Uganda certificate of Lower secondary education

S.2 END OF TERM 1 EXAMINATION 2024

Paper 1

2 hours

Instructions

- ✓ *Attempt **all** items.*
- ✓ *Poorly organized work will not be marked*

Part I (Numbers)

1. (a) The school plans to hold a Parents meeting and it expects 1200 parents. It plans to hire tents of capacity 50 sitters, they are to serve one bottle of soda, a boiled egg and a piece of chicken. A tent is hired at sh.50000, a crate of soda has 24 bottles and costs sh.20,000, a tray of eggs consists of 30 eggs, each tray is at sh. 11,000, a chicken consists of 6 pieces, and each chicken costs sh.12,000.

TASK

As a senior two student, using a knowledge of number bases, help the school come up with a budget flame work for the event. (12 scores)

(b) Teacher Ivan is mathematics teacher at a certain school, in February he started seeing himself and his fellow teacher Mr. Mubiru growing fatter and fatter. They were advised to start doing some exercises at least every after a while. Teacher Ivan started exercising every after five days, while Mr. Mubiru every after six days. Again, teacher Ivan had a plan of tiling the room where his visitors would sleep. The room is to be tiled using square tiles of equal size. The room is 540cm by 420cm.

TASKS

i. If today is Saturday and teacher Ivan and Mr. Mubiru have exercised, on which day will they exercise together?
ii. Find the largest possible square tile that can be used if no broken tile is needed.
iii. Find the number of tiles needed. (13 scores)

Part II (Geometry and Measure)

2. (a) There is a quarantine of all cattle and goats in some parts of Western Uganda especially Mbarara District. The area honorable Member of Parliament (M.P) wants to throw for his constituents a celebration party for the success of the Parish Development Model (PDM) and he has invited a lot of guests. However due to the quarantine he cannot buy any animals from Mbarara and he has been advised to go to Kayunga where cheap cattle can be found. He moves from Mbarara to Masaka which is **160km** North of Mbarara. From Masaka he moves west wards **150km** to Kampala. From Kampala he heads to Mukono which is in the direction $S75^{o}W$ which is **90km** from Kampala. From Kampala he heads to Kayunga which is **148km** and south of Mukono.

When he reached Kayunga, he bought **400** cows and each cost **UGX850,000** per cow. The farmer and owner of the cow gives a **5%** discount on each cow.

TASKS.

(i) Direct the honorable MP on the shortest route he should take and the shortest distance between Mbarara and Kayunga.

(ii) Find the total cost he incurred in purchasing the cows. (18 scores)

(b) Mr. Kato when he had just got married with no child placed his nice looking photo of him and his wife close to the sofa sets where they sit at points A(1,1), B(4,1), C(1,5),D(4,5). After a time they gave birth their stubborn baby grew up, and so the baby started tampering with the beautiful photo of this couple. They moved it to a new position 4 steps to the left and 5 steps upwards.

TASKS

i. What are the coordinates of the new position of the photo?

ii. If they want to bring back the photo to the same position, how should they displace it? (07 scores)

Part III (Patterns and Algebra)

3. (a) A certain tourist in Britain is planning to visit the following places in Africa next month. The tourist has highlighted the following places on the map of Africa. These include South Africa, Burundi, Kampala, Dodoma, Accra, Bujumbura, Nairobi, Ghana, Johannesburg, Tanzania, Uganda, Kenya, Kigali, Cairo, Egypt, and Rwanda.

TASKS

i. Help the Tourist to sort the places by use of an arrow diagram

ii. What the relationship between the domain and the range.

iii. Describe the type of mapping in the arrow diagram above

iv. Using the relation f(x) = 3x-2, what is the domain if the range is {10, 16, 22, 25} (12 scores).

(b) In a multiple choice question test of 90 questions, each correct answer carries 5 marks and each wrong answer leads to a loss of 2 marks. The student scored a total of 387 marks from the test.

Later on as the student was discussing with a friend they found two numbers such that one exceeds the other by 11 and their sum is 73.

TASKS

i. How many questions were answered correctly?
ii. How many questions must a student fail so as to get a total of 240 marks?
iii. Find the two numbers (13 scores)