MANIPAL UNIVERSITY

FOURTH SEMESTER B.Sc. H.I.A / SIXTH SEMESTER B.A.S.L.P. & B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2017

SUBJECT: EPIDEMIOLOGY & BIOSTATISTICS (BHI 204)/ BASIC STATISTICS (B 6.3) & BIOSTATISTICS (MIT 312)

Wednesday, August 16, 2017

Time: 14:00-17:00 Hrs.   Max. Marks: 80

✍ **Answer ALL the questions.**

1.   Explain nominal and ordinal variables with examples.

(4 marks)

2.   **Classify the following into the four different scales of measurement:**

2A. Pain score (mild/moderate/sever)

2B. IQ

2C. Blood group

2D. Height

(4 marks)

3.   Fifty persons were examined for haemoglobin level in their blood (mg per dl). Construct a histogram for the data.

Hb %	10 – 11	11 – 12	12 – 13	13 – 14	14 – 15	15 – 16
No. of persons	8	11	14	9	6	2

(5 marks)

4.   **State whether true or false:**

4A. Normal distribution curve is negatively skewed

4B. Mode always exists and is unique

4C. Range is the difference between the maximum and minimum value

4D. (Standard deviation)^2 = variance

4E. Median is a measure of dispersion

(5 marks)

5.   **Define the following:**

5A. Infant mortality rate

5B. Age specific fertility rate

(2 marks × 2 = 4 marks)

6. The following data provides hemoglobin level of 15 patients who visited a clinic. Calculate 1st quartile and 60th percentile.

   12   15   13   19   17   11   15   14   12   16   19   15   9   13   10

   (6 marks)

7. Obtain variance for the data on percent of fluid recovered among antigen challenged sites following bronchoalveolar lavage (BAL) in 10 asthmatic patients

   64   25   70   35   43   49   62   56   43   63

   (6 marks)

8. Define coefficient of variation. Mean and standard deviation of height of group of girls is 64 and 2 inches respectively. The mean and standard deviation of their Hb level is 12 and 1 gm% respectively. Is height more variable than Hb level?

   (6 marks)

9. Define positive and negative correlation using scatter diagrams.

   (4 marks)

10. Suppose that total carbohydrate intake in 12 to 14 year old boys is normally distributed with mean 124 g/Kcal and standard deviation 20 g/Kcal. What percent of boys in this age range have carbohydrate intake?

10A. Above 124 g/Kcal

10B. Below 144 g/Kcal

10C. Between 84 and 144 g/Kcal

   (2 marks × 3 = 6 marks)

11. **Write short notes on :**

11A. Reliability

11B. Morbidity and its measures

11C. Simple random sampling

11D. Research process

11E. Registration of vital events

11F. Cross sectional studies

   (5 marks × 6 = 30 marks)

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SIXTH SEMESTER B.A.S.L.P. DEGREE EXAMINATION – AUGUST 2017

SUBJECT: NOISE MEASUREMENTS AND HEARING CONSERVATION (B 6.2)

Saturday, August 19, 2017

Time: 14:00 – 17:00 Hrs.   Max. Marks: 80

✍ **Answer the following questions:**

1.   With relevant examples explain different types and sources of noise.

(12 marks)

OR

2A.   Differentiate between PTS and TTS

2B.   Define NC and SNR

(6+6 = 12 marks)

3.   Discuss the importance of pure tone audiometry, baseline and periodic monitoring in NIHL.

(12 marks)

OR

4A.   How do you calculate amount of presbycusis contributing to NIHL?

4B.   Role of OAE and automatic audiometry in evaluation of individuals with NIHL.

(6+6 = 12 marks)

5.   What is Environmental Impact Assessment? Discuss basic steps in environmental impact assessment.

(12 marks)

OR

6A.   Draw schematic diagram of SLM and explain.

6B.   What are the factors that affect noise levels in airport?

(6+6 = 12 marks)

7A.   Explain goals of HCP.

7B.   Explain the need for HCP.

(6+6 = 12 marks)

OR

8.   What are the different types of EPDs? Discuss their properties.

(12 marks)

9.   Define DRC. Explain any two DRC given in the literature.

(12 marks)

OR

10A. Factors considered in claim evaluation

10B. Consumer protection act.

(6+6 = 12 marks)

11.   **Write short notes on:**

11A. Articulation Index

11B. NRR

11C. DPOAE

11D. Bekesy audiometry

11E. Types of vibrations

11F. Noise dosemeter

11G. Different types of records to be maintained in Hearing Conservation

11H. Active ear plugs

11I. Environmental act

11J. AAOO

(2 marks × 10 = 20 marks)