

MANIPAL UNIVERSITY

FRIST YEAR MASLP / MOT / MSc. MLT / MSc. RT / MSc. ECHOCARDIOGRAPHY / OPTOMETRY / MSc. MIT / MSc. RRT & DT DEGREE EXAMINATION – JUNE 2017

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

Friday, June 02, 2017

Time: 10:00 – 13:00 Hrs.

Max. Marks: 80

1. **Define the following:**

- 1A. Any three measures of central tendency
- 1B. Qualitative and quantitative variables with examples
- 1C. Sampling errors and non-sampling errors
- 1D. Sampling frame, probability sampling and non-probability sampling

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

- 2A. Write the properties of normal distribution. List any two applications of normal distribution.
- 2B. The mean rate of adenosine triphosphate among a sample of 30 insulin resistant children was found to be 6 $\mu\text{mol/g}$ of muscle/min with standard deviation of 2 $\mu\text{mol/g}$ of muscle/min. Find the 95% and 99% confidence intervals for the mean rate of adenosine triphosphate for the study population.

(5+5 = 10 marks)

- 3A. Define type I error, type II error, level of significance and power of a statistical test of significance.
- 3B. Hypothermia is a problem for extremely low birth weight infants. A study was conducted to investigate whether wrapping these infants in polyethylene bags in the delivery room and while they are being transferred to the neonatal intensive care unit affects the survival of babies. The results of the study conducted among 140 extreme low birth weight babies are given in the following table:

Warming treatment	Number of infants		Total
	Lived	dead	
Polyethylene bag	63	7	70
Traditional	61	9	70
Total	124	16	140

Test at 5% level of significance whether mortality among the extreme low birth weight infants is associated with the kind of warming treatment given. The table value for 5% level of significance is 3.84.

(4+6 = 10 marks)

4. Discuss independent sample t test and paired t test with an example.

(10 marks)

5. Explain case control study under the headings:

- i) design with the help of a flow chart
- ii) measure of strength of association
- iii) merits
- iv) demerits

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

6A. Write a short note on randomization in clinical trials.

6B. A randomized controlled trial has been planned to compare the effects of low fat diet with the diet recommended by the American Diabetic Association. The outcome variable is the total cholesterol (in mg/dL). What is the minimum number of subjects required in each group to detect a difference in total cholesterol of 20 mg/dL between the two groups with 90% power and 5% level of significance? Based on the earlier experience the standard deviation of total cholesterol in the population is about 35 mg/dL. The table value for 90% power and 5% level of significance is 1.28 and 1.96 respectively.

(5+5 = 10 marks)

7. **Write short notes on:**

- 7A. Validity of diagnostic test
- 7B. Structure of research thesis
- 7C. Meta-analysis
- 7D. Logistic regression

(5 marks × 4 = 20 marks)



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MANIPAL UNIVERSITY

FIRST YEAR MASTER OF OPTOMETRY DEGREE EXAMINATION – JUNE 2017

SUBJECT: PAPER – I: LOW VISION AND REHABILITATION
(2015 BATCH)

Monday, June 05, 2017

Time: 10:00 – 11:30 Hrs.

Maximum Marks: 40

Answer ALL the questions:

1. Discuss Age related macular degeneration under the following headings:
 - 1A. Etiology and types
 - 1B. Sign and Symptoms
 - 1C. Low vision management

(3+3+4 = 10 marks)

2. Write a note on refraction in low vision patients. Write a note on Amslar grid and Bailey lovie log MAR chart.

(5+5 = 10 marks)

3. A 50 year old female with severe arthritis, diagnosed as having plaquenil maculopathy came in to your clinic. She was a librarian and she was unable to do her job. Her chief complaints were difficulty in reading; difficulty with her financial management, difficulty in viewing television; and mobility difficulties, particularly with steps and curbs. She had experienced a progressive decrease in vision over the last four years, noticing greater problems in the last 12 months.
 - 3A. Enumerate your low vision evaluation for this patient
 - 3B. What interventions would you like to recommend for this case?
 - 3C. Write down a detail rehabilitation plan for this patient

(3+3+4 =10 marks)

4. Describe the importance of contrast sensitivity testing in low vision care. Write a note on non-optical low vision devices.

(3+7 = 10 marks)



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MANIPAL UNIVERSITY

FIRST YEAR MASTER OF OPTOMETRY DEGREE EXAMINATION – JUNE 2017

SUBJECT: PAPER – II: PAEDIATRIC OPTOMETRY & VISION THERAPY
(2015 BATCH)

Wednesday, June 07, 2017

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer ALL questions.**

✍ **Draw diagrams or flowcharts wherever necessary.**

1. **Write short notes:**

1A. Ectopia lentis

1B. Swollen optic disc in childhood

1C. What are the common inflammatory diseases associated with uveitis in children? List out the clinical features and investigations needed for any two of them.

1D. Important aspects to be considered in paediatric spectacle dispensing. Add a note on the lens materials recommended for pediatric population.

1E. What is the importance of electrophysiology in pediatric ocular diagnosis? Write on vestibulo ocular and optokinetic reflexes

1F. Sensory adaptations to strabismus. Write on 2 tests used for measuring distance stereopsis.

1G. Preseptal cellulitis

1H. Lawrence Moon Biedel Bardet Syndrome

(5 marks × 8 = 40 marks)

2. **Answer the following:**

2A. Write in detail on the normal development of the anterior structures of the eye. List the anomalies seen in eyelids, cornea and lens

(7+3 = 10 marks)

2B. Differential diagnosis of congenital esotropia with reasons to support your views.

(10 marks)

✍ **Essay:**

3. Write in detail on common Non Strabismic Binocular Vision Anomalies with the clinical features and management options.

(20 marks)



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MANIPAL UNIVERSITY

FIRST YEAR MASTER OF OPTOMETRY DEGREE EXAMINATION – JUNE 2017

SUBJECT: PAPER – III: OCCUPATIONAL OPTOMETRY, PUBLIC HEALTH
OPTOMETRY AND ADVANCES IN OPHTHALMIC DISPENSING
(2015 BATCH)

Friday, June 09, 2017

Time: 10:00 – 11:30 Hrs.

Maximum Marks: 40

✍ Attempt questions as instructed.

✍ Draw diagrams and flowcharts wherever necessary.

✍ Answer the following questions:

1. Write a note on strategic plan for vision 2020: the right to sight in India.
2. A 45 years old software engineer presents to your clinic complaining of headache, sore eyes while working and symptoms increases at the end of working hours. How will you manage this case?
3. Write a note on physical and chemical hazards and its management.
4. How an Optometric service for sports person is different from normal optometric practice?

(10 marks × 4 = 40 marks)

