00805

THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF EDUCATION
BACHELOR OF EDUCATION (HONOURS) IN PRIMARY EDUCATION
LEVEL - 05
FINAL EXAMINATION – 2023/2024
EPU5353 – MATHEMATICS FOR PRIMARY TEACHING
DURATION – TWO (02) HOURS

Date: 14.06.2025 Time: 09.30 a.m. – 11.30 a.m.

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

PART - I

01. Find the value

(a) $6 - 2\,(3 - 1) + 5$

(b) Write each of the following numbers as a product of prime numbers 12, 18, 30

Hence, Find (i) Least Common Multiple (LCM)

(ii) Highest Common Factor (HCF)

02. Simplify

(i) $4\frac{2}{5} + 3\frac{1}{4}$, (ii) 7.32×1.3 (iii) $7.25 \div 0.25$

03. Simplify

(i) $4(x^4 + 2x^3 + 3x^2 - 5x - 1) - 3(x^4 - 4x^3 + 2x^2 - 5x + 1)$

(ii) $(6x - 5)(x + 4)$

04. Solve

(i) $3(4x - 1) - 2(x + 1) = 55$

(ii) $5x + 2y = 17$

$7x - 2y = 19$

05. The first four terms of an arithmetic progression are 1, 6, 11 and 16.

(i) Find the 51st term of the progression

(ii) Find the sum of first 51 terms

06. $\mathcal{E}$ is the universal set, A and B are subjects of $\mathcal{E}$

$\mathcal{E}$ = {Natural numbers between 20 and50, including 20 and 50}

A = {Multiples of 2}, B {Multiple of 5}

i. Write the elements of sets $\mathcal{E}$, A and B.

ii. Represent the sets $\mathcal{E}$, A and B is a Venn diagram.

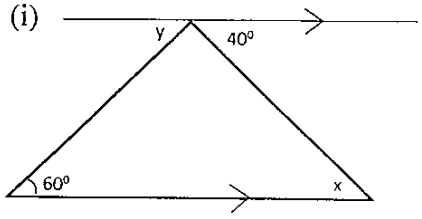
07. The marks of 10 students obtained in First Language are given below.

85	48	74	63	80	55	54	91	63	72

Write the numbers in ascending order and find,

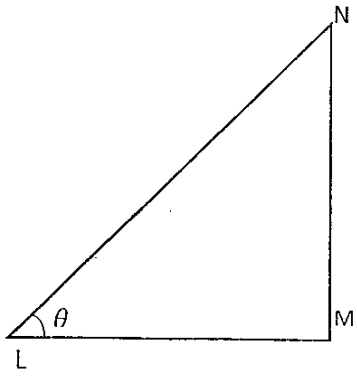
i. Mean ii. Median iii. Mode of the marks.

08. (i)



Find the value x, y and z

(ii)



LN = 25cm. MN = 24cm. Find the length of LM and Cos θ

(8 x 5 = 40 marks)

30

PART - II

09. (i) Find the answers

a) $\frac{8}{9} - \frac{1}{2}$ b) $5\frac{1}{4} + 1\frac{5}{6}$

c) $5.45 + \frac{2.25}{1.5}$ d) $7.12 - 3.123 + 5.4$

(4 x 2 = 08 marks)

(ii) Define the followings.

a) Prime numbers
b) Odd numbers
c) Even numbers

(03 marks)

(iii) Find the following

a) 21st odd number
b) 43rd even number
c) 25th Triangular number

(03 marks)

(iv) If 25% of the students in Mathematics course receive 'A' grade, and there are 300 students in the batch. How many students receive A grade. (03 marks)

(v) There are 100 shapes in a box. Those are circles, square and Triangles. The ration of Circle : Square : Triangle = 2: 3 : 5

Find the number of each shapes in the box. (03 marks)

10. (a) Factorize

(i) $x^2 + 3x - 18$ (ii) $16y^2 - 49z^2$

(2 x 3 = 06 marks)

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

(i) $61^2 - 39^2$ (ii) 2.7 x 7.3 + 7.3 x 7.3

(2 x 3 = 06 marks)

(c) Dinesh is three years older than his sister Jamuna. The sum of their ages in 33 years. Let Dinesh's age be x years.

i. Write Jamuna's age in terms of x (02 marks)

ii. Construct on equation in terms of x (02 marks)

iii. Solve the equation and find the ages of I. Dinesh (02 marks)

II.Jamuna (02 marks)

11. (a) Simplify $\frac{3}{x+2} - \frac{2}{(x-1)}$ (04 marks)

(b) Find x $(x + 3)^2 + (x - 1)(x + 1) = x^2 - x + 38$ (06 marks)

(c) A bag contains 28 coins, all of them either Rs. 2/= or Rs. 5/= coins. If the total value of the money is Rs. 86/=

Find the number of coins in each kind. [Hint: Let the number of two rupee coin and five rupee coins be x and y respectively. Construct two equations and find x and y]

(10 marks)

12. a) First term and fifth term of an arithmetic progression are 4 and 16.

i) Find the common difference of this progression. (01 mark)

ii) Find the sum of first 49 term of this progression. (02 marks)

iii) Find the sum of first 49 terms. (02 marks)

iv) 94 is which term of this progression. (02 marks)

v) Find the sum of first 51 terms. (03 marks)

b) Consider following geometric series,

3, 6, 12, 24, ...

i) Write the first term and common ration of the series. (02 marks)

ii) Find the 27^{th} term of this series. [Hint: $2^{26} = 67108864$] (04 marks)

iii) Find the sum of first 12 term. [Hint: $2^{12} = 4096$] (04 marks)

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13. i) Write the gradient and interact of following linear equation.

a) $y = 2x - 1$ b) $y = x + 2$ (04 marks)

ii) $y = 2x - 1$

x	-5	-3	-2	-1	0	1	2	3	4
y	-11				-1				7

$y = x + 2$

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

Copy the tables in you answer script and fill the blank in the tables (you should show the calculations) (0.5 x 12 = 06 marks)

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

iv. Write the coordinates of the point of inter section of above two straight lines. (01 mark)

v. A boy standing 300m away from a telecom tower, observes a helicopter right above the tower, at angle of elevation $54^0\ 48'$ from him. Find the height of the helicopter above ground at this moment. [Hint: $\tan 54^0\ 48' = 1.42$] (05 marks)