

Question Paper

Exam Date & Time: 16-Mar-2021 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER M.O.T./ M.Sc. M.L.T./ M. Opt./ M.Sc. R.T./ M.Sc. ECOCARDIOGRAPHY/M.Sc. CC&IT /M.Sc. M.I.T./M.P.T./M.Sc. E.S.S./ M.Sc. N.M.T./ M.Sc. M.R.P./ M.Sc. RRT&DT/M.Sc. PFT/M.Sc. AUDIOLOGY/M.Sc. (S.L.P.)/ M.Sc. H.I.M./ M.Sc. CLINICAL PSYCHOLOGY DEGREE EXAMINATION - MARCH 2021
SUBJECT: RES 601 - BIOSTATISTICS & RESEARCH METHODOLOGY/RESEARCH METHODOLOGY & BIOSTATISTICS/ADVANCED BIOSTATISTICS & RESEARCH METHODOLOGY/RESEARCH METHODS, EPIDEMIOLOGY & STATISTICS/BIOSTATISTICS
(2018 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1A) List the uses of statistics in health science research. (3)
- 1B) Systolic Blood Pressure values of 12 subjects are given below. Compute the quartiles and the inter quartile range. (7)
SBP(mmHg): 162, 138, 146, 126, 134, 142, 150, 144, 130, 170, 138, 154.
- 2A) Describe the characteristics of various scales of measurement with one example each. (5)
- 2B) Mean and standard deviation of systolic Blood Pressure of a group of adults is 140 mmHg and 10 mmHg and that of weight is 70 Kg and 5 Kg respectively. Find out which characteristic is more consistent. (5)
- 3A) Give the expression for standard error of the following: (4)
i) Sample proportion.
ii) Difference in sample mean.
- 3B) The height of adult males in a population are normally distributed with a mean of 170 cm and a standard deviation of 8 cm. In a random sample of 64 adults from the population: (6)
i) What is the probability that the mean height is less than 169 cms?
ii) What is the probability that the mean height is between 169 and 172 cms?
- 4A) Explain skewness and kurtosis. (5)
- 4B) A researcher is interested in obtaining an estimate of the average level of some enzyme in a certain human population. He takes a sample of 36 individuals, determines the level of the enzyme in each, and computes the sample mean, which is equal to 42. It is known that the variable of interest is approximately normally distributed with a variance of 64. Compute the 95% confidence interval for population mean ($Z=1.96$). (5)

5. Answer the following:

- 5A) Differentiate Type I Error and Type II Error. (2)
- 5B) Explain the situation with example, assumption and the hypothesis tested with two independent sample t-test. (6)
- 5C) Give the situation for the use of: (2)
i) Bland Altman plot.

ii) Kappa statistic.

6A) Explain the design of Randomized Controlled Trial with an example and flow diagram. (5)

6B) Following is the data collected for the validation of a new test. Compute the sensitivity, specificity, positive predictive value and negative predictive value of the new test. (5)

	Disease	
	Present	Absent
Test +ve	180	50
Test - ve	20	200

7A) Study the association between Cirrhosis of the liver and Alcoholism, applying chi-square test (Chi-Square critical value for 1 df and 5% level of significance=3.84) (5)

Alcoholic	Cirrhosis of the liver	
	Present	Absent
Yes	170	50
No	30	100
	200	150

7B) A health planning agency wishes to know for a certain geographical region, what proportion of adults aged 60-70 years are diabetic. Find the necessary minimum sample size to construct a 95% confidence interval for P with a margin of error not exceeding 0.1, assuming that prior studies suggest that proportion of diabetic is about 0.3. ($Z=1.96$) (5)

8A) What are non-sampling errors? How do we control them? (5)

8B) Explain stratified random sampling techniques with example. (5)

9A) Give the non-parametric analogue of t- test, Paired t- test, one-way ANOVA and repeated measures ANOVA. (5)

9B) Explain the use of scatter diagram with sketch. (5)

10A) List the advantages and limitations of case-control study. (5)

10B) Explain the materials and methods section of a research protocol. (5)

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Question Paper

Exam Date & Time: 26-Mar-2021 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER M.Sc. (SPEECH - LANGUAGE PATHOLOGY) DEGREE EXAMINATION - MARCH 2021
SUBJECT: MSL 607 - CLINICAL LINGUISTICS AND MULTILINGUAL ISSUES
(2018 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Outline the various mechanisms and processes involved in word recognition. (20)
- 2) How is lateralization and hemispheric asymmetry significant to the processing of normal and disordered language? (20)
- 3A) Discuss the role of Child Directed Speech in language acquisition. (10)
- 3B) What is the relationship between Language & Thought? Add a note on Sapir-Whorf Hypothesis. (10)
- 3C) Discuss how anaphors and deictic expressions are "triggers" for processing of discourse. (10)
- 3D) Trace the development of a new language from pre-pidgin to post-creole. (10)
- 4A) Critically evaluate the Deficiency hypothesis. (5)
- 4B) What is Interference and Transfer in the context of second language acquisition? (5)
- 4C) Describe the role of Speech Act theory in the analysis of discourse. (5)
- 4D) Discuss language variation in terms of Style and Register. (5)

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