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UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT
FACULTY OF APPLIED SCIENCES AND MATHEMATICS EDUCATION
DEPARTMENT OF MATHEMATICS EDUCATION

END OF FIRST SEMESTER EXAMINATIONS, APRIL 2021

COURSE CODE	**PMT 231**
COURSE TITLE	**Methods of Teaching Junior High School Mathematics**
DURATION	**Two (2) hours**
LECTURER	**Mr. Ernest Larbi**
INSTRUCTION	**Answer any *TWO* questions.**

INDEX NO:..... **CLASS:**.....

1. (a) 25 students in a class took an examination in Geometry and Algebra. 16 of them passed in Geometry and 7 passed in both Geometry and Algebra. 2 students did not pass in any of these courses.
Explain how you will guide a JHS student to find:
(i) the number of students who passed in Algebra **[7 marks]**
(ii) the number of students who passed in only one course. **[6 marks]**

(b) **Describe** how you will guide a J.H.S student to simplify: $7\frac{1}{2}\times(\frac{1}{4}\div\frac{1}{2})-\frac{1}{4}$ **[9 marks]**

(c) **Explain** how you will guide a student to find the square root of 11644 without the use of a calculator. **[8 marks]**

2. (a) With an appropriate explanation, **describe** how you will guide a student to construct ΔXYZ such that $\angle XYZ = 45^\circ$, $\angle XZY = 75^\circ$ and $|YZ| = 12$cm. **[8 marks]**

(b) You are to **guide** a J.H.S student to solve the equation below:
Stephen is y years old now. In 10 years time, his age will be four times as his age in 5 years back. How old is he now?
(i) What keywords in the question will you first guide the student to understand and represent in symbols in order to solve the question? **[6 marks]**
(ii) Show how you will assist the student to do this. **[8 marks]**

(c) **Explain** how you will guide a student to use *a flow chart* to solve the Equation $3(x+3)-5=13$. **[8 marks]**

3. (a) Consider the question below:

A man bought some pens and pencils form a shop. In all, he paid Gh¢ 29.00 for 11 items. If the cost of a pen is Gh¢ 3.00 and that of a pencil is Gh¢ 2.00, determine how many pens and pencils were bought using

(i) linear equation in **one** variable **[10 marks]**

(ii) linear equations in **two** variables **[10 marks]**

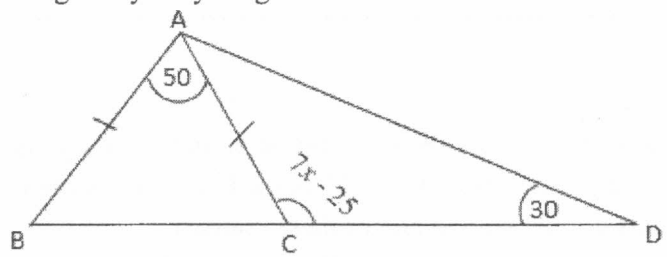
(b) **Describe** how you use inductive teaching approach to guide a student to deduce that $a^m \times a^n = a^{(m+n)}$ **[10 marks]**

4. (a) **Describe** how you will assist a J.H.S student to solve the question below:

After the first term in the following sequence, each number is the sum of the preceding two terms. Find the mission numbers.

4, ……., ……, ……, ……., 67 **[8 marks]**

(b) You are requested to guide your younger brother to solve the task below:



In the diagram, $|AB| = |AC|$, angle $ADC = 30^o$ and angle $ACD = (7x - 25)^o$. Find:

(i) the value of x. **[8 marks]**

(ii) angle DAC **[4 marks]**

Describe how you will guide him to solve. Indicate the geometric ideas used.

(c) Explain how you will guide a J.H.S student whom you are introducing linear equation for the *first time* to solve: $3x + 5 = 8 - 4x$. **[10 marks]**