WESTMINSTER
International University in Tashkent

An Accredited Institution of
the University of Westminster (UK)

Westminster International University in Tashkent

CPFS

ENTRANCE EXAMINATION
MATHEMATICS

Date: 06 August 2024

Time allowed: 1 hour 30 minutes

ANSWER ALL QUESTIONS IN DETAIL, SHOWING ALL YOUR WORK ON THE SAME PAGE AS THE QUESTION. THE ANSWERS PROVIDED IN THE DRAFT PAGE OR IN SEPARATE SHEETS WILL NOT BE CONSIDERED.

NO BOOKS, NOTES, CALCULATORS OR ANY SORT OF ASSISTING MATERIAL ARE ALLOWED.

ID number and name & surname:	
Signature:	
Do you have IELTS or CEFR certificate?	**If YES, your score?**

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PART: MATHEMATICS
10 questions by 10 marks. Total: 100 points

1	2	3	4	5	6	7	8	9	10	Total

Staff name and signature: _____

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Question 1.

Calculate:

a) [5m]

$$\frac{1}{3 \cdot 4} + \frac{1}{4 \cdot 5} + \frac{1}{5 \cdot 6} + \frac{1}{6 \cdot 7} + \cdots + \frac{1}{92 \cdot 93}$$

b) [5m]

$$\frac{63 \cdot 1.28^{15} \cdot 6.4^{12} + 8 \cdot 2.56^{11} \cdot 3.2^{16} \cdot 0.2^{4}}{2^{4} \cdot 1.6^{42}}$$

Question 2. **[10m]**

This year, 60% of the graduating class of high school had taken at least 8 math courses. Of the remaining members, 80% had taken 6 or 7 math courses. What percent of the graduating class had taken fewer than 6 math courses?

Question 3. **[10m]**

From a group of 4 boys and 3 girls, a committee of 3 members to be formed. Find the probability that at least 2 girls are included in the committee.

Question 4.

Evaluate:

a) [5m]

$$\left(\frac{\sqrt{3-\sqrt{7}}}{\sqrt{\sqrt{7}+3}}+\frac{\sqrt{\sqrt{7}+3}}{\sqrt{3-\sqrt{7}}}\right):\sqrt{2}$$

b) [5m]

$$\sqrt{5}-\left(\frac{4}{\sqrt{2\sqrt{5}-4}+\sqrt{2\sqrt{5}+4}}\right)^2$$

Question 5. **[10m]**

Solve the equation completely:

$$x + \frac{2}{3 + \frac{3x}{2 - x}} = 4$$

Question 6.

a) **[5m]**

The measures of two supplementary angles are in the ratio of 7:11. Find the measure of both angles.

b) [5m]

The perimeter of the rectangle is equal to 28 cm and diagonal is equal to 10 cm. Find the area of a rectangle.

Question 7.

Solve the equation. [10m]

$$\frac{x+4}{2x+3} = \frac{3x-2}{4x-3}$$

Question 8.

a) [5m]

The lesser of two numbers is 31 less than three times the greater. If the numbers differ by 7, what is the lesser number?

b) [5m]

A numismatist decided to share his coin collection between his children. The oldest got 1/3 of the collection, the next got 1/6 of the collection, the next got 1/8 of the collection, and the youngest got the remaining 27 coins. How many coins were in the collection?

Question 9.

Simplify the expression.

a) [5m]

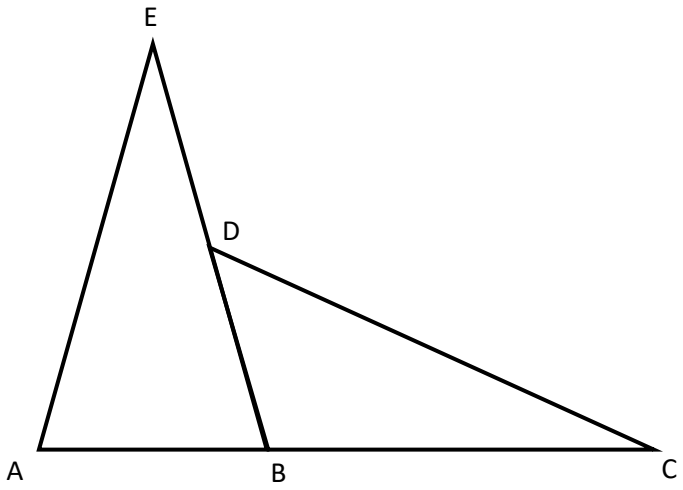
$$\left(\frac{x+1}{x^2-4}+\frac{6x+1}{2x+4}\right):\frac{2x-3}{x-2}+\frac{3}{x+2}$$

b) [5m]

$$\left(\frac{\sqrt{a}-1}{a+3\sqrt{a}}-\frac{\sqrt{a}+2}{a-9}\right):\frac{2\sqrt{a}-1}{a+3\sqrt{a}}+\frac{\sqrt{a}}{\sqrt{a}-3}$$

Question 10. **[10m]**

$\angle A = 60^o$. If $\angle E = 40^o, \angle C = 30^o$. Find $\angle BDC$.



END OF THE EXAM

TOTAL FOR EXAM 100 MARKS

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