Provincial Department of Education - NWP

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Third Term Test - Grade 8 - 2019

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Name/Index No: ..... **Mathematics** **Time: 02 hours**

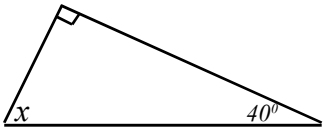
Part I

- Answer all the questions from 01 - 20 on the paper itself.
- Each question carries 02 marks.

(1) Simplify. $2\frac{1}{5} + 1\frac{2}{5}$

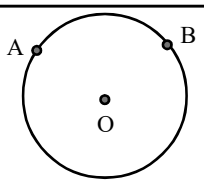
(2) Write 48 : 80 : 112 in the simplest form.

(3) Find the value of x.



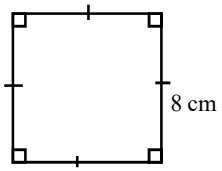
(4) Write the general term of the number pattern 1, 3, 5, 7, ...

(5) In the given circle, the centre is O and the two points on the circle are A and B. Using above points, draw a sector and shade it.



(6) Simplify. $+72 \div (-9)$

(7) Find the perimeter of the given figure.

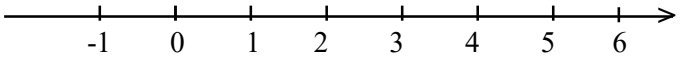


(8) Solve. $x + 4 = 10$

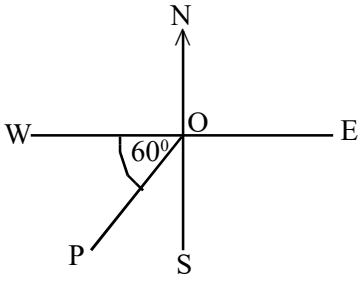
(9) Simplify. 2.7×5

(10) The distance between two cities is 4cm in a map drawn to the scale 1 : 50 000. Find the actual distance between two cities.

(11) Represent the inequality $x < 3$ on the following number line.



(12) Write down the direction of the place **P** with respect to **O**



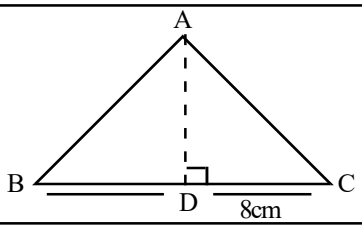
(13) There are 3 blue beads and 5 red beads in a bag, which are identical in size and shape. A bead is drawn randomly from the bag. Find the probability of that bead being blue.

(14) Find the volume of a cube of side length 2cm.

(15) Find the value of $(-4)^3$

(16) If $P = \{ a, e, i, o, u \}$, find $n(p)$

(17) In the triangle ABC, the area is $24cm^2$ and the length of the side BC is 8cm. Find the length of the side AD.



(18) Simplify. 5t 408 kg ÷ 8

(19) Remove the brackets $3(2x - 1)$

(20) The mean of the masses of 05 students is 60kg.
Find the total mass of them.

Part II

- Answer the first question and 04 other questions.
- First question carries 16 marks and other questions carry 11 marks each.

(1) (*a*) The marks obtained by the students of a certain class for a test paper marked out of 50 are as follows.

38	25	30	34	28	37	25	19	18	47
40	32	30	25	29	27	19	28	26	40
32	33	28	15	33	20	32	20	36	32

(i) Represent above data in a stem and leaf diagram. (03 marks)
(ii) What is the minimum mark obtained by the students? (01 mark)
(iii) What is the maximum mark obtained by the students? (01 mark)
(iv) Find the range of the marks (02 marks)
(v) What is the mode of the marks obtained by the students? (01 mark)

(b) The marks obtained by a student of a certain class for 07 mathematics test papers are given below.

75, 70, 80, 75, 80, 65, 80

(i) Find the mode of the marks (02 marks)
(ii) Find the median mark. (02 marks)
(iii) Find the mean mark for a test paper. (04 marks)

(2) (a) Piyal bought a chocolate and he took $\frac{1}{4}$ of it. Then he divided the rest of the chocolate into two equal parts and gave them to Kamal and Sunil.

(i) Write the rest of the whole chocolate, after taking Piyal's portion, as a fraction. (02 marks)
(ii) Write the Sunil's portion as a fraction of whole chocolate. (03 marks)

(b) A person spends 65% of his monthly salary on food, 15% on transport and the rest on savings.

(i) Find the amount spent on savings as a percentage of his salary. (02 marks)
(ii) If the amount spent on transport is Rs. 6000, find his monthly salary. (04 marks)

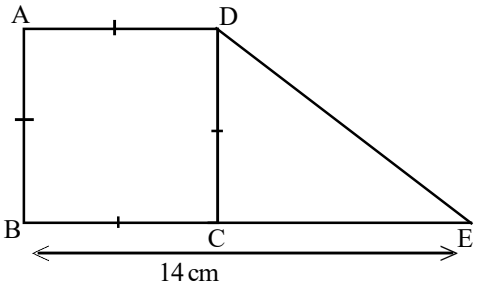
(3) (i) Construct the straight line segment PQ = 6 cm (01 mark)

(ii) By using a protractor, draw the angle $Q\hat{P}R = 90^0$ on the above line segment PQ. (02 marks)

(iii) Complete the triangle PQR by taking as PR = 6 cm (02 marks)
(iv) Find the mid point of the QR and name it as O. (02 marks)
(v) Draw a circle by taking its diameter as QR (02 marks)
(vi) Mark the point S on the circle such that PQSR is to be a rectangle. (02 marks)

(4) (i) Draw a Cartesian plane with both the x - axis and the y - axis marked from - 6 to + 6. (02 marks)
(ii) On this Cartesian plane, draw the straight lines which are the graphs of the following equations.
(*a*) $x = 5$ (*b*) $x = -3$ (*c*) $y = 5$ (*d*) $y = -3$ (04 marks)
(iii) Name the points which are obtained by intersecting these lines as A, B, C and D. (01 mark)
(iv) Write the coordinates of these four points. (04 marks)

(5) The given composite plane figure consists of the square ABCD which the side length is 8cm and the triangle DCE. The length of the straight line BE is 14cm.



(i) Find the area of the square ABCD. (02 marks)

(ii) After finding the area of the triangle DCE, find the area of the composite plane figure (04 marks)

(iii) Find the ratio of the area of the square ABCD to the area of the triangle DCE. (02 marks)

(iv) Find the perimeter of the composite plane figure. (Take DE = 10 cm) (03 marks)

(6) (*a*) P = { prime numbers between 0 and 10 }

(i) Represent the set P in another two ways (03 marks)

(ii) Find n (p) (01 mark)

(iii) Write down an example for a null set. (02 marks)

(b) (i) Find the factors of $4xy - 2x$. (02 marks)

(ii) Remove the brackets and simplify.

$2(x - 3) - 2(x + 1)$ (03 marks)

(7) (*a*) (i) Using the relationship $1\ cm^3 = 1ml$, find the capacity of a cube shaped container of volume $1\ m^3$ in litres. (02 marks)

(ii) What is the maximum volume of water in litres that can be filled into a cuboid shaped container with length, breadth and height equal to 60 cm, 50 cm and 30 cm respectively. (03 marks)

(b) (i) Draw three geometrical shapes that can be used to create regular tessellations. (03 marks)

(ii) By using above geometrical shapes, draw a semi - regular tessellation. (03 marks)

Third Term Test - Grade 08 - 2019

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Mathematics - Answer Sheet

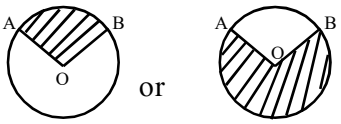
Part I

(1) $3\frac{3}{5}$ ---------- 2

(2) 3 : 5 : 7 ---------- 2

(3) 50^0 ---------- 2

(4) 2n - 1 ---------- 2

(5) 

2

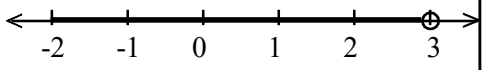
(6) - 8 ---------- 2

(7) 32 cm ---------- 2
8 × 4 ---------- 1

(8) $x + 4 - 4 = 10 - 4$ ---------- 1
$x = 6$ ---------- 2

(9) 13.5 ---------- 2

(10) 1 cm → 500 m ---------- 1
$500 \times 4 = 2000$m
= 2 km ---------- 1 - 2

(11)


(12) $S30^0W$ ---------- 2

(13) $\frac{3}{8}$ ---------- 2

(14) $2 \times 2 \times 2$ ---------- 1
$8cm^3$ ---------- 1 - 2

(15) $(-4) \times (-4) \times (-4)$ ---------- 1
(-64) ---------- 1 - 2

(16) $n(p) = 5$ ---------- 2

(17) $\frac{1}{2} \times 8 \times AD = 24$ ---------- 1
AD = 6cm ---------- 1 - 2

(18)
t kg
0 676
8 | 5 408
4 8
60
56
48
48
0
676 kg ---------- 2

(19) 6x - 3 ---------- 2

(20) 60 x 5 ---------- 1
300 kg ---------- 2

Part II

(1) (a) (i)

stem	leaf
1	5, 8, 9, 9
2	0, 0, 5, 5, 5, 6, 7, 8,8 8, 9
3	0, 0, 2, 2, 2, 2, 3, 3, 4, 6, 7, 8
4	0, 0, 7

3

(ii) 15 ---------- 1
(iii) 47 ---------- 1
(iv) 47 - 15 ---------- 1
32 ---------- 2
(v) 32 ---------- 1

(b) (i) 80 ---------- 2

(ii) 65,70,75,75,80,80,80 ---------- 1

75 ---------- 1 2

(iii) $\frac{75+70+80+75+80+65+80}{7}$ ---------- 2

$= \frac{525}{7}$ ---------- 1

$= 75$ ---------- 1 4

Total ---------- 16

(2) (a)

(i) $1-\frac{1}{4}$ ---------- 1

$\frac{3}{4}$ ---------- 2

(ii) $\frac{3}{4} \div 2$ ---------- 1

$\frac{3}{4} \times \frac{1}{2}$ ---------- 1

$\frac{3}{8}$ ---------- 1 3

(b) (i) $65 + 15 = 80\%$ ---------- 1

$\therefore$ Savings $= 20\%$ ---------- 1 2

(ii) $\frac{6000}{15}$ ---------- 1

Rs. 400 ---------- 1

400×100 ---------- 1

Rs. 40000 ---------- 1 4

Total ---------- 11

(3) (i) constructing PQ ---------- 1

(ii) Drawing 90^0 ---------- 2

(iii) Constructing PR = 6cm ---------- 1

Completing PQR triangle ---------- 1 2

(iv) Finding the mid point of QR ---------- 1

Naming it as O ---------- 1 2

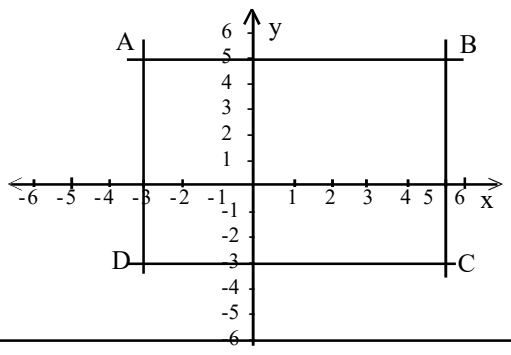
(v) Drawing the circle ---------- 2

(vi) Completing the rectangle ---------- 1

Marking the point S ---------- 1 2

Total ---------- 11

(4)



(i) Drawing the correct cartesian plane ---------- 2

(ii) Drawing the straight lines ---------- 4

(iii) Naming the intersection points (any way) ---------- 1

(iv) A (-3, 5)

B (5, 5)

C (5, -3)

D (-3, -3) ---------- 4

Total ---------- 11

(5) (i) 8×8 ---------- 1

64 cm^2 ---------- 1 2

(ii) Area of the triangle $= \frac{1}{2} \times 6 \times 8$ ---------- 2

24 cm^2 ---------- 1

$\therefore$ The area of composite figure $= 64 + 24$ ---------- 1

$= 88cm^2$ ---------- 1 4

(iii) 64 : 24 ---------- 1

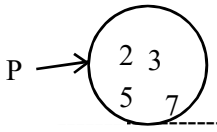
8 : 3 ---------- 1 2

(iv) 14+8+8+10 ---------- 1

40 cm ---------- 3

Total ---------- 11

(6) (a) (i) P = {2, 3, 5, 7} ---------- 2



---------- 1 3

(ii) 4 ---------- 1

(iii) For any correct example ---------- 2

(b) (i) $2x(2y - 1)$ ---------- 2

(ii) $2x - 6 - 2x - 2$ ---------- 1

$- 8$ ---------- 2 3

Total ---------- 11

(7) (a) (i) $1m \times 1m \times 1m = 1m^3$

$100cm \times 100cm \times 100cm$

1 000 000 cm^3 ---------- 1

1 000 000 $m\ell$

1000 ℓ ---------- 1 2

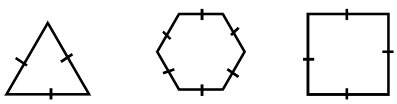
(ii) $60 \times 50 \times 30$ ---------- 1

90 000 cm^3

90 000 $m\ell$ ---------- 1

90 ℓ ---------- 1 3

(b) (i)



or any three regular shapes ---------- 3

(ii) for any creation ---------- 3

Total ---------- 11