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## General paper Logic quiz 24

Read the following information carefully and answer the questions that follow

The solar year is 365 days, 5 hours, 48 minutes and 46 seconds. The year not being exact divisible by months and days, the practice arose out of marking arbitrary divisions and inserting extra days. The Gregorian calendar in use today uses the same trick to “catch up” with the solar year. Hence the months of April, June, September and November have 30 days while January, March, May, July, August, October and December have 31 days. February has 28 days in ordinary years and 29 in a Leap year.

Since the ancient times, the days and months in a year have been associated with the movement of the stars and their placement in heavens. Through careful observation and study of stars and planets, diviners called astrologers were able to forecast supposed influences of stars and planets on human affairs according to the seasons. This later developed into present day “horoscope” or “Your stars”. The horoscope is a diagram of the relative positions of planets and signs of the Zodiac at specific time (as at one's birth) for use by astrologers in inferring individual character and personality traits and foretelling events of a person's life.

All this seems to control the life of Mzee Byarufu; an illiterate man living in the village of Kikongi. In his culture, it is believed that one's character and life are determined and influenced by the time of birth. Mzee Byarufu has led a very troubled life full of misfortunes. Being illiterate, he does not know when he was born. All he knows is that he was born the day after Christmas celebrations in the year World War II ended. On the day he was born, his father died while on his way back from the frontline in Burma. His body was never returned for proper burial among his ancestors. Mzee Byarufu has been told that all his misfortunes are either related to the day of his birth or are a result of unperformed rituals relating to the death of his father. On the day he turned 13 years, his mother followed her husband to the grave. He later married and

produced several children, half of whom perished in an accident exactly on one of his birthdays. Mzee Byarufu has since become superstitious. He associates certain misfortune to dates, numbers and numerous omens. He has been assured by witch doctors and astrologers that unless the exact date, day of the week, month and year of his birth are discovered, his misfortunes would never end.

### Questions

- (a) Using today's modern calendar, help Mzee Byarufu find out the date, day of the week, month and year in which:
- (i) He was born
  - (ii) His mother died
- (show your working) (18 marks)
- (b) Mzee Byarufu got married at 18 years and produced children every other year until he was 30 years old. On his 31<sup>st</sup> birthday, some of his children perished in a road accident while coming from a party.
- (i) How many children did he:
    - Have by the age of 30 years?
    - Remain with after accident(06 marks)
  - (ii) Identify the year in which Mzee Byarufu produced his last child (02 marks)
- (c) What are the problem which are likely to be faced by superstitious people like Mzee Byarufu? (10 marks)
- (d) Do you believe in horoscope? Give reasons for your answer. (04marks)
- Spellings and Grammatical Expression (SPGE) (10 marks)

## Suggested answer

(a) Using today's modern calendar, help Mzee Byarufu find out the date, day of the week, month and year in which:

(i) He was born

He was born of 26<sup>th</sup> December 1945

Finding the day of the week

Use the following tables

Month codes

Month	J	F	M	A	M	J	J	A	S	O	N	D
code	0	3	3	6	1	4	6	2	5	0	3	5

Century code

Year	1600s	1700s	1800s	1900s	2000s
code	6	4	2	0	6

Day codes

Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat
code	0	1	2	3	4	5	6

Procedure

Find the Sum = day of the week + month code + century code + last two digits of the year + a quarter of the last two digits of the year disregarding the decimal places

For 26<sup>th</sup> Dec 1945

Sum = 26 + 5 + 0 + 45 + 11 (or 45/4)

= 56

Divide the sum by 7 and take the remainder only

= 56/7 = remainder 0 (corresponding to the day of the week)

Therefore 26<sup>th</sup> December 1945 was a Sunday

**Hence Mzee Byarufu was born on Sunday 26<sup>th</sup> December 1945**

For a leap year, subtract 1 from the final answer if the month is Jan or Feb.

Examples for practice

Find the day of the week for

a. 2<sup>nd</sup> march 1999

$$\text{Sum} = 2 + 3 + 0 + 99 + 24 = 128$$

The remainder when the sum is divided by 7 = 2 or Tuesday

b. 5<sup>th</sup> Feb 2000

$$\text{Sum} = 5 + 3 + 6 + 00 + 00 = 14$$

The remainder when the sum is divided by 7 = 0 (or Sunday)

2000 being a leap year the right is the day before Sunday which Saturday

(ii) His mother died

(show your working)

(18 marks)

His mother died 13 years later after his birth =  $1945 + 13 = 1958$

Hence his mother died on 26<sup>th</sup> Dec. 1958

Finding the day of the week

$$\begin{aligned} \text{Sum} &= 26 + 5 + 0 + 58 + 8 \text{ (58/7 discarding remainder)} \\ &= 97 \end{aligned}$$

$\text{Sum}/7 = \text{remainder } 6$  (Saturday)

**Hence the mother died on Saturday 26 December 1958**

c. Mzee Byarufu got married at 18 years and produced children every other year until he was 30 years old. On his 31<sup>st</sup> birthday, some of his children perished in a road accident while coming from a party.

$$\begin{aligned} \text{Number of children born} &= 1 \text{ at } 19, 1 \text{ at } 21, 1 \text{ at } 23, 1 \text{ at } 25, 1 \text{ at } 27, \\ &= 5 \end{aligned}$$

(iii) How many children did he:

- Have by the age of 30 years?

$$\begin{aligned} \text{Number of children born} &= 1 \text{ at } 19, 1 \text{ at } 21, 1 \text{ at } 23, 1 \text{ at } 25, 1 \text{ at } 27, \\ &= 5 \end{aligned}$$

- Remain with after accident

(06 marks)

Total number of children at 31 = 5 + 1 at 31 = 6

After the accident a half of the children perished remaining with 3

- (iv) Identify the year in which Mzee Byarufu produced his last child  
(02 marks)

The year in which Mzee Byarufu produced the last child = 1945 + 31  
= 1976

- d. What are the problems which are likely to be faced by superstitious people like Mzee Byarufu? (10 marks)

Superstition can lead to various problems, including:

1. **Fear and Anxiety:** Belief in superstitions can create unnecessary fear and anxiety, affecting mental health.
  2. **Hindrance to Rational Thinking:** Superstitions often discourage logical and critical thinking, leading to irrational decisions and behaviors.
  3. **Economic Loss:** People may spend money on rituals, charms, or superstitious practices, diverting resources from more productive uses.
  4. **Health Risks:** Reliance on superstitious remedies instead of seeking medical treatment can result in worsening health conditions.
  5. **Discrimination:** Superstitions can lead to stigmatization and discrimination against certain groups or individuals, based on unfounded beliefs.
  6. **Social Conflicts:** Differing superstitions can cause conflicts within communities, leading to divisions and mistrust.
  7. **Exploitation:** Individuals may be exploited by those who claim to have special powers or knowledge, often for financial gain.
- e. Do you believe in horoscope? Give reasons for your answer.  
(04marks)

Challenges in believing in horoscope

Believing in horoscopes can present several challenges:

1. **Lack of Scientific Basis:** Horoscopes are not grounded in scientific evidence, which can lead to skepticism and criticism from the scientific community.

2. **Overgeneralization:** Horoscopes often provide vague and generalized predictions that can apply to many people, reducing their accuracy and reliability.
3. **Confirmation Bias:** People may selectively remember accurate predictions and ignore incorrect ones, reinforcing their belief in horoscopes.
4. **Dependency:** Relying too much on horoscopes for decision-making can hinder personal growth and self-reliance.
5. **Emotional Impact:** Negative horoscope predictions can cause unnecessary worry or anxiety, affecting mental well-being.
6. **Misinterpretation:** Ambiguous language in horoscopes can lead to varied interpretations, reducing their consistency and usefulness.
7. **Exploitation:** Some individuals or businesses may exploit believers for financial gain, offering expensive readings or products.

### Advantages for not believing in horoscope

Not believing in horoscopes can offer several advantages:

1. **Rational Decision-Making:** You base your decisions on logic, facts, and evidence rather than on astrological predictions.
2. **Personal Responsibility:** You take full responsibility for your actions and choices, empowering yourself to create your own path.
3. **Reduced Anxiety:** You're less likely to feel anxious or worried about the future based on horoscope predictions.
4. **Time and Money Savings:** You save time and money that might otherwise be spent on astrological consultations or readings.
5. **Clearer Focus:** Without horoscopes, you can focus more on setting realistic goals and working towards them with a clear, undistracted mind.
6. **Improved Self-Confidence:** You build self-confidence by trusting your own instincts and abilities rather than relying on external predictions.
7. **Avoidance of Bias:** You avoid confirmation bias, making it easier to see situations objectively and make balanced decisions.

Spellings and Grammatical Expression (SPGE)

(10 marks)

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Thanks

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