக் கல்வித் திணைக்களம்
 Department Of Education – Western Province

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 முதலாம் தவணை பரீட்சை - 2019
 First Term Evaluation

ශ්‍රේණිය }
 தரம் } 10
 Grade }

විෂයය }
 பாடம் } Mathematics
 Subject }

පත්‍රය }
 வினாத்தாள் } II
 Paper }

කාලය }
 காலம் } 3hours
 Time }

- ◆ Answer 10 questions selecting 05 questions from part A and 05 questions from part B.
- ◆ Each question carries 10 marks. This question paper carries 100 marks.

Part A

Answer 05 questions only.

01. (a) A person who produce shoes spends Rs. 900 to manufacture a pair of shoes. He sells the pair of shoes by keeping a profit of 20% to a vendor.
- i. How much the vendor has to pay for the pair of shoes?
 - ii. The vendor sells the pair of shoes to a customer at a profit of 25%. How much the customer has to pay for the pair of shoes?
 - iii. Write with reasons whether the manufacturer or the vendor earns a greater profit.
- (b) The marked price of a refrigerator is Rs. 60 000. A discount of 12% is given when selling it.
- i. Calculate the discount given for the refrigerator.
 - ii. Find the selling price of it.

02. An incomplete table of values prepared to draw the graph of the function $y = 3x - 2$ is given below.

x	-2	-1	0	1	2
y	-8	-2	4

- i. Fill in the blanks of the table.
- ii. Draw the graph of the above function.
- iii. Find the value of x, when $y = 7$.
- iv. Draw the graph of the function $y = 3x + 1$ in the same Cartesian plane.
- v. What can you say about the two graphs? Explain.

03. (a) i. Simplify. $(2a + b)(a - b)$
 ii. Find the factors. $2a^2 - 8$
 iii. Find the least common multiple of the following algebraic expressions.
 $3(x - y), (x^2 - y^2)$
- (b) i. If the length of a side of a square shaped ground is $(x + 5)$, find the area of it in terms of x .
 ii. If $x = 5$, find the area of the ground.

04. (a) Capacity of a large bottle of fruit juice is 2.5l. This fruit juice is used to serve 325 people who were participated for a party. If 250ml of fruit juice was served for a person, find the minimum number of large bottles of fruit juice used for this purpose.

(b) The area of the base of a square shaped container is 360cm^2 . If the container is filled with 7.2l of water, find the height of the water level.

05. (a) Solve the following simple equations.

$$\frac{a + 2}{3} = 4$$

$$3x - 1 = 9 - 2x$$

(b) Price of two mangoes and an orange is Rs. 100. The price a mango and an orange is Rs. 70. By taking the price of a mango as x and the price of an orange as y , write down a pair of simultaneous equations and find the price of a mango and the price of an orange separately by solving it.

06. An incomplete table of values containing the information on the number of bananas in 100 bunches of banana is given below.

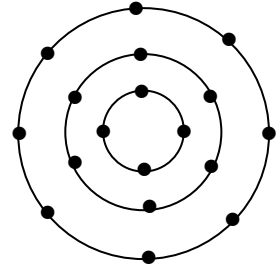
Number of bananas in a bunch of banana	Number of bunches (f)	Mid value (x)	fx
50 – 60	20		
60 – 70	25		
70 – 80	30		
80 – 90	15		
90 – 100	10		

- What is the modal class of the distribution?
- Complete the table and find the mean number of bananas in a bunch of bananas.
- If a banana is sold for Rs. 8, show that the total income gained by selling the 100 bunches of bananas does not exceed Rs. 58 000.

Part B
Answer 05 questions only.

07. The figure shows a circular decoration made with bulbs.

- i. Starting from the smallest ring, write the number of bulbs in each ring in ascending order.
- ii. Write an expression for the number of bulbs in the n^{th} ring in terms of n .
- iii. Hence find the number of bulbs in 15^{th} ring.
- iv. In this decoration, which ring contains 62 bulbs.
- v. Show that the number of bulbs in the $(n - 1)$ ring is $2n$.



08. For the following constructions, use only the straight edge with the scale cm/mm and the pair of compass only. Show the construction lines clearly.

- i. Construct the PQR triangle where $PQ = 7\text{cm}$, $\widehat{QPR} = 60^\circ$ and $PR = 6.5\text{cm}$.
- ii. Measure and write the length of QR .
- iii. Construct the perpendicular bisector of PQ .
- iv. Construct the angle bisector of \widehat{QPR} and name the intersection point of it and the perpendicular bisector as O .
- v. Construct a circle with the centre O and the radius OP .

09. In a box there are 8 identical chits of papers rolled and numbered from 1 to 8. A chit of paper is taken out from the box randomly.

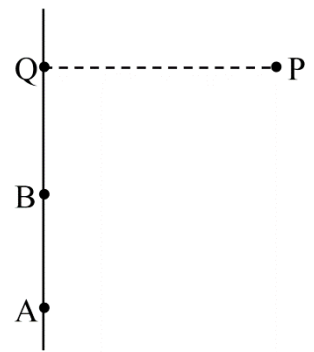
- i. Write the sample space including all the possible outcomes of the event.
- ii. Find the probability of the number taken out being an odd number.
- iii. Find the probability of the number taken out not being a prime number.
- iv. Find the probability of the number taken out being either an even number or a square number.
- v. If the number taken out for the first time is not an odd number, another number is taken out from the box without replacing the previous one. Find the probability of the number taken out for the second time being an even number.

10. (a) Name the instrument which is used to measure bearing and draw a sketch of it.

(b) A point A is situated at one side of a horizontal straight road.

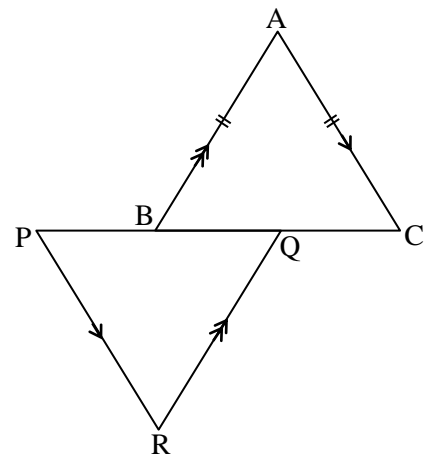
When observing from A, the bearing of a tree 'P' which is at the other side of the road, is 030° . When observing from point B, which is situated 10m away from A, the bearing of the tree P is 060° . The figure shows a sketch of it.

Using the scale $1\text{cm} \rightarrow 2\text{m}$ draw a scale diagram to represent the above information. Find bearing of A, from P and find the distance from P to Q.



11. In the given figure $AB = AC$. AC is parallel to PR and AB is parallel to QR.

- i. Prove that the PQR is an isosceles triangle.
- ii. If $PB = QC$, show that $\triangle ABC$ and $\triangle PQR$ are congruent and when $PQ = 7\text{cm}$ and $PR = 5\text{cm}$, calculate the perimeter of the $\triangle ABC$



12. Figure shows a circle with the centre O. $\angle AOC = x$.

- (a) Giving reasons find the magnitudes of the following angles in terms of x .
 - i. $\angle ACO$
 - ii. $\angle BOC$
 - iii. $\angle OBC$
- (b) What is the magnitude of $\angle ACB$ in degrees?
- (c) If $AC = 12\text{cm}$ and $BC = 9\text{cm}$, what is the length of AB ?

