

SS3 FURTHER MATHEMATICS

SECOND TERM

SCHEME OF WORK

WEEK(S) TOPIC

1. Review of first term`s examination questions and STATIC: Moment of force (2 and 3 forces) acting at a point.
2. STATIC: (i) Polygon of forces (ii) Resolution of forces of friction.
3. MODELLING: (i) introduction to modeling (ii) Dependent and independent variables in Mathematical modeling (iii) examples of some models
4. MODELLING: (I) Construction of model (ii) Methodology of modeling (iii) Application to physical, biological, social and behavioral services.
5. GAMES THEORY: (I) Introduction to games theory (ii) Description of types of games.
6. GAMES THEORY: (i) solution of two person (ii) Zero sum games using pure and minimized strategies (iii) matrix games.
7. To 12 revision and Mock Examination

WEEK 1

REVISION AND STATICS

LINEAR INEQUALITIES IN ONE VARIABLE

Find the solution sets of the following inequalities:

$$(a) \quad 3x + 2 \leq x + 4 \quad (b) \quad \frac{x+3}{2} - \frac{x}{4} + 1 \geq \frac{2-x}{8}$$

Solution

$$(a) \quad 3x + 2 \leq x + 4$$

$$3x - x \leq 4 - 2$$

$$2x \leq 2 \quad \therefore x \leq \frac{2}{2}$$

$$x \leq 1$$

EXAMPLE

LOGARITHM

Solve the given equation $(\log_3 x)^2 - 6\log_3 x + 8 = 0$

Solution

$$(\log_3 x)^2 - 6\log_3 x + 8 = 0 \quad \therefore \log_3\left(\frac{x^2}{x^6}\right) = -8$$

$$= \frac{1}{x^4} = 3^{-8} \quad \therefore \frac{1}{x^4} = \frac{1}{3^8} \quad \text{cross multiply}$$

$$x^4 = 3^8 \quad \therefore \sqrt[4]{x^4} = \sqrt[4]{3^8}, \quad x = 9.$$

STATIC

STATIC: is defined as...