File Ref.No.9534/GA - IV - B1/2012/CU

UNIVERSITY OF CALICUT

Abstract

BA Philosophy Programme - under School of Distance Education - syllabus and model question paper for the Course replacing the Project Study in the Fifth/Sixth Semester of BA Philosophy (SDE) for 2011-12 admission - approved - implemented - orders issued

UNIVERSITY OF CALICUT (G & A - IV - B)

U.O.No. 5371/2013/CU   Dated, Calicut University.P.O, 08.11.2013

Read:-1. U.O No. GAIV/B1/247/2011 dated 15-11-2011
2. Minutes of the meeting of the Steering Committee on CCSS UG held on 05.06.2013
3. U.O.No. 2421/2013/CU Dated 02.07.2013
4. Letter received on 31-10-2013 from the Chairman, Board of Studies in Philosophy
5. Orders of Vice Chancellor in the file of even No. dated 02-11-2013.

ORDER

Vide paper read first above, Orders were issued implementing the syllabus of BA Philosophy Programme CCSS for SDE/ Private mode.

The Steering Committee on Choice based Credit Semester System (UG), vide read second above, resolved to amend the existing Regulations of Choice based Credit Semester System under School of Distance Education and vide Clause 4.6 resolved that there will be no Project Work during V Semester (2013-14) as detailed in the Syllabus. Instead, an additional Course (based on the Core Course) will be offered, the examination of which will be conducted in the VI Semester (for 2011-12 CCSS SDE admission) and accordingly vide paper read third above, orders were issued amending the existing Regulations of CCSS UG SDE .

Vide paper read fourth above, the Chairman, Board of Studies in Philosophy has forwarded the syllabus and model question paper for the Course replacing the Project Study in the Fifth/Sixth Semester of BA Philosophy (SDE).

Vide paper read fifth above, Vice Chancellor has accorded permission to implement the additional paper for BA Philosophy CCSS under SDE Stream replacing the project work in the V and VI semester for BA Philosophy Programme .

Sanction has therefore been accorded to implement the syllabus and model question paper for the Course replacing the Project Study in the Fifth/Sixth Semester of BA Philosophy (SDE) for 2011-12 CCSS UG SDE admission.

Orders are issued accordingly implementing the syllabus and model question paper for the Course replacing the Project Study in the Fifth/Sixth Semester of BA Philosophy (SDE) for 2011-12 CCSS UG SDE admission. The syllabus is uploaded in the University website.

Muhammed S
Deputy Registrar

To
The Director, SDE
Copy to:CE/ Ex Section/ EG Section/ DR and AR SDE/ EX IV/ Tabulation Section/ SDE Exam / System Administrator with a request to upload the Syllabus in the University website/ GA I F Section/ Library/ SF/ FC/DF

Forwarded / By Order

Section Officer

BA Philosophy (SDE) Programme
Course in place of the Project Study in the Fifth/Sixth Semester

Title of the course: **Applications of Logical Reasoning**

Vision and goal of the course

To develop the learner's potential for critical thinking and intellectual problem-solving in the context of day to day conversation, competitive examinations, argumentation in legal circles and media debates etc.

The target group

The course is designed for the UG Philosophy SDE stream students who have already completed two courses covering the essential topics of logic (PY3 B 04 and PY5 B 07).

Method and procedure

The course consists of five modules of application based exercises pertaining to the logic courses mentioned above. The learner is advised to revise and recollect the topics therein before attempting to do the exercises specified in this course.

Each module contains a specific application and problem solving based on the theoretical studies made by the learners earlier. The component and method of problem solving are described in the modules, and model exercises are also given. The learner is expected to follow keenly the instructions and examples.

Examination and evaluation

The questions to be set are meant for testing the ability of the learner to apply what is already leaned, to construct questions and to solve problems that involve test of reasoning, skill for linguistic analysis and the ability to detect errors in reasoning. Hence they include three types - *MCQ, Fill in the blanks questions* and *Construct and Convert questions*.

General Outline of the Course

Module I - Reduction of ordinary language sentences into standard form propositions.

Module II - Conversion of A, E, I, O propositions according to relations of opposition between categorical propositions as shown in the traditional square of opposition.

Module III - Changing categorical propositions into converse, obverse and contrapositive according to rules of eduction/immediate inference.

Module IV - Detecting fallacies according to the rules of categorical syllogism.

Module V - Deriving the logical conclusion from two given premises.

Description of the Modules

Module I

There are specific rules and devices for translating/reducing ordinary language sentences into standard form categorical propositions. Sentences we commonly use are not always in a strict logical form, i.e. a proposition. For logical analysis, they should be translated into standard form propositions. The translation/reduction of ordinary language sentences or non-standard form propositions into standard form propositions is necessary to determine the validity of arguments. However, the meaning of the proposition should not be lost in this process. Some of the devices to reduce a non-standard form propositions into standard form propositions are given below:

Device I - Some propositions look like universal negative, but actually they are not so. Their meaning indicates that they are only particular negative propositions.

Model Exercises

Ordinary language sentences

1. All that glitters is not gold.
2. Every student is not a scholarship holder.

Standard form categorical propositions

1. Something that glitters is not gold.
2. Some students are not scholarship holders.

Device II - There are propositions having words like "only", "none but" "alone" etc. They can be translated into universal affirmative propositions by interchanging the position of subject and predicate terms. They can also be translated into universal negative by simply negating its subject term without any change in their position.

Model Exercises

Ordinary language sentences

1. Only private vehicles are permitted.

2. None but professors are invited for the discussion.

Standard form categorical propositions

Into A proposition

1. All those which are permitted are private vehicles.

2. All those who are invited for the discussion are professors.

Into E proposition

1. No non-private vehicles are permitted.

2. No non-professors are invited for the discussion.

Device III - Sentences which begin with words like "all", "any", "every", "always" etc. indicate universal quantity.

Model Exercises

Ordinary language sentences

1. Every man loves children.
2. Writers always are eccentric.
3. Any person is free to be a member of this library.

Standard form categorical propositions

1. All men are children lovers.
2. All writers are eccentric persons.
3. All persons are eligible to be the member of this library.

Device IV - Sentences containing the words like "except", "alone", "all but a few", "only some" etc indicate compound propositions that can be converted into affirmative and negative propositions.

Model Exercises

Ordinary language sentences

1. All except children are allowed in the hall.

2. Man alone is rational animal.

3. Only some students of this institution are Indian citizens.

Standard form categorical propositions

Into affirmative proposition

1. All non-children are allowed in the hall.
2. All men are rational animals.
3. Some students of this institution are Indian citizens.

Into negative proposition

1. No children are allowed in the hall.

2. No non-man is a rational animal.

3. Some students of this institution are not Indian citizens.

Device V -   Proposition without any explicit quantifier is reduced by looking into the meaning of it which normally reveals the quantity.

Model Exercises

Ordinary language sentences
1. Children are naughty.
2. There are honest politicians.
3. Flowers are beautiful.
   Standard form categorical propositions
   1. All children are naughty.
   2. Some politicians are honest persons.
   3. All flowers are beautiful.

Module II

According to traditional square of opposition there are four relations of opposition between A, E, I, O propositions.

Contrary   – A and E - cannot both be true, but both can be false together.

Sub-contrary   – I and O - cannot both be false, but both can be true together.

Contradictory - A and O, I and E - If A is true O is false, If O is true A is false and If E is true I is false, If I is true E is false.

Sub-altern   - A and I, E and O - If A is true I is true and if I is true A is undetermined, if E is true O is true but if O is true E is undetermined.

Model Exercises

Ex I

1. Construct an A proposition and find out its contradictory.
2. Construct an E proposition and find out its contradictory.
3. Construct an I proposition and find out its contradictory.
4. Construct an A proposition and find out its contrary.
5. Construct an E proposition and find out its contrary.
6. Construct an A proposition and find out its subaltern.
7. Construct an E proposition and find out its contradictory.
8. Construct an A proposition and find out its contradictory.
9. Construct an I proposition and find out its sub-contrary.

Ex II

1. In contrary opposition, A and E both cannot be _____together.__
2. In subaltern opposition, if I is true A is_____.
3. In sub-contrary opposition, I and O both can be _____ together.
4. If an I proposition is true its contradictory is _____.
5. If O proposition is true its subaltern is _____.

Module III

Immediate inference by eduction is of three types - Conversion, Obversion and Contraposition. A, E, I, O propositions can be changed into these three without any change in meaning as shown in the following table:

Propositions	Conversion	Obversion	Contraposition
All S is P.	Some P is S.	No S is non-P.	All non-P is non-S.
No S is P.	No P is S.	All S is non-P.	Some non-P is not non-S.

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Some S is P.	Some P is S.	Some S is not non-P.	Not valid
Some S is not P	Not valid	Some S is non-P.	Some non-P is not non-S.

Model Exercises

Ex I -

1. Construct an A proposition and find out its converse.

2. Construct an E proposition and find out its converse.

3. Construct an I proposition and find out its obverse.

4. Construct an I proposition and find out its converse.

5. Construct an O proposition and find out its converse.

6. Construct an O proposition and find out its obverse.

7. Construct an A proposition and find out its contrapositive.

8. Construct an E proposition and find out its contrapositive.

9. Construct an O proposition and find out its contrapositive.

Ex II -

1. All men are mortal.

Some mortals are men. (Converse)

No men are non-mortal. (Obverse)

All non-mortals are non-men. (Contrapositive)

2. No students are senior citizens.

No senior citizens are students. (Converse)

All students are non-senior citizens. (Obverse)

Some non-senior citizens are non-students. (Contrapositive)

3. Some graduates are employees.

Some employees are graduates. (Converse)

Some graduates are not non-employees. (Obverse)

4. Some students are not Indians.

Some students are non-Indians. (Obverse)

Some non-Indians are non-students. (Contrapositive)

Module IV

Fallacy is a mistake in reasoning. Different types can be detected in syllogistic reasoning.

a) Fallacy of undistributed middle: Occurs when middle term is not distributed in any of the premises.

E.g.   All cows are **mammals**.

All cats are **mammals**.

Therefore, all cats are cows.

Both the premises are A propositions, and hence distribute only subject term. Here the middle term is in the predicate position of the premises, and hence undistributed in both the premises.

b) Fallacy of illicit major: A formal mistake made when the major term of a syllogism is undistributed in the major premise but distributed in the conclusion.

E.g.   All dogs are **fierce animals**.

No cats are dogs.

Therefore, no cats are **fierce animals**.

Major term appears as the P of the minor premise which is A, and it is undistributed because A proposition distributes only S. Major term in the conclusion is distributed because it is an E proposition which distributes both S and P.

c) Fallacy of illicit minor: A formal mistake made when the minor term of a syllogism is undistributed in the minor premise but distributed in the conclusion.

E.g.   No mathematicians are musicians.

All mathematicians are **scientists**.

Therefore, no **scientists** are musicians.

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Minor term appears as the P of the minor premise which is A, and it is undistributed because A proposition distributes only S. Minor term in the conclusion is distributed because it is an E proposition which distributes both S and P.

d) There are two rules of quality, and their violation creates fallacy and makes the syllogism invalid.

i) A syllogism having both the negative premises is invalid.

ii) If one of the premises is negative and the conclusion is affirmative, the syllogism is invalid.

Model Exercises

Ex I -

1. A syllogism having both the negative premises is _____.

2. If one of the premises is negative, the conclusion must be _____.

3. A valid syllogism should not have both _____ negative.

Ex II -

1. All P is M.
   No S is M.
   Therefore, all S is P.

This is an invalid syllogism because the conclusion is _____.
    a) universal   b) not negative   c) particular   d) negative

d) According to the rule of quantity, a syllogism having both the universal premises must have universal conclusion.

Model Exercises

Ex I -

1. If the premises of a syllogism are universal the conclusion must be _____.

2. A syllogism having both the universal premises and particular conclusion is _____.

Ex II -

1. If one of the premises in a syllogism is universal negative and the other universal affirmative, the conclusion is _____.

      a) universal negative   b) universal affirmative

      c) particular negative   d) none of these

Module V

<u>Reasoning Aptitude Tests</u>: Logical reasoning is necessarily involved in various types of intellectual problem solving. Categorical syllogism is a model of deductive reasoning. In a standard form it contains three categorical propositions in which the first two are the premises or grounds of reasoning and the third one is the conclusion derived from them. In a categorical syllogism, the conclusion necessarily follows from the given premises, and in a valid syllogism there can be one and only one conclusion. So it is possible to derive the conclusion from given premises by proper reasoning.

<u>Model Exercises</u>

Derive valid conclusions from the given premises:

1. All human beings are mortal.

   All professors are human beings.

   Therefore, _____.

2. No soldiers are cowards.

   John is a soldier.

   Therefore, _____.

3. Some successful people are rich.

   Some businessmen are rich.

   Therefore, _____.

4. Some scientists are not Europeans.

All British are Europeans.

Therefore, _____.

5. No p are q.

   All r are p.

   Therefore, _____.

Answers: 1. all professors are mortal.
   2. John is not a coward.
   3. some businessmen are successful people.
   4. some British are not scientists.
   5. no r are q.

MATERIALS FOR STUDY

1. The study materials already supplied for your third semester course 'Essentials of Formal Logic' will be very much useful to acquire basic knowledge of the components in this course.

2. There are some useful websites providing e-learning materials like 'Logic Tutor'. One is W.W.Norton's Logic Tutor available on http://www.wwnorton.com/college/phil/logic3/ch8/contradi.htm. You can search and find out similar ones.

References:

1. Copi,Irving M. Introduction to Logic. New Delhi: Prentice-Hall of India, 2001.

2. Jain, Krishna. A Textbook of Logic. New Delhi: D. K. Printworld, 2007.

Special instructions:

1. For Module I, refer Krishna Jain - Pages 33-40 and Copi - Pages 278-285.

2. For other modules refer relevant sections in the same books.

Question Paper Pattern

Time: 2 hrs 30 minutes   Maximum weightage: 27

Answer all questions in all sections.

SECTION A

Multiple choice questions.

Choose the correct answer: Each question carries a weightage of ½**.**

Questions 1 to 16.

SECTION B

Fill in the blanks. Each question carries a weighta ge of **one**.

Questions 17 to 25.

SECTION C

Construct and derive as directed. Each question carries a weightage of **two**.

Questions 26 to 30.

MODEL QUESTION PAPER

Time: 2 hrs 30 minutes   Maximum weightage: 27

Answer all questions in all sections.

SECTION A

Multiple choice questions.

Choose the correct answer: Each question carries a weightage of ½**.**

1. The standard form categorical proposition of 'Only members are allowed into the hall' in negative is _____.

   a) No non-members are allowed into the hall.   b) Some non-members are allowed into the hall.   c) All non-members are allowed into the hall.   d) None of these

2. The standard form categorical proposition of 'A bat is a mammal' is _____.

   a) No bats are mammals.   b) No mammals are bats.

   c) All bats are mammals.   d) Some mammals are not bats.

3. According to the rule of quantity, a syllogism with universal premises should not have _____ conclusion.

   a) negative   b) affirmative   c) particular   d) universal

4. The converse of A proposition is _____ proposition.

   a) E   b) O   c) I   d) A

5. The contrapositive of I proposition is _____ proposition.

   a) A   b) O   c) E   d) None of these

6. _____ is the obverse of E proposition.

   a) All S is non-P.   b) All S is P.

   c) No S is non-P   d) Some S is not P.

7. A and I and E and O propositions are _____.

   a) subalterns   b) contradictories

c) contraries   d) sub-contraries

8. In the traditional square of opposition _____ are sub-contraries.

   a)   I and O   b) A and O   c) A and E   d) A and I

9. A valid syllogism must not have two _____premises.

   a) universal   b) particular   c) affirmative   d) negative

10. The fallacy of drawing an affirmative conclusion from a negative premise is the violation of a rule of _____.

   a) quantity   b) quality   c) terms   d) opposition

11. In _____opposition, A and E cannot both be true, but both can be false together.

   a) contrary   b) contradictory   c) sub-contrary   d) none of these

12. In contradictory opposition, if A is true O is _____.

   a) true   b) false   c) invalid   d) undetermined

13. The conclusion of 'All P is M. No M is S.' is an _____proposition.

   a) A   b) E   c) I   d) O

14. The conclusion of 'All Greeks are humans. All Athenians are Greeks.' is, 'Therefore, _____'.
    a) Some Athenians are Greeks.   b) No Athenians are Greeks.
    c) All Athenians are humans.   d) Some Athenians are Greeks.

15. The conclusion of 'Some employees are voters. No child is a voter.' is, 'Therefore, _____'.

   a) some employees are children.   b) some children are not employees.
   c) no child is employee.   d) none of these

16. 'No senior citizens are students' is the _____ of 'No students are senior citizens'.

   a) obverse   b) contradictory   c) contrapositive   d) converse

(16 x ½ = 8)

SECTION B

Fill in the blanks. Each question carries a weightage of **one**.

17. 'Orchids are not fragrant' is reduced into an _____ proposition.

18. The standard form proposition of 'Every scientist is intelligent' is _____.

19. In the square of opposition A and E propositions are _____.

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20. 'All non-mortals are non-men' is the contrapositive of _____.

21. No mathematicians are musicians.

   All mathematicians are scientists.

   Therefore, no scientists are musicians.

   The fallacy in this syllogism is _____.

22. If one of the premises is negative the syllogism must have _____ conclusion.

23. In sub-altern opposition, if A is true I is _____.

24. If all proteins are organic compounds and all enzymes are proteins, all enzymes are _____.

25. A syllogism having two negative premises is _____.

(9 x 1 = 9)

SECTION C

Construct and derive as directed. Each question carries a weightage of **two**.

26. Construct an A proposition and derive its contradictory.

27. Construct an I proposition and derive its obverse.

28. Construct a categorical syllogism which has the fallacy of undistributed middle.

29. Construct a valid categorical syllogism with negative conclusion.

30. Construct an O proposition and derive its obverse and contrapositive.

(5 x 2 = 10)