Reg. No.									

MANIPAL UNIVERSITY

THIRD YEAR BASLP/B.Sc. M.L.T./B.Sc. C.V.T./B.Sc. M.R.T
DEGREE EXAMINATION – DECEMBER 2014

SUBJECT: BASIC STATISTICS & SCIENTIFIC ENQUIRY IN AUDIOLOGY AND
SPEECH LANGUAGE PATHOLOGY (NR)/BIOSTATISTICS (NR)/BIOSTATISTICS AND
RESEARCH METHODOLOGY (2011 SCHEME)/(OLD REGULATION)

Wednesday, December 17, 2014

Time: 10:00-13:00 Hrs.

Max. Marks: 80

1. Describe the steps involved in a research process.

(5 marks)

2. What are the characteristics of a good hypothesis?

(5 marks)

3. List out the differences between discrete and continuous variables with examples.

(5 marks)

4. Classify the following into different scales of measurements (Nominal, Ordinal, Interval and Ratio)
   a) Name   b) Age   c) Intelligence Quotient (IQ)
   d) Marital status   e) Pain score

(5 marks)

5. Define and distinguish probability and non-probability sampling.

(5 marks)

6A. The following table shows tuberculin reaction measured in 206 persons who were never vaccinated. Present the data graphically by a histogram.

Reaction in mm	Number of persons
8 – 10	24
10 – 12	52
12 – 14	42
14 – 16	48
16 – 18	12
18 – 20	08
20 – 22	14
22 – 24	06

6B. The data gives the number of hours 45 hospital patients slept following the administration of a certain anesthetic. Construct frequency table taking class intervals 0 – 4, 4 – 8, 8 – 12, etc.

10	4	12	1	13	11	3	8	1
11	8	3	7	7	1	17	10	4
8	5	7	7	3	10	12	4	8
2	3	4	7	3	5	5	8	7
5	5	8	3	4	13	1	7	17

(5+5 = 10 marks)

7A. Calculate median and standard deviation of the following data:
Hb level (in gm%):   15   12   11   13   10   13   14   12   13   17

7B. Define coefficient of variation. Mean and standard deviation of pulse rate for a group of individuals is 76 and 3 beats per minute respectively. The mean and standard deviation of height is 64 and 2 inches respectively. Which of the two characteristics has lesser variability?

(5+5 = 10 marks)

8. A study on fasting blood glucose levels of patients reported a mean glucose level of 148mg/dl and a standard deviation of 11 mg/dl. Assuming normal distribution, what is the probability that any given individual will have blood glucose level,

8A. Between 126 and 159 mg/dl

8B. Less than 181 mg/dl

(5 marks)

9. With the help of scatter diagram, explain correlation.

(5 marks)

10. Define health information system. List its uses.

(5 marks)

11A. Explain the terms rate and ratio with examples.

11B. During the year 2010, there were 550 deaths in a town. The estimated mid-year population for 2010 for the town was 27500. Calculate the crude death rate.

(5+5 = 10 marks)

12. What do you mean by cross sectional studies? What are its uses? List the aims of epidemiology.

(10 marks)

✎   Answer ALL questions.

1A.   Define exfoliative cytology. Discuss about exfoliative and abrasive cytological sampling techniques.

(3+6+6 = 15 marks)

1B.   Define karyotype. Explain about types of specimen, procedure and G-banding in karyotyping.

(3+4+4+4 = 15 marks)

2.   **Write detailed notes on:**

2A.   Flowcytometry

2B.   FNAC

2C.   PAP staining

2D.   Cytology of cancer cell

2E.   Preservation of fluid specimen

2F.   Amenorrhea

2G.   Acetic Orcein stain

(5 marks × 7 = 35 marks)

3.   **Write short notes on:**

3A.   Coating fixatives

3B.   Adhesives

3C.   VCE smear

3D.   Atrophy

3E.   Destaining

(3 marks × 5 = 15 marks)

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✍ Answer the following questions:

1. Discuss the methods of bacterial gene transfer. Add a note on transposons.

(12+3 = 15 marks)

2. Discuss the etiopathogenesis and serodiagnosis of syphilis.

(5+10 = 15 marks)

3. Write briefly on:

3A. Etiopathogenesis of tetanus

3B. Laboratory diagnosis of enteric fever

3C. Sterillisation by filtration and radiation

3D. Virulence factors of Streptococcus pyogenes

3E. Investigations of nosocomial infections

(7 marks × 5 = 35 marks)

4. Write short notes on:

4A. DPT vaccine

4B. Extrapulmonary tuberculosis

4C. Bacterial growth curve

4D. Serum sickness

4E. Pathogenesis of bacillary dysentery

(3 marks × 5 = 15 marks)

MANIPAL UNIVERSITY

THIRD YEAR B. Sc. M.L.T. DEGREE EXAMINATION – DECEMBER 2014

SUBJECT: HISTOPATHOLOGICAL TECHNIQUES
(NEW REGULATION)

Saturday, December 20, 2014

Time: 10:00-13:00 Hrs.   Max. Marks: 80

✍ **Answer ALL questions.**

1A. Classify amyloids. Enumerate on principle, procedure and reagent preparation for amyloid staining. Add a note on Aß amyloid.

(4+7+4 = 15 marks)

1B. Discuss on microtome knife profile, parts of microtome knife and sharpening of microtome knives.

(5+5+5 = 15 marks)

2. **Write detailed notes on:**

2A. Impregnation and embedding

2B. PAS staining

2C. Aqueous mounting medias

2D. Wade- Fite stain for Mycobacterium leprae

2E. Paraffin section cutting

2F. Automatic tissue processor

2G. Rapid Hand E for frozen section

(5 marks × 7 = 35 marks)

3. **Write short notes on:**

3A. Zenker's fluid

3B. Post chroming

3C. Freeze drying

3D. Ehrlich's haematoxylin

3E. Gooding and Stewart's fluid

(3 marks × 5 = 15 marks)

✍   **Answer ALL questions. Draw diagrams if necessary.**

1.   Classify herpes viruses. Explain the pathogenicity and lab diagnosis of varicella zoster.

(15 marks)

2.   Classify nematodes. Explain the pathogenesis and lab diagnosis of filariasis.

(15 marks)

3.   **Write detailed notes on the following:**

3A. Plasmodium vivax

3B. Cultivation of viruses

3C. Fungal stains

3D. Toxoplasma gondii

3E. Aspergillus

3F. Candidiasis

3G. Entamoeba histolytica

(5 marks × 7 = 35 marks)

4.   **Write short notes on the following:**

4A   Enterobius vermicularis

4B. Negri bodies

4C. Trichomonas vaginalis

4D. Viral vaccines

4E. NIH swab

(3 marks × 5 = 15 marks)