

UNIVERSITI SAINS MALAYSIA

Sedaya International College

First Semester Examination
Academic Session 2002/2003
September 2002

**External Degree Programme
Bachelor of Pharmacy (Hons.)**

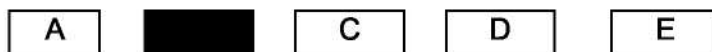
HPW 102 – Critical Thinking

Time: 2 hours

Make sure the question paper contains **FOURTY-FIVE [45]** questions in **FIFTEEN [15]** printed pages before you start the examination.

Instructions to student:

1. Answer **ALL** questions in Section A and Section B.
2. For questions in Section A, students **MUST**;
 - I. Answer in the objective answer sheet given.
 - II. Use only **2B PENCIL**.
 - III. Blacken the answer column correctly. Look at the example below:-



3. Students are **STRICTLY FORBIDDEN** to take this question paper out of the examination hall.

Section A – [50%]

To answer questions 1 to 15, please refer to the following propositions:

- I. All asteroids are composed of nickel, iron and silicate.
- II. Only matter composed of nickel, iron and silicate are asteroids.
- III. Some asteroids are composed of nickel, iron and silicate.
- IV. Some matter which are composed of nickel, iron and silicate are asteroids.
- V. Some asteroids are not composed of nickel, iron and silicate.
- VI. No asteroids is composed of nickel, iron and silicate.

1. What other proposition (s) MUST BE TRUE if proposition I is TRUE?

- A. II and III.
- B. II, III and IV.
- C. Only III.
- D. V and VI.
- E. No other proposition is necessarily true.

2. Which proposition (s) is FALSE if proposition I is TRUE?

- A. Only V.
- B. VI only.
- C. V and VI.
- D. II and III.
- E. No proposition is necessarily false.

3. Which proposition (s) is TRUE if proposition VI is FALSE?

- A. Only V.
- B. II, III and V.
- C. II and III.
- D. I and V.
- E. No proposition is necessarily true.

4. Which other proposition (s) is FALSE if proposition VI is FALSE?
- A. I, II, III and IV.
 - B. III and IV.
 - C. Only V.
 - D. I and II.
 - E. No proposition is necessarily false.
5. Which proposition (s) is TRUE if proposition II is TRUE?
- A. Only I.
 - B. I, III and IV.
 - C. III and IV.
 - D. V and VI.
 - E. No proposition is necessarily true.
6. Which proposition (s) is FALSE if proposition II is FALSE?
- A. V and VI.
 - B. V.
 - C. VI.
 - D. I, III and IV.
 - E. No proposition is necessarily false.
7. Which proposition (s) is TRUE if proposition IV is FALSE?
- A. V and VI.
 - B. Only V.
 - C. Only VI.
 - D. I, II and III.
 - E. No proposition is necessarily true.

8. Which other proposition (s) is FALSE if proposition IV is FALSE?
- A. I, II and III.
 - B. I and II.
 - C. Only III.
 - D. V and VI.
 - E. No proposition is necessarily false.
9. Which proposition (s) is CONTRARY to I?
- A. V and VI.
 - B. Only VI.
 - C. Only V.
 - D. Only II.
 - E. No proposition is contrary to I.
10. Which proposition (s) is a CONTRADICTION of I?
- A. V and VI.
 - B. Only V.
 - C. Only VI.
 - D. Only II.
 - E. Only III.
11. Which proposition has the SAME MEANING as I?
- A. Only II.
 - B. II, III and IV.
 - C. III and IV.
 - D. Only VI.
 - E. V and VI.

12. Which proposition is a SUBCONTRARY of proposition III?
- A. Only V.
 - B. V and VI.
 - C. IV, V and VI.
 - D. Only VI.
 - E. No proposition is subcontrary to III.
13. Which proposition is a SUBCONTRARY to proposition V?
- A. III and IV.
 - B. Only III.
 - C. Only IV.
 - D. I and II.
 - E. No proposition is subcontrary to V.
14. Which proposition is SUBCONTRARY to proposition IV?
- A. Only V.
 - B. V and VI.
 - C. I and II.
 - D. Only III.
 - E. No proposition is subcontrary to IV.
15. Which proposition has the SAME MEANING as V?
- A. Only VI.
 - B. III and IV.
 - C. Only IV.
 - D. Only III.
 - E. No proposition has the same meaning as V.

To answer questions 16 - 30, please refer to the following statements:

- I. All arguments in the *Tractatus Logico-Philosophicus* equate meaningfulness with the verifiability of assertions.
 - II. No arguments in the *Tractatus Logico-Philosophicus* equate meaningfulness with the verifiability of assertions.
 - III. Some arguments in the *Tractatus Logico-Philosophicus* equate meaningfulness with the verifiability of assertions.
 - IV. Some arguments in the *Tractatus Logico-Philosophicus* do not equate meaningfulness with the verifiability of assertions.
 - V. Some claims equating meaningfulness with the verifiability of assertions are expressed in arguments in the *Tractatus Logico-Philosophicus*.
16. Which other statement (s) is TRUE if I is TRUE?
- A. III and V.
 - B. Only III.
 - C. Only V.
 - D. II and IV.
 - E. No other statement is necessarily true.
17. Which statement (s) is NECESSARILY FALSE if I is TRUE?
- A. II and IV.
 - B. Only IV.
 - C. Only II.
 - D. Only III.
 - E. No statement is necessarily false.

18. Which statement (s) is NECESSARILY TRUE if II is TRUE?
- A. Only IV.
 - B. Only V.
 - C. IV and V.
 - D. I, III and V.
 - E. No statement is necessarily true.
19. Which statement (s) MUST BE FALSE if II is FALSE?
- A. I, III and V.
 - B. III and V.
 - C. Only I.
 - D. Only IV.
 - E. No statement is necessarily false.
20. Which statement (s) MUST BE TRUE if IV is FALSE?
- A. I, III and V.
 - B. Only I.
 - C. III and IV.
 - D. Only II.
 - E. No statement is necessarily true.
21. Which statement (s) MUST BE FALSE if IV is FALSE?
- A. Only II.
 - B. II and IV.
 - C. Only V.
 - D. I, III and V.
 - E. No statement is necessarily false.

22. Which statement (s) is NECESSARILY TRUE if V is FALSE?
- A. II and IV.
 - B. Only II.
 - C. Only IV.
 - D. I and III.
 - E. No statement is necessarily true.
23. Which statement (s) MUST BE FALSE if V is FALSE?
- A. I and III.
 - B. II and IV.
 - C. Only II.
 - D. Only IV.
 - E. No statement is necessarily false.
24. Which statement is CONTRARY to I?
- A. Only II.
 - B. II and IV.
 - C. Only IV.
 - D. Only III.
 - E. No statement is contrary to I.
25. Which statement is a CONTRADICTION of I?
- A. Only IV.
 - B. Only II.
 - C. II and IV.
 - D. Only III.
 - E. No statement is a contradiction of I.

26. Which statement (s) is NECESSARILY TRUE if III is FALSE?
- A. II and IV.
 - B. Only II.
 - C. Only IV.
 - D. I and V.
 - E. No statement is necessarily true.
27. Which statement (s) is NECESSARILY FALSE if III is FALSE?
- A. I and IV.
 - B. Only I.
 - C. Only V.
 - D. Only II.
 - E. No statement is necessarily false.
28. Which statement is SUBCONTRARY to III?
- A. Only IV.
 - B. II and IV.
 - C. Only II.
 - D. Only I.
 - E. No statement is a subcontrary to III.
29. Which statement is SUBCONTRARY to IV?
- A. III and V.
 - B. Only IV.
 - C. Only III.
 - D. I, III and V.
 - E. No statement is a subcontrary of IV.

30. Which statement is SUBCONTRARY to I?

- A. Only IV.
- B. II and IV.
- C. Only II.
- D. Only V.
- E. No statement is subcontrary to I.

For Questions 31 - 35, please refer to the following statements:

- I. Only those who smoke cigarettes will contract lung cancer.
- II. Some people who contract lung cancer smoke cigarettes.
- III. Some people who smoke cigarettes contract lung cancer.
- IV. Some people who smoke cigarettes are not contracting lung cancer.
- V. No one who smokes cigarettes is contracting lung cancer.
- VI. No one who smokes cigarettes is not contracting lung cancer.

31. Which statement MUST BE TRUE if statement I is a TRUE statement?

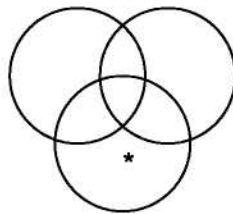
- A. II and III.
- B. II, III and VI.
- C. Only VI.
- D. IV and V.
- E. No statement that must be true.

32. Which statement MUST NOT BE TRUE if statement I is a TRUE statement?

- A. Only IV.
- B. IV and V.
- C. III, IV and V.
- D. Only III.
- E. No statement that must not be true.

33. Which statement **MUST BE TRUE** if statement IV is **NOT TRUE**?
- A. II and III.
 - B. II, III and VI.
 - C. Only VI.
 - D. IV and V.
 - E. No statement that must be true.
34. Which statement **MUST NOT BE TRUE** if statement IV is **NOT TRUE**?
- A. III and IV.
 - B. Only V.
 - C. Only III.
 - D. II, III and IV.
 - E. No statement that must not be true.
35. Which statement is in **CONTRADICTION** with statement I?
- A. Only V.
 - B. Only IV.
 - C. IV and V.
 - D. II and III.
 - E. No statement which is in contradiction with statement I.

36. Scientific theories



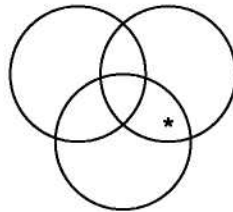
Theories which are empirically falsifiable

Karl Marx's social theory

(*) The above Venn diagram represents the following syllogistic argument:

- A. Karl Marx's social theory is not empirically falsifiable because all scientific theories are empirically falsifiable.
- B. Karl Marx's social theory is a scientific theory because it is empirically falsifiable.
- C. Karl Marx's social theory is a scientific theory because it is not empirically falsifiable.
- D. Karl Marx's social theory is a scientific theory because all empirically falsifiable theories are scientific.
- E. Karl Marx's social theory is not a scientific theory because it is not empirically falsifiable.

37. Communists



Liberals

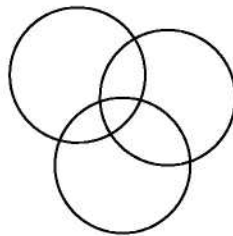
Rachmaninoff and Tchaikovsky

(*) The above Venn diagram represents the following syllogistic argument:

- A. Rachmaninoff and Tchaikovsky are not liberals because they are communists.
- B. Rachmaninoff and Tchaikovsky are not communists because they are liberals.

- C. Rachmaninoff and Tchaikovsky are communists because they are not liberals.
- D. Rachmaninoff and Tchaikovsky are liberals because they are communists.
- E. Rachmaninoff and Tchaikovsky are liberals because they are not communists.

38. Astrophysicists

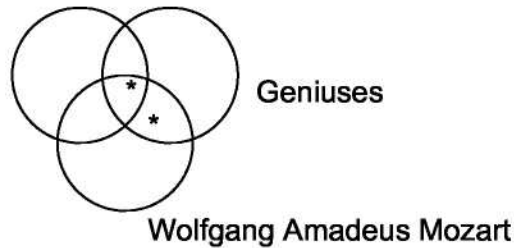


good
mathematicians

Professor Stephen Hawking

- (*) The above Venn diagram represents the following syllogistic argument:
- A. Professor Stephen Hawking is a good mathematicians because he is also an astrophysicist.
 - B. Professor Stephen Hawking is a good astrophysicist because all good mathematicians are astrophysicists.
 - C. Professor Stephen Hawking is a good astrophysicist because only astrophysicists are good mathematicians.
 - D. Professor Stephen Hawking is a good astrophysicist because only good mathematicians are astrophysicists.
 - E. Professor Stephen Hawking is not a good astrophysicist because he is not a good mathematician.

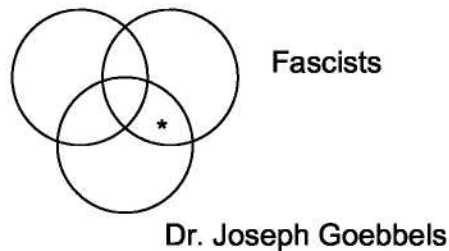
39. Child prodigies



(*) The above Venn diagram represents the following syllogistic argument:

- A. Wolfgang Amadeus Mozart is a genius because he is a child prodigy.
- B. Wolfgang Amadeus Mozart is not a genius because he is a child prodigy.
- C. Wolfgang Amadeus Mozart is not a child prodigy because he is not a genius.
- D. Wolfgang Amadeus Mozart is not a child prodigy is all child prodigies are not geniuses.
- E. Wolfgang Amadeus Mozart is a child prodigy because he is a genius.

40. Liberals



(*) The above Venn diagram represents the following syllogistic argument:

- A. Dr. Joseph Goebbels is a fascist because he is not a liberal.
- B. Dr. Joseph Goebbels is a fascist because he is also a liberal.
- C. Dr. Joseph Goebbels is a liberal because he is a fascist.
- D. Dr. Joseph Goebbels is not a liberal because he is a fascist.
- E. Dr. Joseph Goebbels is not a liberal because only fascists are liberals.

SECTION B - [50%]

41. There must be intelligent life on other planets. No one has proven otherwise.
42. How do I know that garlic tea is a cure for the common cold? Well, last week I drank a cup of garlic tea and the next morning my sniffles and other symptoms of a cold were gone.
43. I hired three Vietnamese guys to run my shop, and all three were lazy and shiftless. I guess Vietnamese are lazy and shiftless.
44. You are either a feminist or you are a complete idiot. (Quote from Susan Powter).
45. My hairdresser told me that extraterrestrials built the lost city of Atlantis. So, it is reasonable to believe that extraterrestrials did build the lost city of Atlantis.

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