

**MATHEMATICS**

**……/…../2021**

**8h30 am -11h30am**

**SENIOR FOUR END OF YEAR EXAMINATIONS, 2020/2021**

**SUBJECT: MATHEMATICS**

**COMBINATIONS:**

**PHYSICS-CHEMISTRY-MATHEMATICS (PCM)**

**MATHEMATICS-CHEMISTRY-BIOLOGY (MCB)**

**MATHEMATICS- PHYSICS- COMPUTER SCIENCE (MPC)**

**MATHEMATICS-COMPUTER SCIENCE –ECONOMICS (MCE)**

**MATHEMATICS –PHYSICS- GEOGRAPHY (MPG)**

**MATHEMATICS-ECONOMICS-GEOGRAPHY (MEG)**

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|  **/100** **Marks:** |

**DURATION: 3 HOURS**

**INSTRUCTIONS:**

1. Do not open this question paper until you are told to do so.
2. Answer all questions: **100 marks**
3. Use only a **blue** or **black** pen.

S4 CORE MATHEMATICS ,COMPREHENSIVE 2020/2021

**ANSWER ALL QUESTIONS (100MARKS)**

 1 )Evaluate the following:

 a)  (4marks)

 b) Find the value for  in the simplest form (6marks)

 2) Given the propositional function, , determine the values and the

truth value for the following:

a) (2marks)

 b)  (2marks)

 c)  (6marks)

 3) Solve simultaneously, by elimination: (10marks)

 

4)Find the equation of the horizontal asymptote to the curve  (6marks)

5) a)Given that A(2, 1), B(4, 4) and C(6, 7), find  in terms of  and  (5marks)

b)Find the image of the point (6, – 3) reflected in the x-axis. ( 5marks)

6)How many different committees of 3 people can be chosen from a group of

12 people? (6marks)

b) A letter is chosen from the letters of the word ‘’AMAZING’’. What is the

probability that the letter chosen is an ‘’A’’? (4marks)

7) A coin is tossed two times. Find the probability of obtaining

(a) A = {two heads} (5marks)

 (b) B = {one head and one tail} (5marks)

8)Rationalize the following (6marks)



9)Calculate

a)  (4marks)

b)  (6marks)

10) Solve the quadratic equation  (6marks)

11) If and 

Find

a)  (3marks)

b)  (3marks)

c)  (3marks)

d)  (3marks)