

MATHEMATICS LEVEL 2: OVERVIEW OF EXAMINATION QUESTION PAPERS

Proposed mark distribution between paper 1 and paper 2 for external examination papers

Paper 1

TOPICS	MARKS
1. Numbers	30
2.Functions and Algebra	
2.1 Functions	25
2.2 Algebra	25
5.Financial Mathematics	20
TOTAL	100

Formulae Sheet Paper 1

$$1) a^m \times a^n = a^{m+n}$$

$$2) a^m \div a^n = a^{m-n}$$

$$3) (a^m)^n = a^{m \times n}$$

$$4) (a^m b^n)^p = a^{mp} b^{np}$$

$$5) \left(\frac{a^m}{b^n} \right)^p = \frac{a^{mp}}{b^{np}}$$

$$6) a^{-n} = \frac{1}{a^n}$$

$$7) a^0 = 1$$

$$8) \sqrt[n]{a^m} = a^{\frac{m}{n}}$$

$$9) T_n = a + (n-1)d$$

$$10) S_n = \frac{n}{2} [2a + (n-1)d]$$

$$11) S_n = \frac{n}{2} (a + l)$$

$$12) I = A_0 \times \frac{r}{100} \times t \quad \text{or} \quad I = \frac{Prt}{100} \quad \text{or} \quad A_t = P(1+in)$$

$$13) A_t = A_o \left(1 + \frac{r}{100 \times m} \right)^{t \times m} \quad \text{or} \quad A_t = P(1+i)^n$$

$$14) i = \frac{r}{100}$$

Paper 2

TOPICS	MARKS
3. Space, Shape and Measurement	
3.1 Geometry	30
3.2 Trigonometry	30
4. Data Handling	40
TOTAL	100

Formulae Sheet Paper 2

1) $A_{\text{square}} = l \times l = l^2$

2) $A_{\text{rectangle}} = l \times b$ or $A_{\text{rectangle}} = l \times w$

3) $A_{\text{triangle}} = \frac{1}{2} b \times \perp h$

4) $A_{\text{circle}} = \pi r^2$

5) $C = 2\pi r$

6) Area of parallelogram = base $\times$ perpendicular height

7) $A_{\text{hexagon}} = \frac{3\sqrt{3}}{2} l^2$

8) $A_{\text{hexagon}} = \frac{\sqrt{3}}{2} w^2$

9) $A_{\text{cylinder}} = 2\pi r(h + r)$

10) Volume = Area of base $\times$ perpendicular height

11) Total surface area of a triangular prism = (height of prism $\times$ perimeter of base) + 2 (area of base)

12) $m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

13) $D = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

14) $M = \left(\frac{x_1 + x_2}{2} ; \frac{y_1 + y_2}{2} \right)$

15) $\theta = \tan^{-1} m$

$$16) \quad \bar{x} = \frac{\sum_{i=1}^n x_i}{n} \quad \text{or} \quad \text{Mean} = \frac{\text{total or sum of all items}}{\text{number of items}}$$

$$17) \quad R = X_n - X_1 \quad \text{or} \quad \text{Range} = \text{highest value} - \text{lowest value}$$

$$18) \quad \bar{x} = \frac{\sum f_i x_i}{n}$$

$$19) \quad Q_{j \text{ position}} = \frac{j}{4}(n+1)$$

$$20) \quad \text{Inter-quartile range} = \text{upper quartile} - \text{lower quartile} = (Q_3 - Q_1)$$

$$21) \quad \text{Semi inter-quartile range} = \frac{1}{2} (\text{upper quartile} - \text{lower quartile}) = \frac{Q_3 - Q_1}{2}$$

$$22) \quad P_{j \text{ position}} = \frac{j}{100}(n+1)$$