**Mathematics**

**…../……./2021**

**8h30 am -11h30am**

 

**SENIOR ONE END OF YEAR EXAMINATIONS, 202021**

**SUBJECT: MATHEMATICS**

|  |
| --- |
|  **/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**

 5) Use only a **blue** or **black** pen.

 **S1 MATH COMPREHENSIVE; 2020/2021**

 **ANSWER ALL QUESTIONS (100MARKS)**

1. If A = {2, 4, 6, 8} B = {1, 2, 3}

C = {6, 8, 10} D = {2, 3, 6},

Find:

(a) n (A) (2marks)

(b) n (B) (2marks)

 (c) n (C) (2marks

 (d) n (A) + n (B) (2marks)

 (e) A ∪ B ∪ C (2marks)

1. The function and 

 Find :

 a) (3marks)

 b)  (3marks)

 c)  (4marks)

1. Workout

a)  (3marks)

b)  (1marks)

c)  (1marks)

 4) Find the inverse of the following functions (5marks)

 

5) For how long, to the nearest year, must 160 000 FRW be invested in a financial institution to earn a simple interest of 19 200 FRW at 4.5% p.a. **(5marks)**

6) The sum of two numbers is 120 and their difference is 18. Find the two numbers. (10marks)

7)a)Solve the inequality x – 3 < 7 (3marks)

 b) Solve the equation  (2marks)

8) Define the following terms used in geometry

a) a line : (2marks)

b) Corresponding angles (2marks)

c) an obtuse angle ( 2marks)

d) a reflex angle (2marks)

e) Alternate angles (2marks)

9) a)Find the curved surface area of a cone whose slant height is 5 cm. The cone was modeled using a sector of a circle whose centre angle is 216º.

(Use π= 3.142) (5marks)

b) Calculate the radius of the base of the cone. (5marks)

10) The table below shows the masses of potatoes sold in a certain market in one week.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 90 | 100 | 110 | 90 | 100 | 120 | 100 | 110 | 70 | 90 |
| 70 | 90 | 100 | 80 | 120 | 80 | 110 | 100 | 100 | 110 |
| 110  | 80 | 100 | 100 | 110 | 110 | 90 | 80 | 80 | 100 |
| 120 | 90 | 80 | 90 | 100 |  90 | 100 | 90 | 80 | 110  |

1. Complete the table below: (**10marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Mass(****)** | **Tally** | **Frequence,** |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

 ii) Find the mean mass (**3marks)**

1. What is the mass modal **(3marks**)
2. What is the lowest mass **(2marks)**
3. What is the highest mass **(2marks)**