UACE S101 General Paper section B: Logic Quiz 23

Study the following information carefully and answer the questions that follow (50marks)

The Peoples' Bus Service (PBS) has a fleet of buses plying between Wakabale, the capital city and upcountry towns.

The bus service operates under th following conditions:

- Each bus must stop at each town for five minutes with or without passengers to drop or pick.
- No bus is allowed to operate before 07.00 hours and beyond 22.00 hours.
- A passnger may travel on any bus belonging to PBS as long as they have a valid ticket.
- The validity of the ticket is open only for the date it is issued.

Below is a one day time table showing the departure tim for five of the PBS buses plying from the city to the town of Bukone. This route passes through the towns of Konge, Ngocho and Muhanga.

Departure times for PBS Buses (hours)

TOWN	EXPRESS 111	FRIENDS 211	FLAMINGO 311	SPEED BIRD 411	HARAKA 511
Wakabale (City) (0km)	0.700	13.00	07.00	12.00	08.00
Konge (128km)	09.00	15.35	08.00	13.35	09.15
Ngecho (272mk)	11.15	18.30	09.15	15.25	10.55
Mahanga (362 km)	13.15	220.15	10.15	16.30	11.40
Bukone (412 km)	13.45	21.15	10.30	17.10	12.10

The order of priority for passenger to choose the bus to board is the followings:

- Age and mechanical conditions of the bus
- Reliability
- Comfort

- Speed.

The description the buses is shown below:

Express 111: is comfortable, has experienced driver but slow and in a poor mechanical condition.

Friends 211: has an experienced driver but old, slow and very uncomfortable

Framingo 311: is a new, very fast, reliable, comfortable and has experienced driver

Speed bird 411: has an inexperienced driver but it is comfortable, fast and in good mechanical condition.

Harak 511: is new, fast, comfortable, with experienced driver but it is unreliable.

Questions:

(a) Identify the bus with the best overall qualities, according to the passengers. Show your working. (06marks)
(b) Which buses do not make return journey and in which towns do they stay overnight if they were travelling at constant speed? (06marks)
(c) If one is to leave the city, stop at Ngocho for 1 ½ hours' shopping and travel to Bukone for a meeting at 13:00, which bus(es) would one use. Give reasons for your answer. (07marks)
(d) Explain the problems facing road transport in Uganda. (21marks)

Spelling, Punctuation, Gramatical expression (SPGE)   (10marks)

Suggested solutions

Questions:

(a) Identify the bus with the best overall qualities, according to the passengers. Show your working. (06marks)
   Marks are given for priorities as follow

Priority	Marks
Age and mechanical conditions of the bus	5
Driver's experience	4
Reliability	3
Comfort	2
Speed.	1

Table of grading buses according to passers' priority

Buses	Marks for priority					
	Age and mechanical conditons	Drivers experience	Reliability and timeliness	Comfort	speed	Total
Express 111	0	4	-	2	0	6
Frinds 211	0	4	-	0	0	4
Flamingo 311	5	4	3	2	1	15
Speed Bird 411	5	0	-	2	1	8
Haraka 511	5	4	0	2	1	12

The bus with the best overall qualities according to passengers is Flamingo 311

(b) Which buses do not make return journey and in which towns do they stay overnight if they were travelling at constant speed? (06marks)

Time for express 111 for one legof the journer = 13.45 – 07.00 = 6.45

When this bus return th time it arrives at Wakable will be 13.45 + 6.45 =20.30

This will be ableto make return jurney

Time for Friend 211 for one leg of the journer = 21.15 – 13.00 = 7.15

When this bus return th time it arrives at Wakable will be 21.15 + 7.15 = 04.30 (next day)

This will **not** be able to make return jurney

Time available before 22.00 on the return journey = 22.00 – 21.15 = 35 minutes

Time required by the bus from Bukone to Mahanga = 21.15 – 20.15 = 45 minutes; this more than the time required to beat the deadline at 22.00

Therefore Friends211 does not make a return journey and sleeps at Bukone.

Time for Flamingo 311 for one leg of the journer = 10.30 – 07.00 = 3.30

When this bus return th time it arrives at Wakable will be 10.30 + 3.30 = 14.00

This will be able to make return jurney

Time forHarak 511 for one leg of the journer = 12.10 – 08.00 = 4.10

When this bus return th time it arrives at Wakable will be 12.10 + 4.10 = 16.20

This will be able to make return jurney

Hence Friend 211 is the only bus that cannot make a return journey, and stays at Bukone for a night.

(c) If one is to leave the city, stop at Ngocho for 1 ½ hours' shopping and travel to Bukone for a meeting at 13:00, which bus(es) would one use. Give reasons for your answer. (07marks)

He uses Flamingo 311 and arrives at Ngocho at 9.15

If he stays at Ngocho at for 1.30 he would need to leave at 9.15 + 1.30 =10.45

The bus that leaves Ngocho at about 10.45 and reaches Bukone before 13.00 is Haraka 511.

Hence he use Framingo 311 and arives at Ngocho at 9.15 and then use Haraka 511 and arrives at Bukone at 12.10

(d) Explain the problems facing road transport in Uganda. (21marks)

Road transport in Uganda faces several challenges:

1. **Poor Road Infrastructure**: Many roads are in poor condition, with potholes and inadequate maintenance.
2. **Traffic Congestion**: Rapid urbanization and population growth have led to severe traffic congestion, especially in cities like Kampala.
3. **Inefficient Public Transport**: The public transport system is fragmented and unreliable, with an over-reliance on informal modes of transport like mini-busses (matatus) and motorcycles (boda bodas).
4. **Safety Concerns**: High levels of commuter impunity and inadequate enforcement of traffic laws contribute to frequent accidents.
5. **Environmental Impact**: The use of old, poorly maintained vehicles contributes to air pollution and environmental degradation.
6. **Lack of Funding**: Insufficient investment in road infrastructure and public transport systems hinders improvements and expansion.

Spelling, Punctuation, Gramatical expression (SPGE)   (10marks)

Thank you
Dr. Bbosa Science