Reg. No.										

MANIPAL UNIVERSITY

THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – JUNE 2009

SUBJECT: RESEARCH METHODOLOGY AND STATISTICS

Monday, June 08, 2009

Time: 3 Hrs. Max. Marks: 80

Answer ALL the questions.

1. Define:
   a) Population b) Sample c) Sampling
   d) Probability Sampling e) Non Probability Sampling

(2×5 = 10 marks)

2. What is Health Information System? What are the requirements and uses of Health Information System?

(2+4+4 = 10 marks)

3A. Define descriptive epidemiology and enumerate its uses.

3B. The estimated mid-year population for a city in 1990 was 761,335. During the year, the total new cases of tuberculosis reported from this city were 912 and the total cases of tuberculosis reported during the year were 23,000. Calculate the incidence rate and period prevalence rate for tuberculosis in the year 1990.

(5+5 = 10 marks)

4A. List the properties of normal distribution with the help of a neat diagram.

4B. It is observed that the time taken to complete a functional reach test by a group of people is normally distributed with a mean of 12 minutes and a standard deviation of 2 minutes. How many do you expect in a sample of 300 to have a task completion time
   i) Less than 14 minutes ii) Between 8 and 16 minutes

(5+5 = 10 marks)

5. Explain different measurement scales with examples.

(5 marks)

6. Write short notes on:

6A. Steps involved in research process.

6B. Skewness.

6C. Independent and dependent variables.

6D. Reliability and validity.

6E. Crude birth rate and general fertility rate.

(5×5 = 25 marks)

7. Total serum proteins (in gm percent) of 10 subjects are given below.
7.8, 7.2, 7.0, 6.8, 7.4, 6.6, 7.1, 7.5, 5.8, 6.6
Calculate mean and median.

(5 marks)

8. The following table shows tuberculin reaction measured in 206 persons who were never vaccinated. Present the data graphically by a frequency polygon on a histogram.

Reaction in mm.	No. of persons
8-10	24
10-12	52
12-14	42
14-16	48
16-18	12
18-20	08
20-22	14
22-24	06

(5 marks)

Reg. No.										

MANIPAL UNIVERSITY

THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – JUNE 2009

SUBJECT: SQUINT AND BINOCULAR VISION

Tuesday, June 09, 2009

Time: 14:00-17:00 Hrs. Max. Marks: 80

✍ **Draw diagram wherever necessary.**

1. Fill up the blanks:

1A. X[T] is used to denote _____.
1B. Eye muscles responsible for laevodepression are _____.
1C. In Hirschberg test, 1mm of decentration corresponds to _____ degrees.
1D. Name a strengthening procedure in squint surgery.
1E. _____ is a rare condition in which one or both eyes are anchored in a position of extreme adduction.

(1×5 = 5 marks)

2. Write short notes on (any SEVEN):

2A. Occlusion therapy and penalization used for the treatment of amblyopia.
2B. Infantile esotropia.
2C. Synaptophore.
2D. What is angle kappa and its clinical significance? Write on one test used for the measurement of angle kappa.
2E. Dissociated Vertical Deviation.
2F. Brief on: i) Frisby test ii) Titmus stereofly test
2G. Empirical clues.
2H. Horopter and panum's area with diagram.

(5×7 = 35 marks)

3. Answer both the questions.

3A. Non surgical management of strabismus.
3B. What is incomitant squint? List the different stages in paralytic squint. Brief the procedure for diplopia charting and show a charting for right medial rectus palsy.

(10×2 = 20 marks)

4. Answer any ONE of the following.

4A. Write briefly on:
i) Anatomy of intrinsic and extrinsic muscles of the eye.
ii) List the bones that take part in the formation of the orbit.
iii) Divisions of the third cranial nerve and its supply.
iv) Sherrington's law of reciprocal innervation.

(10+3½+4+2½ = 20 marks)

4B. You have a 3 year old girl coming to your clinic for squint evaluation. Parents tell that inward deviation is from last 1 year. Give an account of your work up plan and management options. Brief on the differential diagnosis you would look for in this case.

(10+5+5 = 20 marks)

Reg. No.										

MANIPAL UNIVERSITY

THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – JUNE 2009

SUBJECT: CONTACT LENS

Wednesday, June 10, 2009

Time: 14:00-17:00 Hrs. Max. Marks: 80

✍ **Draw diagrams wherever necessary.**

1. Fill up the blanks:

1A. In RGP lens wear, onset of CLPC occurs most commonly near _____

1B. The desired tightness in lower lid push up test is _____

1C. Keratometry utilizes purkinje image 1. True or false?

1D. Total contact lens diameter needed for a paediatric aphake of age 1 year is _____

1E. A completely hydrophilic surface is one with a wetting angle of _____

(1×5 = 5 marks)

2. Write short notes on any SEVEN:

2A. Etiology, clinical features and management options of keratoconus.

2B. List the contact lens materials used in extended wear contact lenses. Write a note on lens selection, fitting and management of extended wear contact lens.

2C. CLPU.

2D. Illumination techniques used in slit lamp biomicroscope.

2E. What are preservatives and what are its characteristics? Add a note on EDTA.

2F. Pre fitting considerations for an aphake who wants his initial contact lenses.

2G. i) A patient's right eye has a spectacle refraction of-6.50/-3.00 x170 at a vertex distance of 14mm.You have decided to fit the patient with soft toric lens. Taking into account the typical rotation of the lens on eye, what must be the final contact lens power to be ordered for the patient?

ii) What are the reasons for which we want a soft lens to show adequate movement on the eye?

2H. i) Dont's of contact lens wear (any 6 points).

ii) What is not acceptable regarding lens fit when you dispense a soft spherical contact lens?

(5×7 = 35 marks)

3. Answer both the questions:

3A. What is the basic principle of any refractive surgery? Brief on lens selection, dispensing and after care of post refractive surgery contact lens fitting.

3B. Write on FDA classification of hydrogel lenses. Brief on soft lens manufacturing methods.

(10×2 = 20 marks)

4. Answer any ONE of the following:

4A. i) Elaborate on the preliminary measurements that has to be taken for fitting RGP contact lens.

ii) Brief on the effect of centre of gravity, total diameter, BOZR, centre thickness and edge profile on RGP lens fit.

iii) If an RGP lens wearer visits your practice and complains of flare and haloes at night, what might be the most likely cause of the problem? Justify your answer.

(8+10+2 = 20 marks)

4B. i) Elaborate on your approach when you have a contact lens patient for follow up after 1 year of dispensing.

ii) What are the consequences of deposit accumulation on a contact lens? Explain briefly on protein and lipid deposit and lens discolouration

(10+10 = 20 marks)

Reg. No.										

MANIPAL UNIVERSITY

THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – JUNE 2009

SUBJECT: OCULAR DISEASES + EYE AND SYSTEMIC DISEASES

Thursday, June 11, 2009

Time: 14:00-17:00 Hrs. Max. Marks: 80

All questions are compulsory. Draw diagrams wherever necessary.

1. Define Amblyopia, discuss the types and management of amblyopia.

(3+7+10 = 20 marks)

2. Discuss the anatomy of the angle of anterior chamber and methods to visualize the same.

(10+10 = 20 marks)

3. Write short notes on:

3A. Low Vision Aids.

3B. Goldmann perimeter.

3C. LASIK.

3D. Color vision.

3E. Vernal keratoconjunctivitis.

(8×5 = 40 marks)

Reg. No.										

MANIPAL UNIVERSITY

THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – JUNE 2009

SUBJECT: LOW VISION AIDS

Friday, June 12, 2009

Time: 14:00-15:30 Hrs. Max. Marks: 40

1. Fill in the blanks:

1A. _____is the dioptric power needed to read 1M print size for a low vision patient whose near acuity is 4M at 40cms.

1B. The reduction of visual function caused by the scattering of incoming light is known as_____

1C. _____ is the required working distance for a low vision patient with 8X telescope with +5.00D reading cap.

1D. Amsler`s chart is covering an area of _____

1E. A low vision patient can see N36 at 40cms. But he can read N12 at 20cms. The relative size magnification produced is _____

(1×5 = 5 marks)

2. Answer any THREE:

2A. Describe accessory low vision aids.

2B. Describe the educational considerations for a child with low vision.

2C. Write a short note on retinitis pigmentosa and its low vision management.

2D. Explain about contrast sensitivity function (CSF) and its importance in low vision care.

(5×3 = 15 marks)

3. Answer both:

3A. Describe hand magnifier, stand magnifier and spectacle magnifier and compare their advantages and disadvantages.

3B. 80 years old female presented with an ocular diagnosis of Macular degeneration (OU) and pseudophakia (OU) and systemic history of diabetes and arthritis in your clinic. Her refraction is;

OD: – 1.50/–1.00 X 180; 3/60, N18

OS: –1.00/–1.25 X 170; 3/60, N36

Near vision addition: +3.00D (OU)

Describe briefly the type of investigations that you will do for the patient and how will you proceed the low vision evaluation?

(10×2 = 20 marks)

Reg. No.										

MANIPAL UNIVERSITY

THIRD YEAR B.Sc. OPTOMETRY DEGREE EXAMINATION – JUNE 2009

SUBJECT: GERIATRIC OPTOMETRY AND PAEDIATRIC OPTOMETRY

Saturday, June 13, 2009

Time: 14:00-15:30 Hrs. Max. Marks: 40

✍ **Draw diagrams wherever necessary.**

1. Fill in the Blanks.

1A. The working principle of Optokinetic Nystagmus (OKN) drum is_____

1B. Horizontal Descemet's membrane opacity seen in congenital glaucoma is known as_____

1C. The size of the pupil will _____ as the age increases

1D. The most useful test to assess the visual acuity of young infant is _____

1E. Stargardt's diseases is transmitted as Autosomal _____ trait

(1×5 = 5 marks)

2. Short Notes: (Answer any THREE)

2A. Methods of binocular vision assessment in Infants (Any Four).

2B. Congenital glaucoma.

2C. Age related changes in Vitreous, Iris & AC.

2D. Embryonic development of anterior segment structures.

(5×3 = 15 marks)

3. Essay:

3A. Write an essay on age related changes in vision and refraction.

3B. Elaborate the procedure of work-up for a kid presented to you with a complaint of inward deviation of eyes.

(10×2 = 20 marks)