Southern Provincial Department of Education

Year End Test - 2018

Mathematics

Grade 9

Name / Index No. .....

Time - 2 hours

Paper I

- **Answer all the questions on this question paper it self.**

(01) Write down the next two terms of the below number pattern.

$\frac{1}{3}, \frac{2}{3}, 1, \ldots\ldots, \ldots\ldots$

(02) Convert 155_{ten} to the base two number.

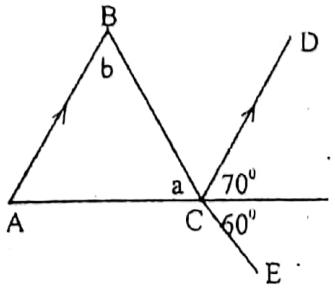
(03) Find how much is $\frac{4}{5}$ of Rs 250.

(04) If a vendor buys a saree for Rs 1500 and sells it at Rs 1800. Find the profit percentage.

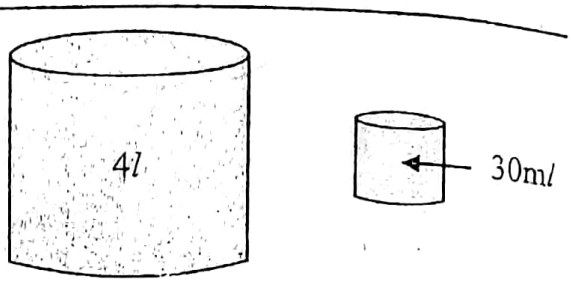
(05) Simplify. $(a-3)(a-5)$

(06) Factorize. $64 - a^2$

(07) AB // CD in the figure. Find the magnitudes of a and b angles.



(08) Capacity of a large container is $4l$. $\frac{3}{4}$ of this container is filled with coconut oil. oil is filled in to small containers of capacity $30ml$ each. Find the number of containers that can be filled in this manner.



(09) Price of 5 papaws is Rs. 600. To find the price of 8 papaws.

(i) Build up an algebraic equation.

(ii) Using it find the price of 8 papaws.

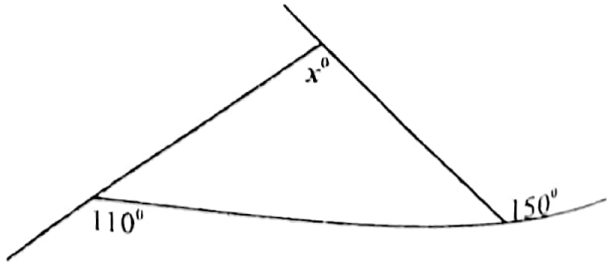
(10) Find the value of. $\frac{(a^0)^2 \times a}{a^1}$

(11) Write 0.00101 in scientific notation.

(12) Name the mid point of the line PQ as X and construct perpendicular to PQ at X

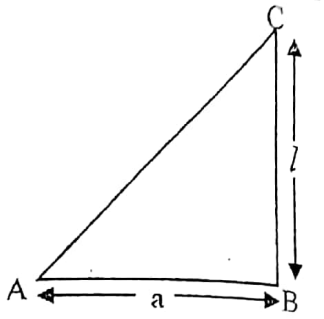
(13) Solve. $\frac{x}{2} = 5$

(14) Find the value of x using the given data.



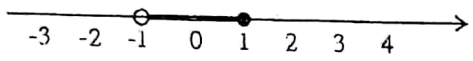
(15) In the ABC right angled triangle AB = a cm and BC = $l$cm.

If the area of the triangle is Acm^2 build up an expression using a, l and A and make "A" the subject of it.



(16) Find the circumference of the circle with the diameter 14cm. (Take $\pi = \frac{22}{7}$)

(17)



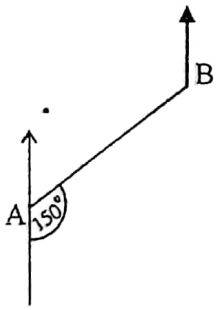
Write down the inequality represented on the number line.

(18) letters of the word "home"

(i) Write the above set with the elements.

(ii) Find the probability of the randomly selected letter is "O"

(19)



Find the bearing of A from B.

(20) 10, 4, a, 1, 10

If the mode of this set of data is twice the median hence find the mean.

Part - II

- **1st question and 4 other questions.**
- **1st question carries 16 marks, others carry 11 marks each.**

(01) An ungrouped frequency distribution prepared with the information collected on the number of patients who received treatment in out patient Department of Certain hospital each day, is given below.

Number of patients	65	66	67	68	69	70
Number of days	2	4	6	8	12	8

(i) Find the range of this data set.

(ii) Find the (a) Mode

(b) Median

(iii) Using a suitable table find the mean of this data set & round off to the nearest whole number.

(02) (i) If $x=2$ and $y=-1$ find the value of $-3x+2y$

(ii) Find the factors of $8x-ax+24-3a$

(iii) Solve. $\frac{a+1}{3}+\frac{a}{2}=2$

(iv) Solve the simultaneous equations.

$2x+y=11$

$-x+y=5$

(03) Incomplete table which is use to draw the graph of the function $y=3x-1$ is given below.

x	-2	-1	0	1	2
y	-7	___	-1	___	5

(i) Find the values for the blanks.

(ii) Draw the graph of the function $y=3x-1$ on a suitable cartesian plane.

(iii) Write the equation of the straight line which is passes through the point (0, -2) and parallel to $y=3x-1$.

(04) (a) (i) Find the perimeter of a equilateral triangular lamina of side length 16cm.

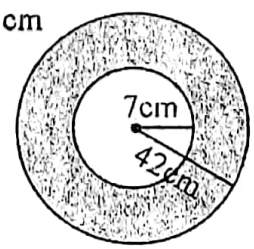
The length of a side of a rectangular lamina with the above perimeter is 16cm.

(ii) Find the breadth of the rectangular lamina.

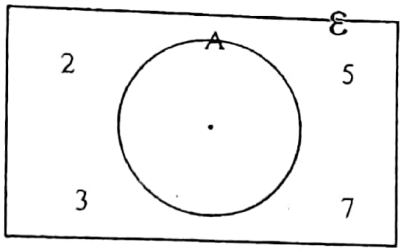
(iii) Show that the length of diagonal of the above rectangle is $\sqrt{320}$ cm

(b) The radius of the large circle is 42cm and small circle is 7cm.

Find the area of the shaded region.



(05) (a) (i) The set A in this Venn diagram haven't any element what is the special name of that set.
Write down it using set notation.



(ii) Write the set A' with its elements.

(b) In a bag there are 10 identical cubes. 2 cubes are blue, 5 are red and 2 are green. Randomly a cube is taken out.

(i) Find the probability of drawing a blue cube.

(ii) Find the probability of drawing a red cube.

(iii) Find the probability of drawing either a red or green cube.

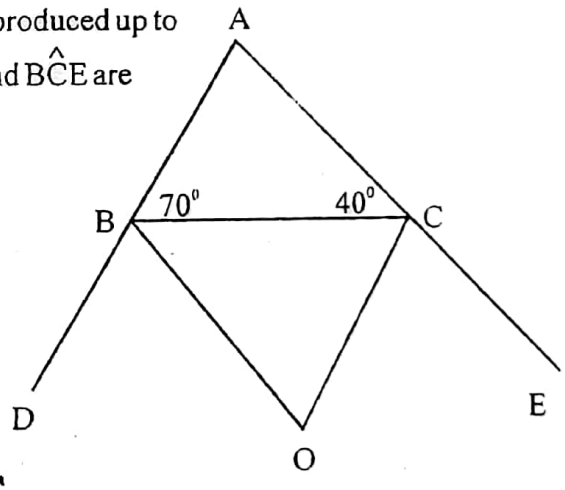
(06) A ship travailing 150km from harbour A on a beating of 055^0 and arrives at horbour B. Then from horbour B it travel 125km on a brearing of 115^0 and arrives at harbour C.

(i) Draw a rough sketch based on the above information.

(ii) Draw a scale diagram using the scale 1cm represents 25km of actual length.

(ii) Using the scale diagram describe the location of C from A.

(07) (a) The sides AB and AC of the ABC triangle has been produced up to D and E respectively. Bisectors of the angle $C\hat{B}D$ and $B\hat{C}E$ are intersects at O.



(i) Find the magnitude of $B\hat{O}C$.

(ii) Name 2 parallel lines.

(b) Exterior angle of a regular polygon is $\frac{1}{3}$ of the magnitude of an interior angle.

(i) Find the magnitude of an exterior angle.

(ii) Find the magnitude of an interior angle.

(iii) Find the number of sides of the regular polygon.