

FIRST YEAR KGCE EXAMINATION
BASIC MATHEMATICS & SCIENCE
 MODEL QUESTION PAPER
 COMMON TO ALL KGCE PROGRAMS

(Time : 3 hours)

(Maximum Marks: 60)

PART-A*(There should be at least 3 questions from each module)*

(Maximum Marks: 20x1 Marks = 20 Marks)

- I. Answer the following questions by choosing the correct answer from the options given below.
 Each question carries 1 mark.

Q No	Question	Module
1	The value of $\frac{1}{2} + \frac{1}{4} + \frac{1}{8}$ is a) $\frac{6}{8}$ b) $\frac{7}{8}$ c) $\frac{9}{8}$ d) $\frac{5}{8}$	M 1.1
2	The ratio of 60 cm to 1.2 m is a) 2:3 b) 3:2 c) 1:2 d) 2:1	M 1.1
3	If $x:8 :: 15:40$, then x is a) 3 b) 4 c) 5 d) 2	M 1.1
4	If $x=2$, $y=3$ and $z=5$, then the value of $(3x+2y-z)$ is equal to a) 8 b) 7 c) 9 d) 3	M 1.1
5	If $(x+1)^2 = 36$, then the value of x is given by a) $x = 5$ b) $x = 5$ and $x = -7$ c) $x = -7$ d) -5 and $x = 7$	M 1.1
6	Volume of a cube with side length 5cm is a) 25 cm^2 b) 125 cm^3 c) 125 cm^2 d) 25 cm^3	M 2.1

Q No	Question	Module
19	The unit of current is ----- a) Ampere b) Voltage c) Watt d) DC	M 4.2
20	The voltage across a conductor is 2V and a current of 1A flows through the conductor. What is the resistance of the conductor? a) 1 ohm b) 10 ohm c) 1/2 ohm d) 2 ohm	M 4.2

PART-B

(There should be at least 2 questions from each module)

(Maximum Marks: 8x5 Marks = 40 Marks)

II. Answer *any eight* questions from the following. Each question carries marks.5 Marks.

Q No	Question	Module
1	Two numbers are in the ratio 3:4. If their sum is 77, find the numbers?	M 1.1
2	The sum of side of a square and its half is 63. Find the side of the square.	M 1.1
3	The first, second and third terms of the proportion are 42, 54 and 24. Find the fourth term?	M 1.1
4	A circle has a radius of 23cm. Find its circumference and area?	M 2.1
5	If $\tan B = \frac{1}{2}$, where B is an acute angle in a right triangle ABC. Find $\sin B$ and $\cos B$?	M 2.1
6	Prove that: $\tan x + \cot x = \sec x \operatorname{cosec} x$?	M 2.1
7	Write a note on systems of units?	M 3.1
8	Differentiate between Mass and weight?	M 3.2
9	Differentiate between speed and velocity?	M 3.2
10	Write any two differences between heat and temperature?	M 4.1
11	State and explain Ohm's law?	M 4.2
12	How can we determine resistance of a metal?	M 4.2