

Mid-West University
Examinations Management Office
Surkhet, Nepal

End Semester Examination-2080

Level: B.Ed. / III Semester

Time: 3.00 hrs.

Sub: Algebra for Teachers (MATH 433/333)

FM: 60

PM: 30

Candidates are required to give their answers in their own words as far as practicable.

Attempt All the Questions:

Group "B"

6×5 = 30

1. Why is mathematics the representative way of systematic patterns and structure? Justify it with appropriate examples.
2. "A good education can change anyone. A good teacher can change everything. An effective change on the concept to study of relations and function should be done by a good mathematics teacher." Elaborate teachers' effective teaching strategy to teach day-to-day relations and function.
3. Explain why number theory is a bridging pedagogy in Algebra.

Or

Define group with an example. Prove that the set of numbers $S = \{1, i, -1, -i\}$ under multiplication ($i = \sqrt{-1}$), is a group.

4. Write the properties of equations. Find the nature of the roots of the equation $3x^4 + 12x^2 + 5x - 4 = 0$.
5. What are equivalent linear systems? Construct a model strategy to teach system of linear equation in two variables.
6. "Teaching is more than imparting knowledge". If you are a mathematics teacher, how can you teach the concept of rational and irrational numbers at grade VII students in your mathematics classroom?

Or

The students of grade VIII are unable to understand the problem of indices. As a mathematics teacher, make a teaching strategy to teach effective lesson plan to solve this problem.

Group "C"

2×10 = 20

7. Define bi-quadratic equation. Solve the bi-quadratic equation $x^4 - 22x^2 - 48x - 23 = 0$ by using radicals.
8. Define abelian group. Show that the set of matrices of the forms $B_\theta = \begin{bmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{bmatrix}$ where θ is a number, then it is a forms a group under multiplication.

Or

Prove that the intersection of two subgroups of a group G is also a subgroup of G . Also, show that the set $G = \{1, \omega, \omega^2\}$, ω is a cube root of unity, is a group under usual rule of multiplication.

THE END