MANIPAL UNIVERSITY

FIRST YEAR MOT/M.Sc. (RRT & DT)/ M.Sc. RT/ M.A.S.L.P/M.Sc. MLT/M.Sc. MIT/ M.Sc. ECHOCARDIOGRAPHY/M. OPT DEGREE EXAMINATION – JUNE 2015

SUBJECT: ADVANCED BIOSTATISTICS & RESEARCH METHODOLOGY/ STATISTICS & RESEARCH METHODS/BIOSTATISTICS/EPIDEMIOLOGY & BIOSTATISTICS / RESEARCH METHODOLOGY & BIOSTATISTICS

Tuesday, June 02, 2015

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

✍ **Answer ALL the questions.**

1A. With the help of suitable examples discuss the quantitative and qualitative variables.

1B. Explain systematic random sampling with an example. What are the advantages and disadvantages of this method?

(5+5 = 10 marks)

2A. Discuss skewness and kurtosis.

2B. A sample of 50 liver cirrhosis subjects were selected and the mean serum potassium level was observed to be 5.4 mEq/L with standard deviation of 2.5 mEq/L. Find the 95% and 99% confidence intervals for mean serum potassium level among liver cirrhosis subjects. (The standard normal table values for 95% and 99% confidence levels are 1.96 and 2.58 respectively).

(5+5 = 10 marks)

3A. Enumerate the steps in hypothesis testing.

3B. What do you mean by non-parametric tests? With suitable examples briefly explain the applications of Mann Whitney U test and Wilcoxon signed rank test.

(5+5 = 10 marks)

4. The mean serum cholesterol level of 25 randomly selected normal healthy men is 240 mg/dl with a standard deviation of 40 mg/dl. The mean serum cholesterol level of 20 randomly selected men who undergone coronary bypass surgery during the preceding two year period is 260 mg/dl with standard deviation of 56 mg/dl.

4A. Name the statistical test used for comparing the mean serum cholesterol levels between the two groups.

4B. Write the null hypothesis and alternate hypothesis for this test.

4C. What are the assumptions for this test?

4D. Compute the value of test statistic for the above study.

4E. Briefly explain how do you take a decision on acceptance and rejection of null hypothesis for the above study.

(1+1+2+4+2 = 10 marks)

5A. Explain how do you compute sample size for comparing means of two independent groups.

5B. A research team conducted a case-control study examining the relationship between daily alcohol consumption and liver cancer. The team selected 2000 cases and 2000 controls and observed that 700 cases and 400 controls daily take alcohol. Make a two by two table and find the appropriate measure of strength of association between alcohol consumption and liver cancer. How do you interpret it?

(5+5 = 10 marks)

6. What do you mean by randomization in RCTs? Explain the simple, block and stratified randomization methods.

(1+9 = 10 marks)

7. Explain the structure of research thesis.

(10 marks)

8. **Write short notes on:**

8A. Survival analysis

8B. Validity and reliability of diagnostic tools

(5+5 = 10 marks)

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FIRST YEAR M.O.T. DEGREE EXAMINATION – JUNE 2015

SUBJECT: PAPER – I: OCCUPATIONAL THERAPY: PHILOSOPHY AND THEORETICAL FOUNDATIONS

Thursday, June 04, 2015

Time: 10:00 – 13:00 Hrs.   Maximum Marks: 80

✍   **Answer ALL questions.**

✍   **Long questions:**

1. Explain the Volition subsystem of the Model of Human Occupation. Describe the assessment, treatment principles and intervention for deficits of the volition system.

(5+15 = 20 marks)

2. Explain with suitable examples the Occupational functioning model described by Trombly .

(20 marks)

3. Discuss the application of the behavioral frame of reference (FOR) in management of maladaptive or undesirable behaviors' behaviors. Also summarize the indications and contraindications for using this (FOR).

(15+5 = 20 marks)

4. **Short notes:**

4A. Levinsons' theory of 'life transitions' and its application in OT practice.

4B. Factors determining measurements for environmental modifications.

(10+10 = 20 marks)

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FIRST YEAR M.O.T. DEGREE EXAMINATION – JUNE 2015

SUBJECT: PAPER – II: OCCUPATIONAL THERAPY: KNOWLEDGE BASE

Saturday, June 06, 2015

Time: 10:00 – 13:00 Hrs.   Maximum Marks: 80

✍   **Answer ALL the questions.**

✍   **Draw diagram wherever necessary.**

✍   **Long questions:**

1.   Explain non-associative and associative form of learning. Discuss operant conditioning and its effectiveness in clinical interventions.

(10+10 = 20 marks)

2.   Define force and describe type of force systems. Describe with an example the estimation of muscle force using second class lever.

(10+10 = 20 marks)

3.   Describe the properties of skeletal, cardiac and smooth muscles.

(20 marks)

4.   **Write short notes on:**

4A.   Define neural plasticity and describe the principles applied in rehabilitation.

(2+8 = 10 marks)

4B.   Describe single fiber electromyography.

(10 marks)

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FIRST YEAR M.O.T. DEGREE EXAMINATION – JUNE 2015

SUBJECT: PAPER – III: ASSESSMENTS IN OCCUPATIONAL THERAPY

Tuesday, June 09, 2015

Time: 10:00 – 13:00 Hrs.   Maximum Marks: 80

✍ **Answer ALL the questions:**

✍ **Long questions:**

1. Discuss any two tools used for assessment of activities of daily living.

(10+10 = 20 marks)

2. Describe the Allen's Cognitive Level Screen kit and method of administration.

(8+12 = 20 marks)

3. Describe framework for critiquing assessments in occupational therapy and explain its application in practice.

(15+5 = 20 marks)

4. **Short notes:**

4A. Define quality of life and explain the utility approach to measure the same.

(2+8 = 10 marks)

4B. Define work and identify services offered by occupational therapist in work practice.

(2+8 = 10 marks)

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FIRST YEAR M.O.T. DEGREE EXAMINATION – JUNE 2015

SUBJECT: PAPER – IV: OCCUPATIONAL THERAPY: TOOLS FOR PRACTICE

Thursday, June 11, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer ALL questions.**

✍ **Long questions:**

1. State the purpose of evaluation of ADL. Briefly describe the process of planning and establishing goals or outcomes to be achieved through occupational therapy in ADL limitations. Discuss the intervention strategies for home management.

    (2+8+10 = 20 marks)

2. Describe Job analysis. Explain the rationale for conducting job analysis. What considerations would you take during the job analysis to identify risk factors predisposing to musculoskeletal disorders involved with lifting and lowering task?

    (2+8+10 = 20 marks)

3. What are the major parts of KAFO? Explain the knee control mechanism in the KAFO and their indications.

    (8+12 = 20 marks)

4. **Short notes:**

4A. Hierarchy of risk factors causing illness

4B. Discuss the Universal design for bathroom

    (10+10 = 20 marks)

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