GENERAL MATHEMATICS/MATHEMATICS (CORE)

EXAMINATION SCHEME

There will be two papers, Papers 1 and 2, both of which must be taken.

PAPER 1:   will consist of fifty multiple-choice objective questions, drawn from the common areas of the syllabus, to be answered in 1½ hours for 50 marks.

PAPER 2:   will consist of thirteen essay questions in two sections – Sections A and B**,** to be answered in 2½ hours for 100 marks. Candidates will be required to answer ten questions in all.

    Section A -   Will consist of five compulsory questions, elementary in nature carrying a total of 40 marks. The questions will be drawn from the common areas of the syllabus.

    Section B -   will consist of eight questions of greater length and difficulty. The questions shall include a maximum of two which shall be drawn from parts of the syllabuses which may not be peculiar to candidates' home countries. Candidates will be expected to answer five questions for 60marks.

SAMPLE QUESTIONS

PAPER 1
(OBJECTIVES)

1. If $\log_{10}X = 0.7549$ and $\log_{10}Y = 0.3285$, find $\log_{10}XY$.

   A. 0.4256

   B. 0.2479

   C. 1.0826

   D. 2.2956

2. Convert 13.02_5 to base 10.

   A. 8.08

   B. 8.80

   C. 808

   D. 880

3. Simplify : $\dfrac{3^{x+1}(2^{x-1})}{2^{-1}(6^x)}$.

    A. 6
    B. 3
    C. 3^x
    D. 2^x

4. A bonus issue of ordinary shares on the basis of three new shares for every five held has been made by a company. What will be the increase in the number of shares of an investor who originally had 75,000 ordinary shares?

    A. 15,000

    B. 25,000

    C. 45,000

    D. 75,000

5. Find the equation of the line which is perpendicular to $y = \dfrac{x}{3}$ and which passes through the point (1, 3).

    A.   y = -3x
    B.   y = 3x
    C.   y = -3x + 6
    D.   y = 3x – 6

6. Which of the following is represented by the shaded region of the Venn diagram below?
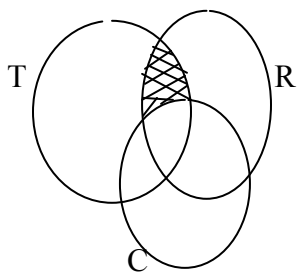
A. T ∩ R

B. C' ∪ (T ∩ R)

C. C' ∩ T ∩ R

D. C' ∩ (T ∪ R)

7. Given that $\sqrt{72} + \sqrt{32} - \sqrt{b} = 6\sqrt{2}$. Find the value of b.

A. 8
B. 16
C. 32
D. 64

PAPER 2

(ESSAY)

1.

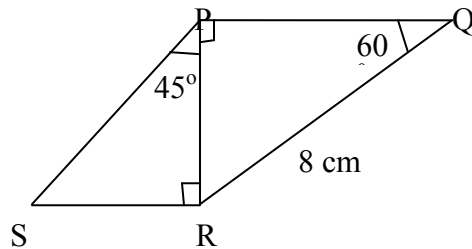| (x)mod p	2	4	6	8
2	4	8	2	y
4	8	y	4	2
6	2	4	y	8
8	Y	2	8	4

The table is of multiplication in modulo p over the set { 2, 4, 6, 8 }. Find the value of:

(a) p;
(b) y.

2.

In the diagram, ∠PQR = 60°, ∠QPR = ∠PRS = 90°, ∠SPR = 45° and |QR| = 8cm. Find |PS|.

3. The frequency distribution of the scores of 50 students in an English language test is shown in the table.

Marks	1 – 5	6 – 10	11 -15	16 – 20	21 - 25	26 – 30	31 – 35	36 - 40	41 - 45	46 – 50
Frequency	2	5	5	7	3	8	10	5	3	2

(a) Prepare a cumulative frequency table.

(b) Draw a cumulative frequency curve for the distribution.

(c) Use the cumulative frequency curve to estimate the:
  (i)   median;
  (ii)   lower quartile.