

MANIPAL UNIVERSITY**MASTER OF PHYSIOTHERAPY (MPT) – PART I DEGREE EXAMINATION – JUNE 2016****SUBJECT: RESEARCH METHODOLOGY****(2013 Regulation)**

Thursday, June 02, 2016

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 100

1. What do you mean by variables? Explain different types of variables with examples.
(2+8 = 10 marks)
2. Distinguish between random sampling and non-random sampling. Briefly explain any four types of non-random sampling techniques.
(2+8 = 10 marks)
3. Explain kurtosis. Define standard normal random variable. How do you convert a normal random variable into standard normal variable? Mention any two applications of standard normal distribution in statistical inference.
(4+2+2+2 = 10 marks)

- 4A. A study was conducted to find the prevalence of goitre in above 30 years women in a rural village in southern India. A sample of 1200 women were selected from this village and observed that the prevalence of goitre was 12%. Compute 95% and 99% confidence intervals for population prevalence of goitre in that village. (Standard normal table value for 95% and 99% are 1.96 and 2.58 respectively).
- 4B. Calculate the sensitivity, specificity, positive predictive value and negative predictive value for the following data.

Liver scan result	Pathology result	
	Abnormal (+)	Normal (-)
Abnormal (+)	224	41
Normal (-)	33	365

(6+4 = 10 marks)

5. A sample of 200 women between 65 and 80 years old were classified into one of two groups based on whether the subject took Vitamin E supplements at the time of enrollment. Each woman was subsequently given a test to measure cognitive ability. Higher scores on this test indicate better cognition.
- 5A. Name the statistical test used for comparing the mean cognition test scores between the two groups of women.
- 5B. State the null and alternate hypothesis.
- 5C. Write the formula of test statistic for this test.
- 5D. What are the assumptions for this test?
- 5E. How do you take a decision on the acceptance or rejection of null hypothesis?

(1+2+3+2+2 = 10 marks)

6. With an example explain how do you perform Chi-square tests of association?
(10 marks)
- 7A. Write a short note on linear regression.
- 7B. Explain how do you determine the sample size for comparing proportions of two independent groups?
(5+5 = 10 marks)
- 8A. Write a short note on survival analysis.
- 8B. A cohort study was performed to find the association between obesity and development of diabetes. For this study, 2000 obese and 3500 non-obese were selected and followed for 10 years. The number of people that were diagnosed with diabetes in the obese and non-obese group was 250 and 200 respectively. Construct a two by two table. Compute the appropriate measure of strength of association and interpret it.
(5+5 = 10 marks)
9. What do you mean by blinding in clinical trials? Enumerate the advantages of blinding. Briefly explain different types of blinding.
(2+2+6 = 10 marks)
10. Enumerate the steps in a research protocol. Explain the importance of review of literature in a protocol.
(5+5 = 10 marks)



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MANIPAL UNIVERSITY

MASTER OF PHYSIOTHERAPY (MPT) – PART-I DEGREE EXAMINATION – MAY 2016

SUBJECT: THEORETICAL BASIS & PRINCIPLES OF PRACTICE IN PHYSIOTHERAPY
(2013 REGULATION)

Saturday, June 04, 2016

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 100

☞ **All questions are compulsory.**

1. Discuss on the universal precautions to be taken while treating a patient in intensive care unit.
(20 marks)
2. Explain the neurophysiology of balance.
(20 marks)
3. Write the principle of ethics in physiotherapy practice both in clinical and research aspect.
(20 marks)
4. Explain kinetics and kinematics of overhead shoulder abduction.
(20 marks)
5. **Write short notes on:**
 - 5A. Pulmonary function test differences between obstructive and restrictive patterns
 - 5B. Instrumentation of Electromyography
 - 5C. Rationale of testing joint end-feels
 - 5D. Rehabilitation of post-mastectomy patients

(5 marks × 4 = 20 marks)

