THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF EDUCATION
BACHELOR OF EDUCATION (HONOURS) IN PRIMARY EDUCATION
LEVEL - 05
FINAL EXAMINATION – 2020/2021
EPU5353 – MATHEMATICS FOR PRIMARY TEACHING
DURATION – TWO (02) HOURS

Date: 25.02.2024 Time: 01.30 p.m. – 03.30 p.m.

Answer All Questions in Part I and any three (03) questions from Part II.

PART - I

01. Find the value

(a) $18 - 6 \times 2 + 5$

(b) Find the

i. Least common Multiple (LCM)

ii. Highest Common Factor (HCF)

of the following numbers: 24, 30, 42

02. Simplify

(i) $5\frac{1}{4} + 3\frac{5}{6} - 2\frac{3}{8}$ (ii) 1.35×2.47 (iii) $35.48 \div 0.04$

03. Simplify

(i) $5(2x^3 - 3x^2 - x + 1) - 2(3x^3 - 5x - 7)$

(ii) $(7x - 5)(2x + 9)$

04. Solve

(i) $7(y - 2) - 2(8 - y) = 6$

(ii) $3a + 2b = 10$

$5a - b = 14$

05. The first term and common difference of an arithmetic progression are 1 and 6.

(i) Find the 19^{th} term of the progression

(ii) Find the sum of first 19 terms

06. Three sets of $\mathcal{E}$ P and Q are given below.

$\mathcal{E}$ = {30,31,32,33,34,35,36,37,38,39,40}

P = {31,34,37,40}

Q = {31,33,35,37,39}

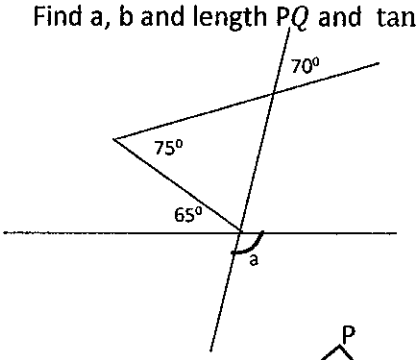
Draw Venn diagram and write the element of

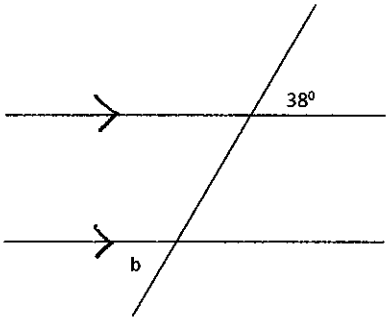
i. $P \cap Q$ ii. $P \cup Q$ iii. $P \cap Q'$

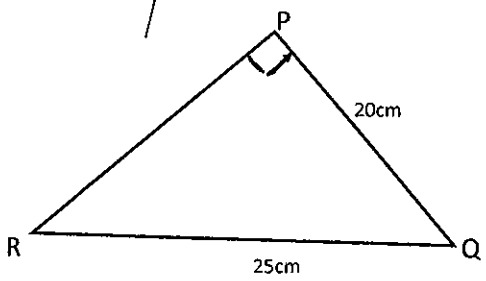
07. Find the mean, median and mode of following numbers obtained by a group of students.

97, 45, 97, 38, 87, 75, 80, 78, 66, 67

08. Find a, b and length PQ and tan Q.







(8 x 5 = 40 marks)

PART - II

09. (i) Find the answers

a) $\frac{7}{8} - \frac{1}{6}$ b) $4\frac{1}{2} - 1\frac{3}{4}$

c) $9.023 - 2.25 + 0.007 + 4.8$ d) $\frac{3.25 \times 4.8}{0.015}$

(4 x 2 = 08 marks)

(ii) (a) Define the square numbers and find the 40^{th} square number.

(b) Define the triangular numbers and find the 23^{rd} triangular number.

(c) Define the prime numbers and write the prime numbers between 60 and 80.

(3 x 2 = 06 marks)

(iii) 48% of the students in a school are boys. There are 1300 girls in that school. Find the total number of students in that school.

(3 marks)

(iv) There are 180 pens in a box. They are Black, Red and Blue in colour. The ratio of Black : Red : Blue = 3 : 2 : 4.

Find the number of Black, Red and Blue pens each in the box.

(03 marks)

10. (a) Factorize

(i) $2a^2 - 3a - 9$ (ii) $16a^2 - 1$

(2 x 3 = 06 marks)

(b) Using the knowledge of factorization find the value of

(i) $3.8^2 - 2.8 \times 3.8$ (ii) 109 x 91

(2 x 3 = 06 marks)

(c) The sum of four consecutive odd numbers is 120. Find those numbers.

(08 marks)

11. (a) Simplify $\frac{2}{x-4} - \frac{5}{x+5}$ (04 marks)

(b) Solve $(x + 3)^2 - 4 = (x - 2)^2 + 51$ (04 marks)

(c) The price of 5 erasers and a pencil is Rs.65/= The price of 2 erasers and 5 pencils is Rs. 141/-. Find the price of (i) an eraser (ii) a pencil.

(Hind: Let the price of a eraser and pencil be Rs. x and Rs. y. Construct 2 equations and find x and y)

(12 marks)

12. a) The first three of an arithmetic progression are 1, 5 and 9.

i) Find the common difference of this progression.

ii) Find the 59^{th} term of this progression.

iii) Find the sum of first 59 terms in this progression.

iv) Find the sum of first 64 terms in this progression.

v) 301 is which term of this progression.

(5 x 2 = 10 marks)

b) Second term and fifth term of the geometric progression are 8 and 64.

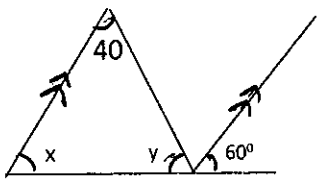
i) Find the first term and common ratio (04 marks)

ii) Find the 10^{th} terms of this programme (Hint:-2^{11}=2048) (03 marks)

iii) Find the sum of the first 13^{th} terms in this progression.

(Hint:-$2^{13} = 8192$) (03 marks)

13. i) (a) Find the x and y.



(02 marks)

(b) A flag post is fixed on a horizontal ground from a distance 50m from the foot of the flag post, the angle of elevation to the top of the flag post is found to be 60^0 . Find the height of the flag post in two decimal places.

[tan 60^0 = 1.7321] (05 marks)

ii) i. Write the gradient and intercept of the following graph.

(i) $y = x - 1$ (ii) $y = -x + 1$ (02 marks)

ii. Ravi tries to draw a graph for the equation $y = x - 1$ and $y = -x + 1$

$y = x - 1$

x	-3	-2	-1	0	1	2	3
y				-1			

$y = -x + 1$

x	-3	-2	-1	0	1	2	3
y				1			

Copy the tables in your answer script and fill the blank in the tables (you should show the calculations)

(06 marks)

iii. Draw the graph for both equations in same grid. (04 marks)

iv. Write the coordinate of above two lines inter section. (01 marks)