Reg. No. ☐☐☐☐☐☐☐☐☐☐

# MANIPAL UNIVERSITY

## THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – DECEMBER 2007

### SUBJECT: RESEARCH METHODOLOGY AND STATISTICS

Monday, December 10, 2007

Time: 3 Hrs.                                                                 Max. Marks: 80

1. State the limitations of statistics.

(5 marks)

2. Distinguish between discrete and continuous variable with one example each.

(5 marks)

3. Explain the characteristics of ordinal and nominal Scales with example.

(5 marks)

4. List the advantages of probability sampling over non-probability sampling.

(5 marks)

5. Following is the height of 32 students in a class.

| Height (in cm) of 32 students in a class. | | | | | | | |
|---|---|---|---|---|---|---|---|
| 168.7 | 158.5 | 161.0 | 157.0 | 173.7 | 146.3 | 158.0 | 151.4 |
| 161.0 | 157.5 | 154.9 | 162.9 | 154.9 | 152.1 | 172.7 | 159.4 |
| 153.9 | 169.9 | 157.5 | 153.4 | 168.8 | 172.1 | 160.0 | 158.5 |
| 167.9 | 158.2 | 153.7 | 166.2 | 154.8 | 159.4 | 152.4 | 168.8 |

i)   Construct a frequency table with class intervals 145-150, 150-155,  …..etc. for the following data.

ii)  Construct relative (percentage) frequency distribution.

iii) Find out the percentage of students with height less than 155 cm.

(5+3+2 = 10 marks)

6. Compute mean and median of the following data:

Respiratory rate (per min.) in 10 patients: 22, 17, 24, 16, 23, 17, 21, 18, 19, 23

(5 marks)

7. Define standard deviation, variance, quartile deviation and inter-quartile range.

(5 marks)

8. Given the height of females is approximately normally distributed with a mean of 66 inches and a S.D. of 2 inches. What proportion of the females are

    i)    taller than or equal to 68 inches

    ii)   in the range 64 - 70 inches.

                                                                (5 marks)

9. Explain how do you interpret correlation coefficient. Mention its limitations.

                                            (3+2 = 5 marks)

10. Define health information system. List the components of health information system.

                                            (1+4 = 5 marks)

11. Differentiate the terms Incidence and Prevalence with example.

                                              (5 marks)

12. Define Crude death rate. What are its uses and limitations?

                                            (5 marks)

13. State the aims of epidemiology. Discuss the usefulness and limitations of Cross-sectional studies.

                                       (3+3+4 = 10 marks)

14. Differentiate Reliability and Validity with example.

                                            (5 marks)

Reg. No. [    ][    ][    ][    ][    ][    ][    ][    ][    ][    ]

# MANIPAL UNIVERSITY

## THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – DECEMBER 2007

### SUBJECT: SQUINT AND BINOCULAR VISION

Tuesday, December 11, 2007

Time: 3 Hrs.                                                                 Max. Marks: 80

1.  Elaborate on your methodology of workup if a child of 4 years presents to you with inward deviation (OS) noticed since 1 year and your management plan.

(12+8 = 20 marks)

2.  Explain briefly on the anatomy of extra ocular muscles and the actions of each extraocular muscle. Write briefly on the Herring's law of equal innervation and Sherrington's law of reciprocal innervation with examples.

(8+7+5 = 20 marks)

3.  Write short notes on:

3A. Define Binocular single vision. Grades of binocular single vision (explain with examples).

3B. Duane Retraction Syndrome.

3C. Write briefly on:

    i)   Maddox wing

    ii)  Maddox rod

    iii) Krimsky test

3D. Brief on the etiology, clinical characteristics and treatment options of exodeviations.

3E. Cranial Nerve IV paralysis.

(8×5 = 40 marks)

# MANIPAL UNIVERSITY

## THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – DECEMBER 2007

### SUBJECT: CONTACT LENS

Wednesday, December 12, 2007

Time: 3 Hrs.                                                                                     Max. Marks: 80

✍  **ALL questions are compulsory.  Draw diagrams wherever necessary.**

1.  Briefly explain the parts of an RGP lens with a neat diagram. Describe in detail on the optical principles of contact lenses.

(5+15 = 20 marks)

2.  Elaborate on your methodology of work up and management plan of an 18 year old male, on retinoscopy OU:-4.00/-2.00 × 180 who has come to you for contact lens. He loves driving bike and is an initial wearer.

(15+5 = 20 marks)

3.    Write short notes on:

3A.  What are hydrogel lenses? Give the FDA classification of soft contact lens material based on water content and ionicity with examples? Are there fewer or more complications with disposable contact lenses as compared to conventional daily wear soft contact lens? Discuss.

3B.  Do's and don'ts of Contact Lens wear.

3C.  Keratoconus, its symptoms, signs and treatment options.

3D.  Methods of inspection and verification of contact lenses.

3E.  Discuss on the Contact lens fitting in athletes and those involved in water sports.

(8×5 = 40 marks)

# MANIPAL UNIVERSITY

## THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – DECEMBER 2007

### SUBJECT: OCULAR DISEASES + EYE AND SYSTEMIC DISEASES

Thursday, December 13, 2007

Time: 3 Hrs.                                                                 Max. Marks: 80

✍  **All questions are compulsory. Draw diagrams wherever necessary.**

1.  Give differential diagnosis of watering eye and how do you evaluate a case of watering eye in a 2 year old child.

(20 marks)

2.  Describe the clinical features and stages of primary angle closure glaucoma.

(20 marks)

3.  Short notes:

3A.  Computer vision syndrome.

3B.  Acanthamoebic keratitis.

3C.  Keratoglobus.

3D.  Malignant glaucoma.

3E.  Central serous retinopathy.

(40 marks)

# MANIPAL UNIVERSITY

## THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – DECEMBER 2007

### SUBJECT: LOW VISION AIDS

Friday, December 14, 2007

Time: 1½ Hrs.                                                                 Max. Marks: 40

✍ **All questions are compulsory. Draw diagrams wherever necessary.**

1.  Explain about the basic requirements, methods of near vision evaluation and calculation of near vision add. Give an account of the various options of near vision correction in Low vision patients.

(20 marks)

2.  Write short notes on:
2A. History taking in Low vision patients.
2B. Accessory low visual aids.

(10 marks)

3.  Define Low vision. Explain various stages and clinical classification of Low vision patients.

(10 marks)

𝕏𝕏𝕏𝕏

# MANIPAL UNIVERSITY

## THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – DECEMBER 2007

### SUBJECT: GERIATRIC OPTOMETRY AND PAEDIATRIC OPTOMETRY

Saturday, December 15, 2007

Time: 1½ Hrs.                                                           Max. Marks: 40

✍  **All questions are compulsory. Draw diagrams wherever necessary.**

1.  Elaborate on your methodology of work-up and the management options that you recommend if a software professional of 48yrs comes to your clinic with the complaint of difficulty in seeing prints on the monitor. Distant visual acuity 20/20 (OU) and near visual acuity N6 (OU).

(20 marks)

2.  Explain in detail about the visual acuity evaluation of infants, pre-schoolers and school aged children.

(15 marks)

3.  Write a note on Silsoft Contact lenses.

(5 marks)

✵✵✵✵✵