Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER M.Sc. H.H.I.A DEGREE EXAMINATION – JUNE 2013

SUBJECT: MHI 606 – EPIDEMIOLOGY AND BIOSTATISTICS
(COMMON FOR CBS & 2010 BATCH)

Tuesday, June 11, 2013

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

Answer all questions.

1A. Define sampling, sampling frame, sampling error and non-sampling error.

1B. A study was planned to find whether there is any difference in the average RBC Cholinesterase values (measured in micro mol/min/ml) between alcoholic and non-alcoholic adult males. What should be the minimum sample size required in each group to detect a clinical significant difference of 3 micro mol/min/ml at 80% power and 5% level of significance? Assume that pooled standard deviation of RBC Cholinesterase values is 5 micro mol/min/ml. ($Z_{1-\alpha/2} = 1.96$, $Z_{1-\beta} = 0.84$).

(4+6 = 10 marks)

2A. What is meant by Standard error? Write any two applications of standard error in statistical inference?

2B. Briefly explain different measures of central tendency.

(5+5 = 10 marks)

3A. Write down the steps involved in Research process.

3B. Describe Binomial distribution with an example.

(6+4 = 10 marks)

4. The pulse rate of 6 patients are measured before and after administering a drug.

Pulse rate before taking drug	72	70	68	67	73	71
Pulse rate after taking drug	74	72	69	68	72	71

4A. Name the statistical test used for find whether there is significant difference in pulse rate before and after administering the drug.

4B. State the null and alternate hypothesis.

4C. What are the assumptions for this test?

4D. Compute the test statistic value.

(1+2+2+5 = 10 marks)

5A. Define Epidemiology and enumerate the uses of epidemiology.

5B. What do you mean by blinding in randomised control trial? What is the use of blinding and define various types of blinding?

(5+5 = 10 marks)

6. Write short notes on:

6A. One way ANOVA.

6B. Logistic regression.

6C. Reliability of diagnostic tests.

6D. Meta analysis.

6E. Relative risk and odds ratio.

6F. Non-parametric tests

(5×6 = 30 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER M.Sc. H.H.I.A DEGREE EXAMINATION – JUNE 2013

SUBJECT: MHI 606 – EPIDEMIOLOGY AND BIOSTATISTICS
(COMMON FOR CBS & 2010 BATCH)

Tuesday, June 11, 2013

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

Answer all questions.

1A. Define sampling, sampling frame, sampling error and non-sampling error.

1B. A study was planned to find whether there is any difference in the average RBC Cholinesterase values (measured in micro mol/min/ml) between alcoholic and non-alcoholic adult males. What should be the minimum sample size required in each group to detect a clinical significant difference of 3 micro mol/min/ml at 80% power and 5% level of significance? Assume that pooled standard deviation of RBC Cholinesterase values is 5 micro mol/min/ml. ($Z_{1-\alpha/2} = 1.96$, $Z_{1-\beta} = 0.84$).

(4+6 = 10 marks)

2A. What is meant by Standard error? Write any two applications of standard error in statistical inference?

2B. Briefly explain different measures of central tendency.

(5+5 = 10 marks)

3A. Write down the steps involved in Research process.

3B. Describe Binomial distribution with an example.

(6+4 = 10 marks)

4. The pulse rate of 6 patients are measured before and after administering a drug.

Pulse rate before taking drug	72	70	68	67	73	71
Pulse rate after taking drug	74	72	69	68	72	71

4A. Name the statistical test used for find whether there is significant difference in pulse rate before and after administering the drug.

4B. State the null and alternate hypothesis.

4C. What are the assumptions for this test?

4D. Compute the test statistic value.

(1+2+2+5 = 10 marks)

5A. Define Epidemiology and enumerate the uses of epidemiology.

5B. What do you mean by blinding in randomised control trial? What is the use of blinding and define various types of blinding?

(5+5 = 10 marks)

6. Write short notes on:

6A. One way ANOVA.

6B. Logistic regression.

6C. Reliability of diagnostic tests.

6D. Meta analysis.

6E. Relative risk and odds ratio.

6F. Non-parametric tests

(5×6 = 30 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER M.Sc. H.H.I.A. DEGREE EXAMINATION – JUNE 2013

SUBJECT: PHARMACOLOGY (MHI 602)
(COMMON FOR CBS & 2010 BATCH)

Thursday, June 13, 2013

Time: 10:00 – 11:30 Hrs. Max. Marks: 40

1. Mention two advantages and two disadvantages of sublingual route of drug administration. (2 marks)

2. Define synergism with an example. (2 marks)

3. List four factors affecting drug absorption. (2 marks)

4. Write short notes on the following:
4A. Drug nomenclature
4B. Omeprazole
4C. Aspirin
(3×3 = 9 marks)

5. Explain the mechanism of action of the following:
5A. Local anaesthetics
5B. Cotrimoxazole
(2×2 = 4 marks)

6. Mention three groups of antihypertensive drugs with an example for each group. (3 marks)

7. Mention two examples and two therapeutic uses of the following class of drugs:
7A. Opioids
7B. Tetracyclines
7C. Anticholinesterases
7D. Aminoglycosides
7E. Corticosteroids
(2×5 = 10 marks)

8. List two drugs each used in the following conditions:
8A. Epilepsy
8B. Tuberculosis
8C. Diabetes mellitus
8D. Amoebiasis
(1×4 = 4 marks)

9. Explain the pharmacological basis for the use of the following:
9A. Adrenaline in anaphylactic shock
9B. Nitrates in angina
(2×2 = 4 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER M.Sc. H.H.I.A. DEGREE EXAMINATION – JUNE 2013

SUBJECT: MEDICAL TERMINOLOGY – II (MHI 604)
(COMMON FOR BOTH CBS & 2010 BATCH)

Saturday, June 15, 2013

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

Answer all the questions.

1. **Write down the correct explanation for following medical terms:**

a)	Sarcoma	b)	Antibody	c)	Hobophobia	d)	Haematuria
e)	Claudication	f)	Trigonitis	g)	T-cell	h)	Algophobia
i)	Agalactia	j)	Hyphaema				

(1×10 = 10 marks)

2. **Write down the correct expansion for following abbreviations:**

a)	HAV	b)	DHF	c)	GTN	d)	CF	e)	PAN
f)	MOS	g)	ASD	h)	LDL	i)	SMR	j)	PTH
k)	NREM	l)	VZV	m)	PBC	n)	MHC	o)	CPR

(1×15 = 15 marks)

3. **Write short notes on:**

a)	Humoral immunity	b)	Cardiomyopathy	c)	Chemotherapy
d)	Cryptorchidism	e)	Strabismus	f)	Pyoderma gangrenosum
g)	Scarlet fever	h)	Thyrotoxicosis	i)	Paranoid Schizophrenia
J)	Waardenburg syndrome				

(2½×10 = 25 marks)

4. **Answer the following:**

4A. Write down in detail about etiology and clinical features of Candidiasis.

4B. What is Alzheimer's disease? Discuss about important clinical aspects of Alzheimer's disease.

4C. Give an account of Erythroblastosis Fetalis and Placental Insufficiency.

4D. Discuss in detail about etiology and important clinical features of Mucolipidosis.

4E. Distinguish between clinical features of Presbyopia and Astigmatism.

(6×5 = 30 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER M.Sc. H.H.I.A. DEGREE EXAMINATION – JUNE 2013

SUBJECT: HEALTH INFORMATICS (MHI 610)
(COMMON FOR CBS & 2010 BATCH)

Tuesday, June 18, 2013

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

✍ **Answer all questions.**

1. Define Health Informatics. Discuss briefly on system theory with suitable example.

(1+11 = 12 marks)

2. Draw a health information system organizational chart. Explain briefly about various sections of health information department.

(4+8 = 12 marks)

3. Define eHealth. Write the benefits of eHealth. Explain briefly on eHealth market segments.

(1+4+7 = 12 marks)

4. What are the international standards used for the clinical data representation in health informatics. Discuss.

(12 marks)

5. What are the changes took place in management roles due to advances in healthcare informatics. Discuss.

(12 marks)

6. **Write short notes on:**

6A. Development of health informatics during 1970s.

6B. HIPAA.

6C. Approaches for predicting the future state of healthcare informatics.

6D. Key capability of electronic health records.

(5×4 = 20 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER M.Sc. H.H.I.A. DEGREE EXAMINATION – JUNE 2013

SUBJECT: MHI 608 – HOSPITAL ADMINISTRATION

(CREDIT BASED SYSTEM)

Thursday, June 20, 2013

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

1. Discuss the planning of the out-patient services for a general hospital. Add a note on the common problems faced in the OPD.

(15+7 = 22 marks)

2. Discuss the classification of ward accommodation. Add a note on special nursing units.

(15+7 = 22 marks)

3. Write short notes on the following:

3A. Classification of ICU's.

3B. Radiation protection in X-ray units.

3C. Workflow in CSSD department.

(12×3 = 36 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER M.Sc. H.H.I.A. DEGREE EXAMINATION – DECEMBER 2013

SUBJECT: PHARMACOLOGY (MHI 602)
(COMMON FOR GS & NR)

Wednesday, December 18, 2013

Time: 10:00 – 11:30 Hrs. Max. Marks: 40

1. Describe the following terms:

1A. Bioavailability

1B. Synergism

1C. Pharmacokinetics

1D. Therapeutic index

(1½×4 = 6 marks)

2. Mention what do the following abbreviations stands for:

2A. t.i.d.

2B. q.s.

2C. b.d.

2D. s.o.s.

(½×4 = 2 marks)

3A. Explain the mechanism of action of macrolides.

3B. Mention two different classes of antihypertensive drugs with an example for each class.

(2+2 = 4 marks)

4. Explain the pharmacological basis for the following:

4A. Levodopa is combined with carbidopa in the treatment of parkinsonism

4B. Nitrates are used in angina pectoris

(2×2 = 4 marks)

5A List two sources of drugs with an example.

5B. Describe any two different parts of a prescription.

(2+2 = 4 marks)

6. Mention two examples and two uses of the following groups of drugs:

6A. Antihistaminics

6B. Cholinergic drugs

6C. Adrenergic drugs

6D. Opioids

(2×4 = 8 marks)

7. Write briefly on the following:

7A. Aspirin

7B. Skeletal muscle relaxants

(3×2 = 6 marks)

8. List two drugs each used in the following conditions and mention two specific adverse effects of any one of them:

8A. Insomnia

8B. Tuberculosis

8C. Diabetes mellitus

(2×3 = 6 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER M.Sc. H.H.I.A. DEGREE EXAMINATION – DECEMBER 2013

SUBJECT: MEDICAL TERMINOLOGY – II
(NEW REGULATION)

Thursday, December 19, 2013

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

Answer all the questions.

1. **Write down the correct explanation for following medical terms:**

a)	Genotype	b)	Leiomyoma	c)	Vaginisumus
d)	Panophobia	e)	Acne	f)	Haematemesis
g)	Anosmia	h)	Necrophilia	i)	Prurigo
j)	T- cell				

(1×10 = 10 marks)

2. **Write down the correct expansion for following abbreviations:**

a)	ACD	b)	FBC	c)	IGT	d)	HRT
e)	IPPV	f)	CMV	g)	MLF	h)	OA
i)	PGL	j)	RCA	k)	DSA	l)	TPN
m)	COAD	n)	ELISA	o)	AIN		

(1×15 = 15 marks)

3. **Write short notes on:**

a)	Sarcoma	b)	Hyperopia	c)	Diphtheria
d)	Bulimia Nervosa	e)	Ballism	f)	Vertigo
g)	Immune response	h)	Placenta previa	i)	Trachoma
j)	Volvulus				

(2½×10 = 25 marks)

4. **Answer the following:**

4A. Write down in detail about any TWO refractive disorders of eyes?

4B. Discuss in detail about various clinical aspects of Mental Retardation.

4C. What is Tinea? Write down briefly about different types of Tinea.

4D. Write down the causes and clinical features of cardiac arrhythmias.

4E. What is Nephrotic syndrome? Write down the etiology and clinical features of Nephrotic syndrome?

(6×5 = 30 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER M.Sc. H.H.I.A DEGREE EXAMINATION – DECEMBER 2013

SUBJECT: MHI 606 – EPIDEMIOLOGY AND BIOSTATISTICS
(COMMON FOR GS & NR)

Friday, December 20, 2013

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

1. Write a short essay on the importance of Biostatistics in medical research.

(5 marks)

2. Explain the rationale for a sample study with an illustration.

(5 marks)

3. With the help of a neat diagram, discuss the properties of a normal distribution. In a population, haemoglobin level was found to be normally distributed with a mean of 12.5 grams/dl and a SD of 1.5 grams/dl. Calculate the proportion of persons in the population with their haemoglobin level: i) More than 14 grams/dl ii) Less than 9.5 grams/dl iii) Between 9.5 and 14 grams/dl

(5+5 = 10 marks)

4. Define the terms and concepts associated with tests of significance. What are the steps involved in performing a test of significance?

(6+4 = 10 marks)

5. A team of cardiologists conducted a study to investigate the association between oral contraceptive use and hypertension. The results of the study are given below.

	Hypertensive	**Normotensive**	**Total**
Oral contraceptive	12	48	60
Other	22	68	90
Total	34	116	150

At 5% level of significance, do these data provide sufficient evidence to indicate the association between method of contraceptive use and hypertension? ($\chi^2_{1df}(0.05) = 3.84$)

(10 marks)

6. What are the requirements for calculating minimum sample size for estimating proportion and how they influence the required minimum sample size?

(5 marks)

7. **Distinguish between**:

7A. Case report and case series studies

7B. Analytical and descriptive studies

7C. Incidence rate and prevalence rate

7D. Relative risk and odds ratio

7E. Retrospective and prospective study designs

(10 marks)

8. A case control study was conducted to find the effect of smoking on esophageal cancer. Six hundred of 680 esophageal cancer cases and 550 of 820 controls were smokers. Construct appropriate 2×2 table, calculate appropriate measure of strength of association and interpret the same.

(5 marks)

9. Describe the need and the concept of multivariate analysis.

(5 marks)

10. Define and distinguish with pictorial illustration between reliability and validity.

(5 marks)

11. **Write short note on**:

11A. Systematic review

11B. Structure of a research protocol

(5+5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER M.Sc. H.H.I.A. DEGREE EXAMINATION – DECEMBER 2013

SUBJECT: HEALTH INFORMATICS (MHI 610)
(COMMON FOR GS & NR)

Saturday, December 21, 2013

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

✍ **Answer all questions.**

1. What is database management system? Write the various database models with suitable example. What are the basic steps involved in the designing and development of database management system. Explain.

(1+4+7 = 12 marks)

2. Draw a flowchart to show the structure of a health information department. Discuss briefly on role and responsibility of health information department personnel of various level.

(3+9 = 12 marks)

3. Define the term eHealth. How the providers are getting benefited with eHealth applications in patient care? What are the various strategies required for the successful implementation of eHealth application? Explain.

(1+4+7 = 12 marks)

4. What are the identifiers and content and structure standards that should to be considered for the implementation of health informatics applications? Discuss.

(6+6 = 12 marks)

5. Discuss the various legal and policy implication with respect to the protection of healthcare information.

(12 marks)

6. **Write short notes on:**

6A. Development of health informatics during 1960s
6B. Need of telemedicine in Indian scenario
6C. Trends influencing healthcare informatics
6D. Change theory of healthcare informatics

(5×4 = 20 marks)