

**INSTRUCTIONS:** ATTEMPT ALL QUESTIONS IN SECTION A AND ONLY FOUR IN SECTION B

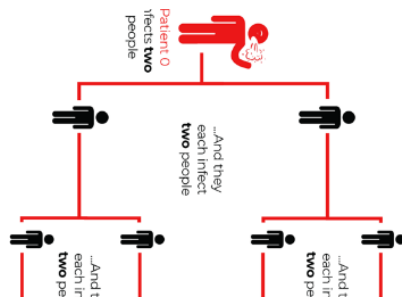
**TIME:** 2HRS

**SECTION A(40MARKS)**

1. On 22<sup>nd</sup> March 2020, Uganda reported its 1<sup>st</sup> case of covid-19 and the was as shown in the first and the second level below.

An infected person is likely to infect two people as illustrated above.

If you're a member of Namaliga village health team, help the Government to predict the number of infected people at the 20<sup>th</sup> and 25<sup>th</sup> level.



(05 marks)

2. St Mary's SSS has 25 teachers, 15 are female, one fifth of the male put on glasses, a third of female put on glasses. Find the number of teachers in this school who don't put on glasses.



(05 marks)

3. Akena, a saloon owner in Bembe wants to design his saloon such that it looks very nice. He plans to put his mirror such that if a customer sits at position  $(-2, 5)$ , he/she should be able to see his/her image at position  $(5, -5)$ . As an interior designer, use a graph to show Akena the rightful position to put his mirror.



(05 marks)

4. UMEME is planning to construct an electric transmission line. According to the surveyor, the transmission line will pass through some of the following places, St Mary's SSS and Bombo market at points  $(2, 3)$  and  $(4, 7)$  respectively. Find the linear equation of this transmission line.



(05 marks)

5. During a mathematics discussion between you and John, he asked you to help him find the values of 'a' and 'b' in the equation  $0.123\bar{3} = \frac{a}{b}$ . With clear steps, show how you helped John to solve this problem.



(5marks)

6. In an argument between Martha and Johnpaul, Martha claimed that in simplification of:  $\frac{1\frac{1}{2} - (8\frac{1}{3} \div 2\frac{1}{3})}{1\frac{1}{5} \text{ of } (1\frac{1}{4} + 1\frac{2}{3})}$ , the answer is  $-\frac{29}{49}$  while Johnpaul claimed the answer to be  $-\frac{29}{43}$ .  
workout the solution to find out who made the correct conclusion.

Brackets [ { ( - ) } ]  
BODMAS  
Rule  $\div \times + -$

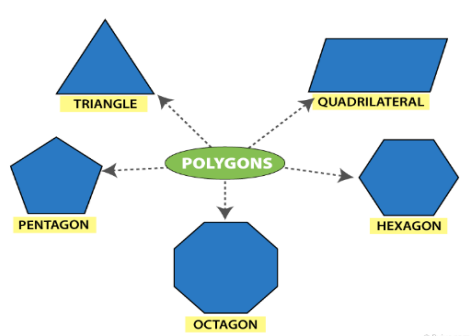
(5marks)

7. Kanyange, Atidrii and Carol are running a 10,000-meter race. Kanyange completes her first round after 60 seconds, Carol completes her first round after 75 seconds and Atidrii completes his after 90 seconds, when will they all be at the starting point together again? (Assuming they maintain constant speed while running)



(5 marks)

8. Travor was trying to answer his home work during second term holiday where he landed on the question about angle properties of regular polygons, the question required him to find the size of an interior angle of a regular heptagon. He approached you for help, workout the solution you offered to your friend Travor.



(5marks)

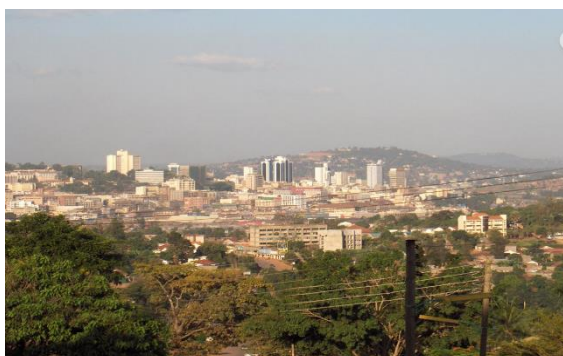
## SECTION B (60MARKS): ATTEMPT ONLY FOUR QUESTIONS

9. Uganda National Road Authority is planning to construct a roundabout at mile 20 along Kampala-Gulu Road. The area identified has a triangular flower garden with a base of 10m and other two sides making an angle of  $60^\circ$  and  $45^\circ$  with the base. By constructing a roundabout, the flower garden must not be destroyed. HK a Construction company charges 1,000,000 per meter constructed, as an engineer help UNRA to know how much money it should prepare for the company to complete this work. (Hint: The roundabout should not go beyond the vertices of the flower garden)



(15 marks)

10. Four towns R, T, K and G are such that T is 84 km directly to the North of R. K is at a distance of 60 km and on a bearing of  $295^\circ$  from R. G is at a distance of 30 km and on a bearing of  $340^\circ$  from K.
- Using a scale of 1 cm to represent 10 km, make an accurate drawing to show the positions of the four towns.
  - Find the distance and the bearing of G from T.
  - A vehicle takes 2 hours to move directly from G to T. Calculate the average speed of the vehicle.



(15marks)

11. A) The table below shows the times of the high and low tides

day	1 <sup>st</sup> high tide	1 <sup>st</sup> low tide	2 <sup>nd</sup> high tide	2 <sup>nd</sup> low tide
Monday	0030	0609	1312	1835
Tuesday	0130	0720	1422	1952
Wednesday	0243	0836	1537	2106
Thursday	0358	0941	1644	2207
Friday	0500	1035	1737	2258

- Write down the time of the 2<sup>nd</sup> high tide on Wednesday using 12-hour clock
- The lunch time starts  $1\frac{1}{2}$  hours before the high tide on Tuesday afternoon. Write down the lunch starting time in 12-hour clock.

B) 23<sup>rd</sup> February is a Tuesday. What will be the date on the next Tuesday if:

- it is a leap year.
- it is not a leap year. (15marks)

12. A school admits students in S.1, S.2, S.3, S.4 and S.5 following the following guidelines:

- S.2 should have 5 students less than those in S.1
- S.3 should have 15 students less than those in S.1
- S.4 should have a half of the students in S.1
- S.5 should have one-fourth of the students in S.1

During admission time, the headteacher doesn't know exactly the number of students to admit for different classes.

The current school enrolment from S.1 to S.4 is 680 students.

TASK:

- Help the headteacher to determine the number of students to admit for each class.
- Many people claimed that senior five has less number of students compared to other classes because of school dropout, give five major causes of school dropout in Uganda today.



(15marks)

13. Harriet a newspaper vendor earns a commission of 10% on every newspaper sold. She sells each newspaper for New Vision and Monitor at UGX 2,000, Bukedde at UGX 1,000 and Sunrise at UGX 2,500. On a good day, she sells 50 copies of New Vision and Monitor, 40 copies of Bukedde and 15 copies of Sunrise.

- Find the total commission earned by Harriet on the good day.
- Find the total commission she earns weekly, monthly, and annually (assume a month has 4 weeks and all are good days).



(15marks)

END

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