



UNIVERSITY OF PERADENIYA

CENTRE FOR DISTANCE AND CONTINUING EDUCATION

ශාස්ත්‍රවේදී උපාධි (බාහිර - නව නිර්දේශය) පරීක්ෂණය 100 මට්ටම - 2020

கலைத்தேர்வுப் பரீட்சை (வெளிவாரி-புதிய பாடத்திட்டம்) 100 வது தேர்ச்சி மட்டம்

2020

(PHYE 102-LOGIC AND LOGICAL THEORY)

කාලය පැය (03) තුනයි.
மூன்று(03) மணித்தியாலங்கள்
Time three (03) Hours.

නොපැහැදිලි අත් අකුරුවලට ලකුණු කපනු ලැබේ.
எழுத்து தெளிவில்லாதவிடத்து புள்ளிகள் குறைக்கப்படும்.
Marks will be deducted for illegible hand writing.

ප්‍රශ්න 05 ට පමණක් පිළිතුරු සපයන්න.
05 வினாக்களுக்கு மட்டும் விடையளிக்க.
Answer 05 questions only.

මෙම ප්‍රශ්න පත්‍රයේ අඩංගු ප්‍රශ්න සංඛ්‍යාව 10 කි.
இந்த வினாப்பத்திரத்தில் 10 வினாக்கள் உள்ளன.
There are 10 questions in the question paper.

01) a) Explain briefly the following logical concepts in Aristotelian Logic giving examples for each.

- (i) Terms (ii) Propositions
(iii) The law of identity (iv) Connotation and Denotation

(2 1/2x4=10 Marks)

b) Discuss the basic principles of critical thinking.

(10 Marks)

02) a) Illustrate the Traditional Square of Opposition of Propositions and Modern Opposition of Propositions.

(02x2=04 Marks)

b) Explain the following opposition of propositions by giving examples.

- (i) Contrary (ii) Sub contrary
(iii) Sub-alternate (iv) Contradictory

(04x4=16 Marks)

P.T.O.

03) a) Define clearly what conversion is and state the rules to be followed for a valid conversion.

(08 Marks)

b) Determine whether the following arguments are valid or invalid. When the argument is invalid state the rule/rules of eduction and name the resulting fallacy.

- (i) All boys are clever. Therefore, all clever ones are boys.
- (ii) No man is a god. Therefore, no god is a not man.
- (iii) Some girls are not brave. Therefore, some brave ones are girls.
- (iv) Dogs are not reptiles. Therefore, some not dogs are reptiles.

(03x4=12 Marks)

04) a) Determine whether the following arguments are valid or invalid syllogisms. When the argument is invalid state the rule/rules that have been violated and name the resulting fallacy/fallacies.

- (i) Some students are players. Some players are university students. Therefore, some university students are cricket players.
- (ii) All films are not comedies. Some comedies are tragedies. Therefore, some tragedies are films.
- (iii) Eucleed was a mathematician. Because of all Greeks were mathematicians and Eucleed was a Greek.
- (iv) No Carpenter is a fisherman. All carpenters are artists. Therefore, no artist is a fisherman.

(04x4=16 Marks)

b) Explain in terms of the main rules of the syllogism, why it is not possible to draw a valid inference from particular major premise and negative minor premise.

(04 Marks)

P.T.O

05) a) Define and give examples for the followings.

- (i) Pure hypothetical syllogism.
- (ii) Mixed hypothetical syllogism.
- (iii) Complex constructive Dilemma.
- (iv) Simple destructive Dilemma

(04x4=16 Marks)

b) Explain any four valid moods of the first figure, giving symbolic examples.

(04 Marks)

06) a) Distinguish between Swarthanumana and Pararthanumana giving examples.

(10 Marks)

b) Compare and contrast Nyaya five step syllogism and Aristotelian syllogism

(10 Marks)

07) a) "Jain syadvada (Saptabhangis Naya) can be reduced to Catuskoti" Do you agree with this statement?

(10 Marks)

b) Write brief notes on followings:

- (i) Hetvabhasa
- (ii) Anupalabddhi

(05x2=10 Marks)

08) a) Symbolize the following sentences in terms of the predicate calculus, giving your schemes of abbreviation.

- (i) If there is a university in Kandy then all residents in Kandy are graduated.
- (ii) Some Lessons are not easy.

P.T.O.

- (iii) Either all men are mortal or some men are not mortal.
- (iv) If only no politician is genuine citizens are not genuine.

(2 $\frac{1}{2}$ ×4=10 Marks)

b) Explain following rules of inference with examples.

- (i) Universal Generalization
- (ii) Existential Generalization

(05×2=10 Marks)

(09) a) Distinguish formal fallacies from informal fallacies.

(04 Marks)

b) Explain briefly the following informal fallacies giving examples for each.

- (i) Fallacy of Composition
- (ii) Fallacy of a equivocation
- (iii) Fallacy of false course
- (iv) Fallacy of appeal to ignorance

(04×4=16 Marks)

(10) Write short notes on any **four** (04) of followings:

- (i) Dilemma
- (ii) Enthymemes
- (iii) Stylistic Variants
- (iv) Necessary and Sufficient conditions
- (v) Mutually exclusive and together exhaustive
- (vi) Deductive and Inductive inference

(05×4=20 Marks)