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POSTGRADUATE INSTITUTE OF MEDICINE

UNIVERSITY OF COLOMBO

MSc (BIOMEDICAL INFORMATICS) END OF SEMESTER II

EXAMINATION – SEPTEMBER 2019

Date : 06th September 2019

Time : 1.00 p.m – 2.30 p.m

SEQ PAPER

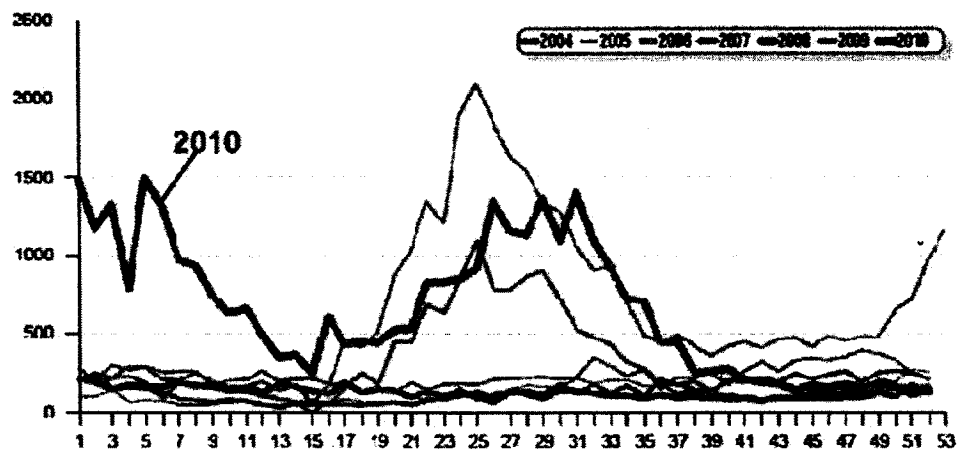
Answer all questions.

Answer each part in a separate book.

Question 1

Module 5 – Basic Epidemiology and Statistics

1.1. Following chart illustrates the distribution of suspected Dengue Fever in Sri Lanka from 2004 to 2010.



- a. What are the labels for x and y axes? (10 marks)
- b. Briefly describe the trend in relation to year 2010. (20 marks)
- c. Suggest possible reasons for the trend described in above 1.2. (20 marks)

1.2. Describe four (04) properties of normal distribution. (20 marks)

1.3. Mean height of a large population of individuals is 1.48m and the standard deviation is 0.31m.

- a. What height is exceeded by 2.5% of the population? (20 marks)
- b. What is the main assumption you make in this scenario? (10 marks)

Question 2**Module 8 - Public Health Informatics**

2. Health related information may emerge from sources both within and outside of the ministry of health. Many isolated health information systems are currently in operation to manage individual programmes or information flows. With the expansion of the healthcare system and with the increasing complexity, such isolated health information systems may not facilitate effective decision making.
- 2.1. List five sources of health information. (15 marks)
- 2.2. Discuss how data exchange and standardisation support interoperability of health information systems. (35 Marks)
- 2.3. Write short notes on the following in relation to public health information systems
- a. Summative evaluation (25 Marks)
 - b. Formative evaluation (25 Marks)

Question 3**Module 9 - Bioinformatics**

A tertiary care hospital plans to launch Next Generation Sequencing (NGS) based testing for breast and bowel cancer. You are requested to liaise with the clinicians and pathologist and provide expertise on informatics related issues.

- 3.1. Discuss the challenges anticipated in handling the data that is generated. (40 marks)
- 3.2. Describe with examples the different bioinformatics tools/databases available to analyse the genomic data of patients undergoing these tests and how you would use them to assist their management. (60 marks)