

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MSc (BIOMEDICAL INFORMATICS)
END OF SEMESTER I EXAMINATION – FEBRUARY 2016

Date : -11th February 2016

Time :- 1.00 p.m. – 2.00 p.m.

Answer all questions.

Answer each part in a separate book.

Question 1

Part A

1.1.

1.1.1 List five (05) basic concepts in Object Oriented Programming. (40 marks)

1.1.2 Write a pseudo-code to do the following: input height and weight; calculate the Body Mass Index (BMI); and print the BMI. (60 marks)

Part B

1.2.

1.2.1 List the components of the communication process. (20 marks)

1.2.2 List five (05) network topologies. (20 marks)

1.2.3 Describe the advantages and disadvantages of two (02) network topologies. (60 marks)

Part C

1.3.

1.3.1 Describe important distinctions between user requirements and system requirements in the requirements engineering process. (40 marks)

1.3.2 Giving reasons for your answer based on the type of system being developed, suggest the most appropriate generic software process model that might be used as a basis for managing the development of a system that automatically controls the speed of a motor vehicle (cruise control). (60 marks)

Master
2**Question 2****Part D**

2.1.

- 2.1.1 List four (04) primitive data types used in Java. (20 marks)
- 2.1.2 Briefly describe one primitive data type used in Java mentioned in 2.1.1. above with a suitable example. (30 marks)
- 2.1.3 Draw a flowchart to input two (02) numbers and print the largest value. (50 marks)

Part E

2.2.

- 2.2.1 List the seven (07) layers of the Open Systems Interconnection (OSI) model. (35 marks)
- 2.2.2 List the layers of the TCP/IP model. (20 marks)
- 2.2.3 Briefly describe the functions of two (02) layers of the TCP/IP model. (45 marks)

Part F

2.3.

- 2.3.1 Discuss the differences between functional and non-functional requirements. (50 marks)
- 2.3.2 State the most important difference between generic software product development and custom software development. (10 marks)
- 2.3.3 Describe the implications of your answer to 2.3.2 above in practice for users of generic software products? (40 marks)