

REGISTRATION CENTRE NUMBER		CENTRE NAME		FOLD ← HERE
CANDIDATE'S FULL NAMES				
CANDIDATE IDENTIFICATION NUMBER	SUBJECT CODE 0590	PAPER NUMBER 2		
FOR OFFICIAL USE ONLY				
GENERAL CERTIFICATE OF EDUCATION BOARD ORDINARY LEVEL EXAMINATION				
SUBJECT TITLE LOGIC		SUBJECT CODE 0590	PAPER NUMBER 2	
EXAMINATION DATE: JUNE 2023				

Two and a half hours

Answer FIVE questions, taking ALL the THREE Questions from Section A and ANY TWO from Section B. ONLY THE FIRST FIVE QUESTIONS ANSWERED WILL BE MARKED.

All the questions carry 20 marks. For your guidance, the approximate mark for each part of a question is indicated in brackets.

You are reminded of the necessity for good English and orderly presentation in your answers.

In solving, you are advised to show all the steps in your working, giving your answer at each stage.

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Name of Examiner		
Signature of Examiner:		
Date:		

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SECTION A: STRUCTURAL

1. (a) (i) List two reasons for the study of Logic:

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.....

.....

- (ii) State the difference between a Concrete Term and Abstract Term.

.....

.....

.....(2 x 2 marks)

- (b) What is the difference between:

- (i) A Sentence and a Proposition?

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- (ii) Quantity and Quality?

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.....(2 x 2 marks)

- (c) (i) State one rule of Contrariety:

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(ii) Define the Figure of the Syllogism:

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(2 x 2 marks)

(d) (i) When is an Enthymeme considered to be in the First Order?

.....

(ii) Give two reasons why the study of Fallacies are important:

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(2 x 2 marks)

(e) Briefly explain the following:

(i) Simple Statement.

.....

(ii) Truth-Table:

.....

(2 x 2 marks)

2. (a) Match the types of Terms in Set A to their corresponding examples in Set B below. All the pairs in set B should not be used.

SET A: Types of Terms		SET B: Examples of Terms	
(i)	Singular term	a.	Rich and poor
(ii)	Correlative term	b.	School and church
(iii)	General term	c.	Yaoundé and Douala
(iv)	Contrary term	d.	Husband and wife
		e.	Deaf and dumb

.....(4 x 1 marks)

- (b) (i) State any two indicators of a Modal Proposition:

- (ii) Name the parts of a Hypothetical Proposition:

.....(2 x 2 marks)

- (c) State:

- (i) The rules of Obversion:

- (ii) The terms found in the Major Premise of a Categorical Syllogism:

.....(2 x 2 marks)

- (d) (i) When is a Hypothetical Syllogism considered to be Pure?

(ii) What makes Formal Fallacies different from Informal Fallacies?

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.....(2 x 2 marks)

(e) Briefly explain the following concepts:

(i) A variable.

.....

.....

(ii) Logical connective.

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.....(2 x 2 marks)

3. (a) (i) Briefly explain how Logic and History are related :

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.....

(ii) Define the Cognitive use of Language.

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.....(2 x 2 marks)

(b) (i) What is a Standard Form Categorical Proposition?

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(ii) Differentiate between a Hypothetical Proposition and a Disjunctive Proposition:

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.....(2 x 2 marks)

(c) Distinguish between the following:

(i) The Invertend and the Inverse:

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.....

(ii) State two General Rules of the Standard Form Categorical Syllogism according to Distribution of Terms:

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.....(2 x 2 marks)

(d) (i) When is a Dilemma considered to be Destructive?

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(ii) State the rules of Hypothetical Syllogism:

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.....(2 x 2 marks)

(e) (i) State the rule of Conjunction:

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(ii) What are the Logical Constants for the Wedge and the Triple Bar?

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.....(2 x 2 marks)

SECTION B: PROBLEM- SOLVING

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4. Read the passage below and answer the questions that follow:

The Logic students of G.B. H. S held a meeting to examine their study strategies. At the end of the session, they agreed to be very serious, attend classes regularly and form study groups. When the meeting was over, the staff equally had a meeting with all examination students to advise and orient them in their studies. During the meeting, some students raised a worry concerning the lack of notes and some basics needs.

The college counselor advised that, success is a result of joint effort of teachers and parents. If parents support their children and teachers teach well, success will be guaranteed. So, either parents or teachers are responsible for students' failure.

One of the students wondered aloud, "but what is a college?". "It is an institution of higher learning" said the counselor. In conclusion, the principal stated that, "teachers are always guardians. Most parents do not guide". It is clear that since most parents are irresponsible, every parent is irresponsible.

Questions:

- (a) (i) Identify from the passage a General Term and a Collective Term. (2 x 2 marks)
- (ii) Select a kind of Definition from the passage. (2 x 2 marks)
- (b) Translate the following Propositions into their Optimum Logical Forms:
 - (i) *Every parent is irresponsible.*
 - (ii) *Most parents are irresponsible.* (2 x 2 marks)
- (c) (i) From the following premises, derive a suitable conclusion:

All teachers are guardians.
Some parents are not guardians.
Therefore.....
- (ii) Determine the Mood of the Syllogism in C (i) above. (2 x 2 marks)
- (d) (i) Provide the Conclusion to the following argument to make it a Modus Ponens:

If teachers teach well, then success is guaranteed.
Teachers teach well.
Therefore
- (ii) Identify a Fallacy of Composition from the passage. (2 x 2 marks)
- (e) Using the variables p, q and r, symbolise the following statements:
 - (i) If parents support their children and teachers teach well, success will be guaranteed.
 - (ii) "Either parents or teachers are responsible for student's failure". (2 x 2 marks)

5. (a) (i) Indicate the type of reasoning used in this argument: *since African countries are under developed and Cameroon is an African Country, it means that she is under developed.*
- (ii) Criticize this Definition, *An engineer is one who performs engineering activities.* (2 x 2 marks)
- (b) (i) Using *mothers* as Subject Term and *caring persons* as the Predicate Term, construct an O Standard Form Categorical Proposition.
- (ii) Determine the Distribution of Terms in the Proposition in b (i) above. (2 x 2 marks)
- (c) (i) Determine the validity of the Syllogism below using the General rules of the Categorical Syllogism:

No pastors are liars
Some prophets are not pastors.
Therefore, some prophets are not liars
- (ii) Give the Converse of, *No Spirits are mortals:* (2 x 2 marks)

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- (d) (i) Construct an Enthymeme of the Second Order from the Syllogism in c (i) above

No women are priests.

Some priests are teachers.

Therefore, some teachers are not women.

- (ii) Identify the form of this Argument

If the questions are easy then the students will pass the exams.

Questions are easy.

Therefore, students will pass the exams.

(2 x 2 marks)

- (e) (i) Construct the Truth-Table for $(\sim p \cdot \sim q)$

- (ii) Symbolize this statement using the variables p and q, *neither teachers nor students are illiterates.*

(2 x 2 marks)

6. (a) (i) In the expression, *Medical doctors such as Gynecologists, Pediatricians, Dermatologists and Diviners.*

Identify the Totum Divisum and Membra Dividentia.

- (ii) Identify the following Definitions: *this is the woman who deceived me and took my money.* (2 x 2 marks)

- (b) (i) Construct a Disjunctive Proposition with the same Subject and different Predicates using the Term *Miriam*, *spinster* and *Married woman*.

- (ii) Translate the Proposition in b(i) above into a Hypothetical proposition. (2 x 2 marks)

- (c) (i) What is the Truth-value of "E and I" given that "O" is false?

- (ii) Obvert *All students are learners.* (2 x 2 marks)

- (d) (i) Identify the form of this Dilemma:

If the rains come early, and farmers plant in time then the harvest will be good.

Either the rains come early or farmers plant in time.

Therefore, the harvest will be good.

- (ii) Which Fallacy does this Argument commit?

Dangote is very rich.

He is a Nigerian.

Therefore, all Nigerians are very rich.

(2 x 2 marks)

- (e) (i) Determine the truth-value of $(\sim p \vee \sim q) \supset q$ when both p and q are False

- (ii) Using the variables P as *parents pay fees*; A as *students attend classes regularly* and S as *success will be guaranteed*, express this function into ordinary language: $(\sim P \cdot \sim A) \supset \sim S$ (2 x 2 marks)