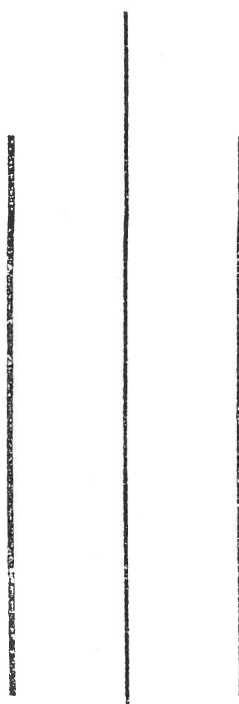




KATHMANDU UNIVERSITY



EVALUATION SCHEME
FOR
MBBS PROGRAM

August, 2011

संश्लेषण पत्रिकाको २०६८ अङ्क १६ मा लेखी बेलकवाट स्वीकृत



Kathmandu University
School of Medical Sciences

Evaluation Scheme for MBBS Programme
Effective from August 2011 Batch Intake

The four and half years of the MBBS program is divided into nine semesters, each of which are of six months duration. The first four semesters are devoted to the study of Pre Clinical Sciences. Disciplines of Pre Clinical Sciences are Anatomy, Physiology, Biochemistry, Pathology, Pharmacology, Microbiology, and Community Medicine. The students are also introduced to clinical knowledge and skills with a subject of "Introduction to Clinical Medicine".

The teaching learning experiences in the Community Medicine is from first through seventh semester.

The Clinical Science subjects are taught from fifth to ninth semesters. The teaching learning experiences in Forensic Medicine, Otorhinolaryngology and Ophthalmology are done in sixth and seventh semesters. The subjects of Medicine and allied subjects, Surgery and allied subjects, Obstetrics & Gynecology and Pediatrics are taught from fifth to ninth semesters.

All requirement of MBBS program have to be completed within ten years from the date of admission. Failing to do so will lead to automatic dismissal from the program.

Evaluation of the MBBS program is done as follows:

- Internal Assessment – 20%
- University Examination – 80%

| Evaluation | Weightage percent | |
|------------------------|-------------------|--------------------|
| | Theory | Practical/Clinical |
| Internal Assessment | 20% | 20% |
| University Examination | 80% | 80% |

1. Internal Assessment

Performance of a student shall be judged by internal assessment which shall have two components.

- a. Continuous Assessment - 10%
- b. Sessional Examination (Semester Examination) - 10%

Continuous Assessment: The continuous assessment shall be done throughout the semesters. It will be done by the faculty members of each department one or more of the following ways:

| | | |
|------------------|---------------|------------------------------|
| Written test | Practical | Open book test |
| Quizzes | Projects work | Home assignment |
| Workshop/Seminar | Viva-Voce | Any other appropriate method |

Sessional Examination: The Sessional Examination shall consist of MCQs (50%), Structured - short answer questions SAQs (30%) and Problem Based Questions PBQs (20%) in theory papers and long, short cases/practical problems (70%), viva-voce (20%), log book evaluation (10%) in practical subjects.

The department concerned, at the end of every semester, shall take the Sessional Examination as shown in the table below

Table for Sessional Examination

| Subjects | Sem I | Sem II | Sem III | Sem IV | Sem V | Sem VI | Sem VII | Sem VIII | Sem IX |
|--|-------|--------|---------|--------|-------|--------|---------|----------|--------|
| Paper I Basic concepts, Genetics and Immunology & Immune System : Anatomy (Ana), Physiology (Phy), Biochemistry (Bio), Pharmacology (Phar), Pathology (Path), Microbiology (Mic) | √ | | | | | | | | |
| Paper II Autonomous Nervous System, Musculoskeletal System and Integumentary System: Ana, Phy, Bio, Phar, Path, Mic | √ | | | | | | | | |
| Paper III Haemopoietic System and Cardiovascular System : Ana, Phy, Bio, Phar, Path, Mic | | √ | | | | | | | |
| Paper IV Respiratory System : Ana, Phy, Bio, Phar, Path, Mic | | √ | | | | | | | |
| Paper V Gastrointestinal System and Hepatobiliary System : Ana, Phy, Bio, Phar, Path, Mic | | | √ | | | | | | |
| Paper VI Renal – Electrolyte System, Endocrine and Metabolism System: Ana, Phy, Bio, Phar, Path, Mic | | | √ | | | | | | |
| Paper VII Reproductive System : Ana, Phy, Bio, Phar, Path, Mic. | | | | √ | | | | | |
| Paper VIII Central Nervous System and Special Senses : Ana, Phy, Bio, Phar, Path, Mic | | | | √ | | | | | |
| Community Medicine | √ | √ | √ | √ | √ | √ | √ | | |
| Introduction to Clinical Medicine | | √ | | √ | | | | | |
| Forensic Medicine | | | | | | √ | √ | | |
| Otorhinolaryngology | | | | | | √ | √ | | |
| Ophthalmology | | | | | | √ | √ | | |
| Medicine and allied subjects | | | | | √ | √ | √ | √ | √ |
| Surgery and allied subjects | | | | | √ | √ | √ | √ | √ |
| Obstetrics and Gynaecology | | | | | √ | √ | √ | √ | √ |
| Pediatrics | | | | | √ | √ | √ | √ | √ |

- The attendance record and internal assessment marks for each theory paper and practical subject separately will be forwarded to the Controller of Examinations 15 days prior to the beginning of the university examination.

- Documents related to the internal assessment will be kept in Principal's Office and shall be made available at any time on request by the University.

2. University Examinations

The University Examination will consist of theory papers and practical subjects including viva-voce, OSPE/OSCE.

Eligibility Criteria for appearing in the University Examinations:

- Attendance: Minimum 80% of attendance in all theory papers and practical subjects separately.
- Students must secure minimum of 50% marks in each theory paper and Practical subject separately in internal assessment.

The University will conduct MBBS Examinations as follows:

- Regular Examinations at the end of II, IV, VII & IX Semesters.
- Compartmental Examination - Six months after the regular university examinations.

3. Pre-Clinical Sciences

I MBBS University Examination

Theory papers and Practical subjects - At the end of II Semester:

Theory

Four theory papers of following system in Pre-Clinical Science subjects of Anatomy, Physiology, Biochemistry, Microbiology, Pathology and Pharmacology as given in the table below:

| Papers | Systems/Papers |
|-----------|---|
| Paper I | Basic concepts, Genetics, Immunology and Immune system |
| Paper II | Autonomic Nervous System, Musculoskeletal System and Integumentary System |
| Paper III | Haemopoietic System and Cardiovascular System |
| Paper IV | Respiratory System |

Practical

Six Practical Examinations will be conducted subject-wise in Anatomy, Physiology, Biochemistry, Microbiology, Pathology and Pharmacology.

II MBBS University Examination

Theory papers and Practical subjects - At the end of IV Semester:

Theory

Six theory papers out of which four (V-VIII papers) of following systems in Pre-Clinical Sciences subjects of Anatomy, Physiology, Biochemistry, Microbiology, Pathology and Pharmacology, along with two papers consisting of Community Medicine part I and Introduction to Clinical Medicine as given in the table below:

| Papers | Systems/Papers |
|------------|---|
| Paper V | Gastrointestinal and Hepatobiliary System |
| Paper VI | Renal – Electrolyte System, Endocrine and Metabolism System |
| Paper VII | Reproductive System |
| Paper VIII | Central Nervous System and Special Senses |
| Paper IX | Introduction to Clinical Medicine |
| Paper X | Community Medicine |

Practical

Eight Practical Examinations will be conducted, out of which six are subject-wise: Anatomy, Physiology, Biochemistry, Microbiology, Pathology, Pharmacology, and two other subjects in Community Medicine Part I and Introduction to Clinical Medicine.

4. Distribution of marks

Theory papers shall be of three hours duration and the pattern of question papers shall be as follows:

| Section | Type of question | Number of questions | Mark distributions | Time allocation |
|---------|---------------------------------|---------------------|--------------------|------------------------|
| A | MCQ (Multiple choice questions) | 30 | 30 (30Q×1 mark) | 30 minutes |
| B | SAQ (Short answer questions) | 6 | 30 marks (6Q) | 2 hours and 30 minutes |
| C | PBQ (Problem based questions) | 2 | 20 (2Q×10 mark) | |

Subject-wise guidelines for MCQ, SAQ and PBQ for Pre-Clinical Sciences are given in Annex I, and II.

| | |
|----------------------|--|
| Practical – 70 marks | Practical - 50 marks OSCE/OSPE/Spotting - 10 marks Viva voce - 10 marks |
| Log book – 10 marks | Practical activities, records - 5 marks Academic activities- Seminars - 5 marks |

Mark distributions for individual subject of Pre-Clinical Sciences in each paper based upon number of teaching hours:

| I MBBS University Examination | | | | | | | |
|--------------------------------------|-----------|--------------|--------------|-----------|--------------|------------|-------------|
| Papers | Anatomy | Biochemistry | Microbiology | Pathology | Pharmacology | Physiology | Total marks |
| Paper I | 15 | 13 | 9 | 8 | 10 | 7 | 60 |
| MCQ | 7 | 6 | 5 | 4 | 5 | 3 | 30 |
| SAQ | 8 | 5 | 4 | 4 | 5 | 4 | 30 |
| Paper II | 18 | 6 | 6 | 7 | 17 | 6 | 60 |
| MCQ | 9 | 3 | 3 | 4 | 8 | 3 | 30 |
| SAQ | 9 | 3 | 3 | 3 | 9 | 3 | 30 |
| Paper III | 4 | 13 | 7 | 13 | 11 | 12 | 60 |
| MCQ | 2 | 6 | 4 | 6 | 6 | 6 | 30 |
| SAQ | 2 | 7 | 3 | 7 | 5 | 6 | 30 |
| Paper IV | 10 | 6 | 9 | 10 | 14 | 11 | 60 |
| MCQ | 5 | 3 | 4 | 5 | 7 | 6 | 30 |
| SAQ | 5 | 3 | 5 | 5 | 7 | 5 | 30 |

20 marks are allotted for PBQs in each theory paper.

| II MBBS University Examination | | | | | | | |
|--------------------------------|-----------------------|--------------|--------------|-----------|--------------|------------|-------------|
| Papers | Anatomy | Biochemistry | Microbiology | Pathology | Pharmacology | Physiology | Total marks |
| Paper V | 12 | 11 | 14 | 12 | 4 | 7 | 60 |
| MCQ | 6 | 5 | 7 | 6 | 2 | 4 | 30 |
| SAQ | 6 | 6 | 7 | 6 | 2 | 3 | 30 |
| Paper VI | 6 | 13 | 4 | 19 | 11 | 7 | 60 |
| MCQ | 3 | 6 | 2 | 10 | 5 | 4 | 30 |
| SAQ | 3 | 7 | 2 | 9 | 6 | 3 | 30 |
| Paper VII | 14 | 4 | 10 | 14 | 10 | 8 | 60 |
| MCQ | 7 | 2 | 5 | 7 | 5 | 4 | 30 |
| SAQ | 7 | 2 | 5 | 7 | 5 | 4 | 30 |
| Paper VIII | 17 | 4 | 6 | 6 | 11 | 16 | 60 |
| MCQ | 8 | 2 | 3 | 3 | 6 | 8 | 30 |
| SAQ | 9 | 2 | 3 | 3 | 5 | 8 | 30 |
| Paper IX | | | | | | | 60 |
| MCQ | (30 Q × 1 = 30 marks) | | | | | | 30 |
| SAQ | (6 Q × 5 = 30 marks) | | | | | | 30 |
| Paper X | | | | | | | 60 |
| MCQ | (30 Q × 1 = 30 marks) | | | | | | 30 |
| SAQ | (6 Q × 5 = 30 marks) | | | | | | 30 |

20 marks are allotted for PBQs in each theory paper.

5. **Instructions for question preparation:**

All questions are compulsory.

- MCQs:
 - Should be single response type.
 - Should have four alternates.
 - Should not include 'all of the above' or 'none of the above' alternative.
- SAQs
 - Markings are as shown in the above chart
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).
- PBQs
 - Markings are as shown in the above chart
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).

6. **Students who do not pass in the regular University examinations are subjected to the following rules: (Amended on March 8, 2013)**

- A student who fails in any theory paper(s) and practical subject(s) will appear only in these paper(s)/subject(s) in the compartmental examination(s) to be held afterwards.
- A student must complete all theory papers and practical subjects of I and II MBBS within **four and half years** from the date of admission.
- No Student shall be permitted to join clinical science (5th semester) until he/she has passed all theory papers and practical subjects of pre-clinical sciences.

All requirements of Pre-Clinical Sciences of MBBS program have to be completed within **four and half years** from the date of admission. Failing to do so will lead to **automatic dismissal from the program**.

7. **Criteria to pass University Examinations:**

For a student to be declared pass he/she must obtain:

- a) 50% marks in each theory paper and practical subject in internal assessment.
- b) a minimum of 50% marks in each theory paper and practical subject in the University Examination.

8. **Distinction:**

A student passing the entire examination in the first attempt and securing 80% and above marks shall be awarded pass with distinction in totality.

9. **Grace Marks:**

No grace mark will be awarded in any of the university examinations.

10. **Disciplinary action:** the conduct of examinee, invigilators and examiners shall be governed by the disciplinary rules as laid down by the University.

Guidelines for paper setting

Pre-Clinical Science

Year – 1

Paper- I Basic concepts, Genetics, Immune system and Immunology

| Section | Type of question | Number of questions | Mark distributions | Time allocation |
|---------|---------------------------------|---------------------|--------------------|------------------------|
| A | MCQ (Multiple choice questions) | 30 | 30 (30Q×1mark) | 30 minutes |
| B | SAQ (Short answer questions) | 6 | 30 marks (6Q) | 2 hours and 30 minutes |
| C | PBQ (Problem based questions) | 2 | 20 (2Q×10 mark) | |

| I MBBS University Examination | | | | | | | |
|-------------------------------|---------|--------------|--------------|-----------|--------------|------------|-------------|
| Paper I | Anatomy | Biochemistry | Microbiology | Pathology | Pharmacology | Physiology | Total marks |
| MCQ | 7 | 6 | 5 | 4 | 5 | 3 | 30 |
| SAQ | 8 | 5 | 4 | 4 | 5 | 4 | 30 |
| PBQ | 2 | | | | | | 20 |

Instructions:

- All questions are compulsory.
- MCQs:
 - Should be single response type.
 - Should have four alternates.
 - Should not include 'all of the above' or 'none of the above'.
- SAQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).
- PBQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).

Model question

**Kathmandu University
2012**

Level : MBBS

Exam : I MBBS

Paper : I Basic Concepts, Genetics, Immune System and Immunology

Regn. No. _____

Roll No.: _____

Time: 30 minutes

Date: _____

Full mark: 30

**Section 'A'
Multiple Choice Questions**

Choose the most appropriate answer and write corresponding alphabet in the box:

Anatomy (7×1=7 marks)

1. Histamine is produced by:
 - a. Pigment cells
 - b. Mast cells
 - c. Macrophages
 - d. Plasma cells☐
2. Chorionic plate on the foetal side composed of the following structures **except**:
 - a. Stratum spongiosum of decidua basalis
 - b. Primary mesoderm
 - c. Cytotrophoblast
 - d. Syncytiotrophoblast☐
3. Following are the examples of sesamoid bones **except**:
 - a. Scaphoid
 - b. Pisiform
 - c. Patella
 - d. Fabella☐
4. Splenic artery is the branch of:
 - a. Ceolic trunk
 - b. Left gastric artery
 - c. Right gastric artery
 - d. Abdominal aorta☐
5. Exchange of segments between the non-homologous chromosomes is known as:
 - a. Isochromosome
 - b. Inversion
 - c. Ring chromosome
 - d. Translocation☐
6. Followings are the examples of autosomal recessive traits **except**:
 - a. Acatalasia
 - b. Huntington's chorea
 - c. Hurler's syndrome
 - d. Galactosemia☐

7. Followings are the secondary lymphoid organs **except**:
- Spleen
 - Thymus
 - Lymph nodes
 - MALT

☐

Biochemistry (6×1=6 marks)

1. The second step in polymerase chain reaction(PCR) is:
- Denaturation
 - Primer extension
 - Annealing
 - Cooling
2. Lactate dehydrogenase is:
- Isonzyme
 - Coenzyme
 - Antienzyme
 - Zymogen
3. "All enzymes are not proteins" this statement is justified by:
- All enzymes do not follow the Michaelis Menten hypothesis.
 - RNA acts as ribozymes
 - Antibodies take a part in the catalysis of many reactions
 - Metals are involved in attachment to enzymes and catalysis.
4. Which of the following is a phospholipid?
- Triglyceride
 - Sphingomyelin
 - Prostaglandin
 - Oleic acid
5. Vitamin A is stored mainly as retinol esters in:
- Kidney
 - Muscle
 - Liver
 - Retina
6. Amylase and amylopectin are constituent of:
- Starch
 - Cellulose
 - Glycogen
 - Pectin

☐☐☐☐☐☐

Microbiology (5×1=5 marks)

1. Which one of the following is active natural immunity?
- Induced by vaccination
 - Transplacental passage of antibody
 - Followed by clinical and subclinical infection
 - Injection of preformed antibodies

☐

2. All of following protect the body surface **except**:
- Skin
 - Mucus
 - Salivary amylase
 - Gastric acid
3. Which of the following immunoglobulin passes through the placenta?
- IgG
 - IgM
 - IgA
 - IgE
4. The classical and alternative pathways meet at complement component:
- C4
 - C4b
 - C3
 - C5
5. Immunological unresponsiveness to self antigen is called:
- Tolerance
 - Anergy
 - ADCC
 - Memory

Pathology (4 × 1 = 4 marks)

1. The first manifestation of cell injury is:
- Cell swelling
 - Mitochondrial damage
 - Endoplasmic reticulum dilation
 - Nuclear disintegration
2. Decompression sickness is:
- Thromboembolism
 - Air embolism
 - Fat embolism
 - Amniotic fluid embolism
3. Lines of Zahn is seen in:
- Thrombus
 - Tumor
 - Pathologic calcification
 - Infarction
4. Grading of tumor means:
- Metastasis of cancer
 - Size of tumor
 - Depth of invasion
 - Differentiation of cancer cells

Pharmacology (5 × 1 = 5 marks)

1. Nephrotoxicity is the major toxic effect of :
 - a. Erythromycin
 - b. Gentamicin
 - c. Doxycycline
 - d. Ciprofloxacin☐
2. Which antibiotic is primarily bacteriostatic but becomes bactericidal at higher concentrations:
 - a. Erythromycin
 - b. Tetracycline
 - c. Chloramphenicol
 - d. Ampicillin☐
3. Essential drugs are;
 - a. Life saving drugs
 - b. Drugs that meet the priority health care needs of the population
 - c. Drugs that must be present in the emergency bag of a doctor
 - d. Drugs that are listed in the pharmacopoeia of the country☐
4. Receptor agonists possess:
 - a. Affinity but no intrinsic activity
 - b. Intrinsic activity but no affinity
 - c. Affinity and intrinsic activity with a positive sign
 - d. Affinity and intrinsic activity with a negative sign☐
5. Which of the following is a type B adverse drug reaction?
 - a. Side effect
 - b. Toxic effect
 - c. Idiosyncrasy
 - d. Physical dependence☐

Physiology (3 × 1 = 3 marks)

1. The event that correspond to repolarization phase of an action potential in a cell is.
 - a. Opening of an inactivation gate of voltage gated sodium channel and closure of K⁺ channel.
 - b. Closure of an inactivation gate of voltage gated sodium channel and opening of K⁺ channel.
 - c. Opening of an activation gate of voltage gated sodium channel and closure of K⁺ channel.
 - d. Closure of an activation gate of voltage gated sodium channel and closure of K⁺ channel.☐
2. The movement of particle across the cell after an endocytosis at the luminal membrane is a transport known as,
 - a. Paracellular transport
 - b. Facilitated diffusion
 - c. Transcytosis
 - d. Solvent drag☐

3. Cytoskeleton of the internal structure of cilia and flagella is,
- a. Intermediate filament
 - b. Microfilament
 - c. Microtubule
 - d. Keratin



Model question

**Kathmandu University
2012**

Level : MBBS

Exam : I MBBS

Paper : I Basic Concepts, Genetics, Immune System and Immunology

Time: 2 hrs. 30 mins.

Marks : 50

Date:

INSTRUCTION TO THE CANDIDATE

- *Write brief, relevant and legible answers.*
- *Illustrate your answer with well labeled diagrams wherever required.*
- *All questions are compulsory.*

Section 'B' Short Answer Questions

Anatomy (8 marks)

1. a. Define joint and describe the synovial joint with their examples. [1+3=4]
b. Classify epithelia. Give differences between transitional epithelium and non keratinized stratified squamous epithelium. [2+2=4]

Biochemistry (5 marks)

2. a. What are mutations? [1]
b. Briefly describe different types and consequences of mutations. [2+2=4]

Microbiology (4 marks)

3. Write a note on primary and secondary immune response. [2+2=4]

Pathology (4 marks)

4. Write briefly on septic shock. [4]

Pharmacology (5 marks)

5. a. Comment on drug interaction between Amphotericin B and Flucytosine. [3]
b. Explain in brief G protein coupled receptors [2]

Physiology (4 marks)

6. Describe active transport across the cell membrane with the help of appropriate diagrams. [4]

Section 'C'
Problem Base Questions

Problem- I

7. A 10 month old baby had recurrent chest infection since birth. He presented with development of rashes over whole of his body. On enquiry by an enthusiastic pediatrician, it was revealed that the baby had recurrent seizures and tetany of muscles related to severe hypocalcaemia. The doctor counseled that he has chicken pox due to viral infection and the baby is most likely susceptible to such infections since birth due to primary immune suppression. Investigation revealed that he has Digeorge's Syndrome.
- a) Describe in brief the development of thymus and its aberration in Digeorge's syndrome. [3]
 - b) Function of thymus in immunity development. [3]
 - c) List various investigation modalities available for the diagnosis of genetic disease. [4]

Problem- II

8. A 40 years old male presented to the Emergency department, unconscious, sweaty, flushed with a large infected wound in the right leg extending from the thigh to the lower leg. His vital were BP: 50/30 mmHg, Pulse: thready, 130/min, Temperature: 104° F, RR: 25/min. History revealed that he had injury while ploughing field 1 weeks back and did not have had any medical consultations for it. The physician in the emergency quickly opened veins with two large bore cannula with IV fluids, sent blood for investigation, catheterized and started on broad spectrum antibiotics intravenously.
- a) What is the possible diagnosis? Explain the pathophysiology of this case. [4]
 - b) Mention few salient differentiating points between Gram positive and Gram negative bacteria. [3]
 - c) What are the different routes of drug administration? Mention the importance of each route with an example. [3]

Guidelines for paper setting

Pre-Clinical Science

Year-1

Paper-II Autonomic Nervous system, Musculoskeletal system and Integumentary system

| Section | Type of question | Number of questions | Mark distributions | Time allocation |
|---------|---------------------------------|---------------------|--------------------|------------------------|
| A | MCQ (Multiple choice questions) | 30 | 30 (30Q×1mark) | 30 minutes |
| B | SAQ (Short answer questions) | 6 | 30 marks (6Q) | 2 hours and 30 minutes |
| C | PBQ (Problem based questions) | 2 | 20 (2Q×10 mark) | |

Marks distribution according to weightage of classes

| | No of Q | Anatomy | Biochemistry | Microbiology | Pathology | Pharmacology | Physiology | Total marks |
|-----|---------|---------|--------------|--------------|-----------|--------------|------------|-------------|
| MCQ | 30 | 9 | 3 | 3 | 4 | 8 | 3 | 30 |
| SAQ | 6 | 9 | 3 | 3 | 3 | 9 | 3 | 30 |
| PBQ | 2 | | | | | | | 20 |

Instructions:

- All questions are compulsory.
- MCQs:
 - Should be single response type.
 - Should have four alternates.
 - Should not include 'all of the above' or 'none of the above'.
- SAQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).
- PBQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).

Model question

**Kathmandu University
2012**

Level : MBBS

Exam : I MBBS

Paper: II Autonomic Nervous system, Musculoskeletal system and Integumentary system

Regn. No. _____

Roll No.: _____

Time: 30 minutes

Date: _____

Full mark: 30

**Section 'A'
Multiple Choice Questions**

Choose the most appropriate answer and write corresponding alphabet in the box:

Anatomy (9 × 1 = 9 marks)

1. Sural nerve is the branch of:
 - a. Femoral nerve
 - b. Common peroneal nerve
 - c. Tibial nerve
 - d. Medial planter nerve☐
2. Following structures merges from the lower border of piriformis **except**:
 - a. Sciatic nerve
 - b. Posterior cutaneous nerve of thigh
 - c. Nerve to obturator internus
 - d. Nerve supplying gluteus medius and minimus☐
3. Flexor digitorum superficialis is supplied by:
 - a. Anterior interosseous nerve
 - b. Ulnar nerve
 - c. Radial nerve
 - d. Musculocutaneous nerve☐
4. In scapular region, radial nerve is the content of:
 - a. Quadrangular space
 - b. Upper triangular space
 - c. Lower triangular space
 - d. Lower quadrangular space☐
5. Middle genicular nerve is given off by:
 - a. Common peroneal nerve
 - b. Tibial nerve
 - c. Sciatic nerve
 - d. Femoral nerve☐
6. Adductor hiatus is the opening in which of the following muscle:
 - a. Adductor longus
 - b. Adductor brevis
 - c. Pectineus
 - d. Adductor magnus☐

7. Chief extensor muscle of the gluteal region is:
 - a. Piriformis
 - b. Gluteal medius
 - c. Gluteal minimus
 - d. Gluteal maximus
8. Following are the branches of the 3rd part of axillary artery **except**:
 - a. Lateral thoracic artery
 - b. Anterior circumflex humeral artery
 - c. Posterior circumflex humeral artery
 - d. Subscapular artery
9. The site of injury in Erb's paralysis is:
 - a. Upper trunk of brachial plexus
 - b. Lower trunk of brachial plexus
 - c. Anterior division of lower trunk
 - d. Posterior cord of brachial plexus

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Biochemistry (3 × 1 = 3 marks)

1. Sarcomer is defined as:
 - a. Length between two Z lines
 - b. Length between two M lines
 - c. Gap between two H zones
 - d. Gap between I and H zones
2. Binding of ATP with head of Myosin causes:
 - a. Increase affinity with Actin
 - b. Decrease affinity with Actin
 - c. No change in affinity with Actin
 - d. Changes conformation of Myosin head
3. Concentration of calcium in myoplasma is:
 - a. 10^{-3}
 - b. 10^{-4}
 - c. 10^{-5}
 - d. 10^{-7}

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Microbiology (3 × 1 = 3 marks)

1. Dermatophytic infection of the beard
 - a. Tinea Gladiatorum
 - b. Tinea Barbae
 - c. Tinea Capitis
 - d. Tinea Cruis
2. Staphylococcus aureus, one cause of bacterial arthritis is confirmed by:
 - a. Coagulase test
 - b. Catalase test
 - c. Oxidase test
 - d. Urease test

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3. The following laboratory technique is useful in detecting leprosy:
- Ziehl-Neelsen stain of sputum
 - Ziehl-Neelsen stain of skin-slit smear
 - Culture in Lowenstein-Jensen media
 - Serodiagnosis

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Pathology (4 × 1 = 4 marks)

1. In pyogenic osteomyelitis, involvement of metaphysis is typically seen in:
- Neonate
 - Children
 - Both neonate and children
 - Adults
2. Which of the following local is most common in osteosarcoma?
- Around knee
 - Hip
 - Shoulder
 - Mandible
3. Which of the following is primarily degenerating disease of articular cartilage?
- Rheumatoid arthritis
 - Gouty arthritis
 - Osteoarthritis
 - Ankylosis spondylitis
4. Herringbone pattern is seen in:
- Lipoma
 - Fibrosarcoma
 - Rhabdomyosarcoma
 - Fibroma

☐☐☐☐

Pharmacology (8 × 1 = 8 marks)

1. Which of the following is the β blocker with additional vasodilatory effect?
- Propanolol
 - Nadolol
 - Pindolol
 - Carvedilol
2. Which of the following α adrenergic blocking drugs show first dose phenomenon?
- Yohimbine
 - Phentolamine
 - Tolazoline
 - Prazosin
3. The drug of choice for the treatment of organophosphorus poisoning:
- Adrenaline
 - Atropine
 - Dopamine
 - Dobutamine

☐☐☐

4. The drug of choice in malignant hyperthermia is:
 - a. Dantrolene
 - b. Tizanidine
 - c. Baclofen
 - d. Gabapentin☐
5. Which of the following is the depolarizing neuromuscular blocking agent?
 - a. Atracurium
 - b. Mivacurium
 - c. Succinylcholine
 - d. Dantrolene☐
6. Which of the following is the directly acting neuromuscular blocking agent?
 - a. Atracurium
 - b. Decamethonium
 - c. Succinylcholine
 - d. Dantrolene☐
7. N-acetyl cysteine is beneficial in acute paracetamol poisoning because:
 - a. It reacts with paracetamol to form a nontoxic metabolite
 - b. It inhibits generation of the toxic metabolite of Paracetamol
 - c. It is a free radical scavenger
 - d. It replenishes hepatic glutathione which in turn binds the toxic metabolite of Paracetamol☐
8. In which one of the following conditions would Aspirin be contraindicated?
 - a. Myalgia
 - b. Peptic ulcer
 - c. Fever
 - d. Myocardial infarction☐

Physiology (3 × 1 = 3 marks)

1. Action potential in the skeletal muscle fiber :
 - a. Develops at the motor end plate
 - b. Causes influx of calcium at sarcolemma
 - c. Spreads to sarcomeres via T – tubules
 - d. Can Be Generated On Electric Stimulation Of Its Sarcolemma☐
2. Regarding the heads of the myosin filament in a sarcomere of a skeletal muscle fiber, all are correct **except**:
 - a. Have Binding Sites For Actin
 - b. Has ATPase Activity
 - c. Have Binding Site For ATP
 - d. Can Only Bind With Single Thin Filament☐
3. During tetanic contraction of a skeletal muscle (**choose the wrong statement**):
 - a. Tension developed by a muscle is greater than during twitch
 - b. The muscle does not relax
 - c. Actin filament makes cross bridges with the opposite side of myosin filament
 - d. Myoplasmic concentration remains high☐

Model question

**Kathmandu University
2012**

Level : MBBS

Exam : I MBBS

Paper: II Autonomic Nervous system, Musculoskeletal system and Integumentary system

Time: 2 hrs. 30 min.

Marks: 30

Date:

INSTRUCTION TO THE CANDIDATE

- *Write brief, relevant and legible answers.*
- *Illustrate your answer with well labeled diagrams wherever required.*
- *All questions are compulsory.*

Section 'B' Short Answer Questions

Anatomy (9 marks)

1. a. Enumerate the muscles causing movements of Knee joint with their nerve supply. [2+3=5]
b. Give a brief description on formation of median nerve with applied anatomy. [2+2=4]

Biochemistry (3 marks)

2. Sliding theory of skeletal muscle contraction. [3]

Microbiology (3 marks)

3. Write briefly on viral skin infection. [3]

Pathology (3 marks)

4. Describe the pathogenesis of lepromatous leprosy. [3]

Pharmacology (9 marks)

5. a. Write down the important therapeutic uses and contraindications of Adrenaline. [2+2=4]
b. List anticholinesterase. Mention its important therapeutic uses. [2+3=5]

Physiology (3 marks)

6. Describe the mechanism of contraction and relaxation in a smooth muscle. [3]

Section 'C'
Problem Base Questions

Problem I

7. Meena, a 15 years old girl from Bolde was found to have swelling in her back at the lumbar region for last few months. When she was examined and investigated at DHKUTH, she was diagnosed as a case of Tuberculous spine (Pott's spine). When she was further investigated, she was found to be sputum smear positive pulmonary tuberculosis as well. She was immediately put on antitubercular therapy and kept in follow-up.
- a. Write shortly on Pott's spine with particular reference to this case. [3]
 - b. Mention the different regimen of antitubercular drugs. [4]
 - c. How does a case of tuberculous osteomyelitis differ from chronic pyogenic osteomyelitis? [3]

Problem II

8. Mr. Kancha Majhi, a 48 years old fisherman from Sipaghat woke up one day and found that he had severe pain at the base of his right great toe. He also felt feverish and went to the Bahunepati Health Center for check-up. It was a doctor-visit day in the center and the visiting doctor Chandra examined him. He saw that the right metatarsophalangeal joint was swollen, inflamed and painful. Since the Health Center also had basic laboratory facilities, Dr. Chandra sent his blood for serum uric acid. The test revealed that uric acid level was raised to 9.5mg/dl. Dr. Chandra thought that this was acute gouty arthritis and prescribed capsule Indomethacin and tablet Famotidine to Kancha. Dr. Chandra advised also not to drink and reduce dietary intake of meat and fish. He also advised the Health Center incharge Mr. Gautam to start tablet Allopurinol after a month to prevent from further acute attacks.
- a. Write briefly on metatarsophalangeal joint. [4]
 - b. Describe the mechanism of pain of great toe. [3]
 - c. What biochemical investigations would you advice him and reason behind it? [3]

Guidelines for paper setting

Annex 1 - C

Pre-Clinical Science

Year-1

Paper III Haemopoietic system and Cardiovascular system

| Section | Type of question | Number of questions | Mark distributions | Time allocation |
|---------|---------------------------------|---------------------|--------------------|------------------------|
| A | MCQ (Multiple choice questions) | 30 | 30 (30Q×1 mark) | 30 minutes |
| B | SAQ (Short answer questions) | 6 | 30 marks (6Q) | 2 hours and 30 minutes |
| C | PBQ (Problem based questions) | 2 | 20 (2Q×10 mark) | |

Marks distribution according to weightage of classes

| | No of Q | Anatomy | Biochemistry | Microbiology | Pathology | Pharmacology | Physiology | Total marks |
|------|---------|---------|--------------|--------------|-----------|--------------|------------|-------------|
| MCQs | 30 | 2 | 6 | 4 | 6 | 6 | 6 | 30 |
| SAQs | 6 | 2 | 7 | 3 | 7 | 5 | 6 | 30 |
| PBQ | 2 | | | | | | | 20 |

Instructions:

- All questions are compulsory.
- MCQs:
 - Should be single response type.
 - Should have four alternates.
 - Should not include 'all of the above' or 'none of the above'.
- SAQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).
- PBQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).

Model question

Kathmandu University
2012

Level : MBBS

Exam : I MBBS

Paper : III Haemopoietic and Cardiovascular system

Regn. No. _____

Roll No.: _____

Time: 30 minutes

Date: _____

Full mark: 30

Section 'A' **Multiple Choice Questions**

Choose the most appropriate answer and write corresponding alphabet in the box:

Anatomy (2×1= 2 marks)

1. Superior venacava is formed by the union of :
 - a) Internal jugular vein and subclavian vein
 - b) External jugular and subclavian vein
 - c) Right and left brachiocephalic vein
 - d) Right subclavian and left brachiocephalic vein
2. Hormone erythropoietin is produced in the:
 - a) Liver
 - b) Spleen
 - c) Thymus
 - d) Kidney

☐☐

Biochemistry (6×1=6 marks)

1. The Ecosanoid PGI₂ is also known as:
 - a) Prostaglandin
 - b) Prostacyclin
 - c) Leukotrien
 - d) Thromboxane
2. Which of the following is the inhibitor of fatty acid synthesis?
 - a) Free fatty acid
 - b) Citrate
 - c) Malonyl CoA
 - d) Pyruvate
3. How many acetyl CoA are required for the synthesis of cholesterol?
 - a) 12
 - b) 14
 - c) 16
 - d) 18

☐☐☐

4. Among them, which is oncofetal antigen?
 - a) Prostatic specific antigen(PSA)
 - b) Alpha-Fetoprotein(AFP)
 - c) Alkaline phosphatase(ALP)
 - d) Human chorionic gonadotropin(HCG)☐

5. The compound that facilitates the release of O₂ from oxyhemoglobin:
 - a) 2,3-BPG
 - b) H⁺
 - c) Cl⁻
 - d) HCO₃⁺☐

6. Which of the following reaction utilizes both NADP and NAD as co-factor?
 - a) Nitric oxide synthase
 - b) Glutamate dehydrogenase
 - c) Aspartate dehydrogenase
 - d) Succinate dehydrogenase☐

Microbiology (4×1=4 marks)

1. A test that that indicate recent Streptococcus pyogenes infection is:
 - a) Antistreptolysin S antibody titer
 - b) PCR for antibodies against M protein
 - c) Antistreptolysin O antibody titer
 - d) Antihyaluronic acid antibody titer☐

2. The most common cause of infective endocarditis is:
 - a) Viridans streptococci
 - b) Enterococci
 - c) Staphylococcus epidermidis
 - d) Candida albicans☐

3. Which of the following strongly suggests infective endocarditis?
 - a) Repeatedly positive blood culture with evidence of other site of infection.
 - b) Repeatedly positive blood culture with no other site of infection.
 - c) Negative blood culture with no infection.
 - d) Single positive blood culture with other site infection☐

4. Fungus infecting RE system:
 - a) Blastomycosis
 - b) Histoplasmosis
 - c) Chromomycosis
 - d) Coccidioidomycosis☐

Pathology (6×1=6 marks)

1. Which of the following is **not** present in Hereditary Spherocytosis?
 - a) Splenomegaly
 - b) Jaundice
 - c) Decreased osmotic fragility
 - d) Reticulocytosis☐

2. Which of the following is **not** seen in sickle cell anemia?
 - a) Vaso-occlusive crisis
 - b) Particular predisposition to streptococcal osteomyelitis
 - c) Autosplenectomy
 - d) Stroke☐

3. Which of the following is seen in hemophilia A?
 - a) Prolonged prothrombin time (PT)
 - b) Prolonged partial thromboplastin time (PTT)
 - c) Prolonged bleeding time (BT)
 - d) Decreased platelet count☐

4. Which of the following is the commonest cause of right ventricular failure?
 - a) Pulmonary stenosis
 - b) Tricuspid stenosis
 - c) Left ventricular failure
 - d) Pulmonary hypertension☐

5. Which of the following is correct about acute rheumatic carditis?
 - a) It is caused by infection of cardiac valves by *Streptococci*
 - b) It is more common in third world countries
 - c) Perivalvular ring abscesses are present in the heart
 - d) Septic emboli are present in the kidneys☐

6. The most frequent cause of myocardial infarction is occlusion of a major coronary artery by:
 - a) Dissection
 - b) Embolism
 - c) Thrombosis
 - d) Spasm☐

Pharmacology (6×1=6 marks)

1. Before treating megaloblastic anaemia with only folic acid the patient has to be tested for any deficiency in vitamin B₁₂ because
 - a) Administration of folic acid would further reduce the levels of vitamin B₁₂.
 - b) Administration of folic acid might cure the anaemia whereas peripheral neuropathy due to lack of vitamin B₁₂ might progress.
 - c) In such a case only the combined administration of the two compounds would be able to restore normal erythropoiesis.
 - d) Only the presence of sufficient amounts of vitamin B₁₂ ensures adequate absorption of folic acid.☐

2. Which of the following drugs can be used to cure *P. vivax* malaria by eliminating the hypnozoites residing in the liver?
 - a) Artemether
 - b) Chloroquine
 - c) Primaquine
 - d) Proguanil☐

3. Which developmental stage of the malaria parasites is the target of all drugs used against acute fever attacks?
 - a) Blood schizonts
 - b) Hypnozoites
 - c) Liver schizonts
 - d) Sporozoites☐

4. Which of the following drugs are useful in treating tachyarrhythmias caused by increased sympathetic activity?
 - a) Class I
 - b) Class II
 - c) Class III
 - d) Class IV☐

5. The therapeutic benefit of Propranolol in angina is believed to be primarily due to:
 - a) Reduced production of catecholamines
 - b) Increased sensitivity to catecholamines
 - c) Increased peripheral resistance
 - d) Decreased requirement of myocardial oxygen☐

6. The cellular mechanism of action of digoxin is:
 - a) Inhibition of cAMP synthesis
 - b) Inhibition of β -adrenergic stimulation
 - c) Inhibition of ATP degradation
 - d) Inhibition of Na^+K^+ ATPase☐

Physiology (6×1=6 marks)

1. Using direct Ficks principle for measurement of cardiac output, it is necessary to:
 - a) Take a sample of arterial blood from the aorta
 - b) Take a sample of venous blood from the pulmonary artery
 - c) Determine Oxygen concentration in the inspired air
 - d) Record the heart rate☐

2. Cardiac diastolic murmur can be heard in
 - a) Pulmonary stenosis
 - b) Tricuspid stenosis
 - c) Aortic stenosis
 - d) Mitral regurgitation☐

3. Stimulation of arterial baroreceptors leads to:
 - a) Decrease in heart rate & increase in blood pressure
 - b) Decrease in heart rate & blood pressure
 - c) Increase in heart rate & blood pressure
 - d) Increase in heart rate & decrease in blood pressure☐

4. At a constant pressure gradient across the ends of a blood vessel, volume flow through the vessel is proportional to :
 - a) $\sqrt{\text{Radius (R)}}$
 - b) $1/\text{R}^2$
 - c) $1/\text{R}^4$
 - d) R^4☐

5. Circulatory shock is characterized by:
- a) External hemorrhage
 - b) Fall in arterial blood pressure
 - c) Inadequate tissue perfusion
 - d) CNS depression
6. At birth a new born baby with "O" Rh negative group, has
- a) A or B antigens
 - b) Absence of antibodies against A or B antigen
 - c) D antigen
 - d) Antibodies against D antigen



Model question

**Kathmandu University
2012**

Level : MBBS

Exam : I MBBS

Paper : III Haemopoietic and Cardiovascular system

Time: 2 hrs. 30 min.

Marks: 50

Date:

INSTRUCTION TO THE CANDIDATE

- Write brief, relevant and legible answers.
- Illustrate your answer with well labeled diagrams wherever required.
- All questions are compulsory.

Section 'B' Short Answer Questions

Anatomy (2 marks)

1. Describe lymphatic and vascular supply of a lymph node. [2]

Biochemistry (7 marks)

2. a) What are lipoproteins? Describe schematically the very low density lipoprotein (VLDL) metabolism. [1+2=3]
b) Briefly discuss on structure and functions of hemoglobin. [2+2=4]

Microbiology (3 marks)

3. What is acute rheumatic fever and rheumatic heart disease? Enumerate the clinical criteria and laboratory diagnosis of rheumatic fever. [1+2=3]

Pathology (7 marks)

4. a) Mention the modifiable major risk factors of atherosclerosis. [2]
b) Explain the ways ischemic heart disease may present in a patient. [2]
c) Write down causes of neutrophilia, eosinophilia, basophilia, lymphocytosis, and monocytosis. [3]

Pharmacology (5 marks)

5. a) Classify anti-anginal drugs. [3]
b) Mention the mechanism of action and adverse effects of nitrates. [2]

Physiology (6 marks)

2. a) Describe the sequence of events leading to platelet adhesion and aggregation during the formation of platelet plug in an injured vessel. [2]
b) With the help of a flow chart, indicate the clotting pathway that clots the blood drawn in a capillary tube. [2]
c) Draw a labeled diagram showing pressure changes in the left ventricle, left atrium and aorta, during a cardiac cycle. [2]

Section 'C'
Problem Base Questions

Problem I

3. Muna Tamang was diagnosed as a case of disseminated intravascular coagulation (DIC) and treated with platelets concentrate and fresh frozen plasma. She later developed deep vein thrombosis (DVT). It was good that she was diagnosed in time and then Heparin and Warfarin were started. She recovered well and then later discharged without any complications.
- a) Explain with reference to the coagulation pathways, how platelets concentrate and fresh frozen plasma are of use in this case? [3]
 - b) What is the rationale of starting Heparin and Warfarin together in this case? [3]
 - c) Write shortly on disseminated intravascular coagulation. [4]

Problem II

4. Mr. Laxman Chaudhari, 40 years old ranger was posted as an in-charge of a government protected forest near Janakpur. Few months after he started working there, he developed fever. When the fever didn't subside even after couple of days, he went to visit the doctor in a nearby hospital. After listening all the complaints from Laxman, the doctor gave him Paracetamol, Chloroquin and Primaquin tablets and told him that he was suffering from malaria which was very common in the area. The doctor assured him that he would improve within few days.

The condition of Laxman deteriorated day by day. After few days, he visited the hospital OPD again. This time the same doctor thought of empirically starting treatment for typhoid fever with tablet Ofloxacin. The doctor also sent Laxman's blood for *Salmonella* culture. The culture report showed no growth even after 72 hours. After a week, Laxman presented again at the OPD. He had deteriorated considerably. The doctor noticed that Laxman had lost weight, looked very pale and he had hepatomegaly and massive splenomegaly which extended to almost his umbilicus. He admitted Laxman in the hospital and performed bone marrow biopsy and sent for pathological examination. After receiving the report of the bone marrow biopsy, the doctor started injection Amphotericin B. Laxman improved very well after that and was discharged after two weeks.

- a) Explain microstructure of spleen. [4]
- b) Mention the biochemical investigations of this patient. [3]
- c) Describe the life cycle of *L. donovani* with reference to this case. [3]

Guidelines for paper setting

Annex – 1 D

Pre-Clinical Science

Year-1

Paper IV Respiratory system

| Section | Type of question | Number of questions | Mark distributions | Time allocation |
|---------|---------------------------------|---------------------|--------------------|------------------------|
| A | MCQ (Multiple choice questions) | 30 | 30 (30Q×1 mark) | 30 minutes |
| B | SAQ (Short answer questions) | 6 | 30 marks (6Q) | 2 hours and 30 minutes |
| C | PBQ (Problem based questions) | 2 | 20 (2Q×10 mark) | |

Marks distribution according to weightage of classes

| | No. of Q | Anatomy | Biochemistry | Microbiology | Pathology | Pharmacology | Physiology | Total marks |
|-----|----------|---------|--------------|--------------|-----------|--------------|------------|-------------|
| MCQ | 30 | 5 | 3 | 4 | 5 | 7 | 6 | 30 |
| SAQ | 6 | 5 | 3 | 5 | 5 | 7 | 5 | 30 |
| PBQ | 2 | | | | | | | 20 |

Instructions:

- All questions are compulsory.
- MCQs:
 - Should be single response type.
 - Should have four alternates.
 - Should not include 'all of the above' or 'none of the above'.
- SAQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).
- PBQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).

Model questions

Kathmandu University
2012

Level : MBBS

Exam : I MBBS

Paper : IV Respiratory System

Regn. No. _____

Roll No.: _____

Time: 30 minutes

Date: _____

Full mark: 30

Section 'A' Multiple Choice Questions

Choose the most appropriate answer and write corresponding alphabet in the box:

Anatomy (5 × 1 = 5 marks)

1. Lung abscess secondary to aspiration is most often seen in:
 - a. Anterior upper lobe
 - b. Apical upper lobe
 - c. Posterior lower lobe
 - d. Apical lower lobe
2. Trachea begins at the level of :
 - a. Lower border of thyroid cartilage
 - b. Lower border of cricoid cartilage
 - c. Lower border of hyoid
 - d. Fourth cervical vertebra
3. Which is the artery of epistaxis?
 - a. Anterior ethmoidal
 - b. Greater palatine
 - c. Sphenopalatine
 - d. Lesser palatine
4. Which is the only abductor of vocal cords?
 - a. Lateral cricoarytenoid
 - b. Posterior cricoarytenoid
 - c. Oblique arytenoid
 - d. Transverse arytenoids
5. Epithelium of respiratory tract is derived from:
 - a. Ectoderm
 - b. Mesoderm
 - c. Endoderm
 - d. Neural crest

☐☐☐☐☐

Biochemistry (3×1 = 3 marks)

1. Which complex is responsible for ATP synthesis in mitochondrial membrane?
 - a) Complex-II
 - b) Complex- V
 - c) Complex-I
 - d) Complex- IV☐
2. Which of the following is the biological uncoupler?
 - a) Dinitrocresol
 - b) 2,4 dinitrophenol
 - c) Thermogenin
 - d) Trifluorocarbonylcyanide phenylhydrazone☐
3. Which of the following is water soluble antioxidant?
 - a) Tocopherol
 - b) Flavonoids
 - c) β -carotene
 - d) Ascorbic acid☐

Microbiology (4×1 = 4 marks)

1. The causative agent of whooping cough is:
 - a) *Haemophilus*
 - b) *Bordetella*
 - c) *Pneumococcus*
 - d) *Corynebacterium*☐
2. The agent causing pneumonia in HIV infected person is:
 - a) *Pneumocystis carinii*
 - b) *Paragonimus westermani*
 - c) *Cryptococcus*
 - d) *Candida*☐
3. Which bacterial infection can later lead to glomerulonephritis and rheumatic heart disease?
 - a) *Staphylococcus aureus*
 - b) *Pneumococcus*
 - c) *Streptococcus pyogenes*
 - d) *Viridans streptococci*☐
4. Small Gram negative fastidious bacilli causing sinusitis, otitis, meningitis etc and requiring X and V factor for its growth:
 - a) *Bordetella pertussis*
 - b) *Brucella abortis*
 - c) *Haemophilus influenza*
 - d) *Haemophilus ducreyi*☐

Pathology (5×1 = 5 marks)

1. Which of the following is initial focus of primary pulmonary tuberculosis:
 - a) Miliary tubercle
 - b) Cavitation
 - c) Ghon focus
 - d) Pulmonary abscess☐
2. Bronchial carcinoids constitute what percent of lung tumors:
 - a) 20%
 - b) 15%
 - c) 10%
 - d) 5%☐
3. Which of the following is known as association of pneumoconiosis with rheumatoid arthritis?
 - a) Loeffler's syndrome
 - b) Caplan's syndrome
 - c) Goodpasture's syndrome
 - d) Meig's syndrome☐
4. Horner's syndrome is seen with which of the following?
 - a) Bronchioloalveolar carcinoma
 - b) Hilar region cancer
 - c) Scar cancer
 - d) Superior sulcus tumor☐
5. What % of lung cancers develop paraneoplastic syndrome?
 - a) 1-2%
 - b) 3-10%
 - c) 50%
 - d) 100%☐

Pharmacology (7×1=7 marks)

1. Which of the following anti-asthma drugs is most helpful in a severe acute attack?
 - a) Disodium cromoglycate
 - b) Ipratropium bromide
 - c) Montelukast
 - d) Theophylline☐
2. Salbutamol relaxes bronchial smooth muscle by:
 - a) Stimulating alpha2-adrenergic receptors
 - b) Stimulating beta2-adrenergic receptors
 - c) Blocking muscarinic acetylcholine receptors
 - d) Blocking Cys-leukotriene-1 receptors☐

3. Side effects after of long-term administration of prednisolone can include the following **except**:
 - a) Gluconeogenesis with hyperglycaemia
 - b) Sodium retention with hypertension
 - c) Increase in muscle mass
 - d) Sleep disorders☐

4. What is the mechanism of action of isoniazid against mycobacterium tuberculosis?
 - a) Inhibition of bacterial protein synthesis
 - b) Inhibition of cell wall synthesis
 - c) Inhibition of folic acid synthesis
 - d) Inhibition of mycolic acid synthesis☐

5. Choose the one correct statement from the following statements concerning cough:
 - a) Cough must always be treated with an anti-tussive regardless of its cause.
 - b) Codeine is effective in the treatment of unproductive cough.
 - c) Methadone is especially well suited to treat cough in infants.
 - d) Inhibitors of angiotensin II receptor cause cough.☐

6. Which of the following anti-tubercular agent is associated with the development of peripheral neuritis?
 - a) Rifampin
 - b) Ethambutol
 - c) Isoniazid
 - d) Streptomycin☐

7. Which of the following drug causes red urine?
 - a) Riboflavin
 - b) Ciprofloxacin
 - c) Amoxicillin
 - d) Rifampin☐

Physiology (6×1 = 6 marks)

1. Vital capacity:
 - a) Is the maximum volume of air that can be inspired after a maximal expiration
 - b) Provides useful information about the size & development of chest wall.
 - c) Depends on the strength of respiratory muscles.
 - d) Is higher in recumbent than in erect posture.☐

2. Quiet expiration is accompanied by:
 - a) Contraction of internal intercostal muscles.
 - b) Contraction of abdominal muscles.
 - c) Rise in negativity of interpleural pressure
 - d) Rise in alveolar pressure☐

3. Following a complete transection at the junction of medulla oblongata and spinal cord, respiration:
 - a) Is essentially unchanged
 - b) Stops
 - c) Becomes gasping
 - d) Becomes apneustic☐

4. Which of the following is true about partial pressures in the alveolar air:

| PO_2 (mmHg) | PCO_2 (mmHg) |
|------------------|-------------------|
| a) 40 | 100 |
| b) 100 | 40 |
| c) 100 | 46 |
| d) 46 | 100 |

☐

5. Maximum voluntary ventilation in a healthy adult male is:

- a) 50-70 L/min
- b) 70-100 L/min
- c) 90-140 L/min
- d) 150-200 L/min

☐

6. Increase in lung diffusing capacity during exercise is due to increase in

- a) Pulmonary ventilation
- b) Cardiac output
- c) The number of active pulmonary capillaries
- d) Permeability of alveolo-capillary membrane.

☐

Model Question

Kathmandu University
2012

Level : MBBS

Exam : I MBBS

Paper : IV Respiratory System

Time: 2 hrs. 30 min.

Full mark: 50

Date:

INSTRUCTION TO THE CANDIDATE

- Write brief, relevant and legible answers.
- Illustrate your answer with well labeled diagrams wherever required.
- All questions are compulsory.

Section 'B' Short Answer Questions

Anatomy (5 marks)

1. a) Describe the medial surface of left lung with a neat diagram. [2]
a) Explain the histology lungs with labeled diagram. [3]

Biochemistry (3 marks)

2. What is oxidative phosphorylation? Explain chemiosmotic theory. [1+2=3]

Microbiology (5 marks)

3. List out pathogenic organisms with specific disease they cause in respiratory tract. Mention briefly the laboratory diagnosis of tuberculosis. [2+3=5]

Pathology (5 marks)

4. Classify pneumonia. Mention the microscopic features of lobar pneumonia. [3+2=5]

Pharmacology (7 marks)

5. a) Classify the drugs for bronchial asthma. [3]
b) Mention the mechanism of action and adverse effects of Salbutamol. [2+2=4]

Physiology (5)

6. Briefly describe the mechanism of hyperpnea on acute exposure to an altitude of 3500 meters above sea level. How is hyperpnea maintained during acclimatization? [3+2=5]

Section 'C'
Problem Base Questions

Problem I

7. Mr. Krishna, 68 years old male from Banepa, known case of chronic obstructive pulmonary disease (COPD) was admitted in the Hospital with fever, cough with purulent sputum and shortness of breath for previous five days. He was diagnosed as a case of acute exacerbation of COPD with pneumonia, and was being managed with oral antibiotics and prednisolon, salbutamol-ipravent nebulisation and oxygen.
- a) Explain the mechanism of shortness of breath. [3]
 - b) Describe the stages of lobar pneumonia. [4]
 - c) Explain the indications of Oxygen in this patient. [3]

Problem II

8. Kanchi, a 16 years old girl was admitted in the ward with the complaints of fever and cough for previous two weeks. The medical team did a thorough investigation of her and finally diagnosed her to be suffering from pleural effusion, tubercular in origin and managed her in the line of tuberculous pleural effusion.
- a) Write shortly on pleura and give your hypothesis how effusion in pleural cavity can lead to pulmonary symptoms? [2+1=3]
 - b) Explain what would be the pharmacological management in this case? [4]
 - c) How will you diagnose for the presence of AFB in pleural fluid? [3]

Guidelines for paper setting**Pre-Clinical Science****Year-2****Paper: V Gastrointestinal and Hepatobiliary system**

| Section | Type of question | Number of questions | Mark distributions | Time allocation |
|---------|---------------------------------|---------------------|--------------------|------------------------|
| A | MCQ (Multiple choice questions) | 30 | 30 (30Q×1 mark) | 30 minutes |
| B | SAQ (Short answer questions) | 6 | 30 marks (6Q) | 2 hours and 30 minutes |
| C | PBQ (Problem based questions) | 2 | 20 (2Q×10 mark) | |

Marks distribution according to weightage of classes

| | No of Q | Anatomy | Biochemistry | Microbiology | Pathology | Pharmacology | Physiology | Total marks |
|-----|---------|---------|--------------|--------------|-----------|--------------|------------|-------------|
| MCQ | 30 | 6 | 5 | 7 | 6 | 2 | 4 | 30 |
| SAQ | 6 | 6 | 6 | 7 | 6 | 2 | 3 | 30 |
| PBQ | 2 | | | | | | | 20 |

Instructions:

- All questions are compulsory.
- MCQs:
 - Should be single response type.
 - Should have four alternates.
 - Should not include 'all of the above' or 'none of the above'.
- SAQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).
- PBQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).

Model questions

**Kathmandu University
2012**

Level : MBBS

Exam : II MBBS

Paper : V Gastrointestinal and Hepatobiliary system

Regn. No. _____ Roll No.: _____ Time: 30 minutes

Date: _____ Marks: 30

**Section 'A'
Multiple Choice Questions**

Choose the most appropriate answer and write corresponding alphabet in the box:

Anatomy (6 × 1 = 6 marks)

1. Which of the following does not contribute to the formation of the posterior wall of the inguinal canal?
a) Fascia transversalis
b) Conjoint tendon
c) Reflected part of inguinal ligament
d) Lacunar ligament ☐
2. Ligamentum teres is a remnant of:
a) Lesser omentum
b) Ductus venosus
c) Left umbilical vein
d) Left umbilical artery ☐
3. A posteriorly perforating peptic ulcer will most likely produce peritonitis in the following:
a) Greater sac
b) Lesser sac
c) Bare area of liver
d) Morissons pouch ☐
4. Which of the following is not a characteristic feature of Large intestine?
a) Villi
b) Sacculations
c) Taenia coli
d) Appendices epiploicae ☐
5. Peyer's patches are present in
a) Duodenum
b) Jejunum
c) Ileum
d) Transverse colon ☐
6. Cystic artery is a branch of:
a) Right hepatic
b) Left hepatic
c) Coeliac trunk
d) Common hepatic ☐

Biochemistry (5 × 1 = 5 marks)

1. Which is not water soluble dietary fibers.
 - a) Cellulose
 - b) Mucilage
 - c) Gum
 - d) Pectin☐
2. "Edema" is a unique feature of
 - a) Marasmus
 - b) Starvation
 - c) Kwashiorkor
 - d) Obesity☐
3. What is the meaning of "to waste"?
 - a) Starvation
 - b) Marasmus
 - c) Obesity
 - d) Kwashiorkor☐
4. WHO defines obesity as a BMI equal to or more than....kg/m²?
 - a) 18.5
 - b) 24.99
 - c) 29.99
 - d) 39.99☐
5. Metabolic Changes that occur during prolonged fasting (starvation), body spares by.....after immediate depletion of glucose.
 - a) Glycogenolysis
 - b) Gluconeogenesis
 - c) Utilization of ketone bodies
 - d) Fatty acid oxidation☐

Microbiology (7 × 1 = 7 marks)

1. *Escherichia coli* causing bloody diarrhea with hemolytic uremic syndrome is:
 - a) Enteropathogenic *Escherichia coli*
 - b) Enterotoxigenic *Escherichia coli*
 - c) Enterohemorrhagic *Escherichia coli*
 - d) Enteroaggregative *Escherichia coli*☐
2. The infective form of *Entamoeba histolytica* for human to get infection is:
 - a) Binucleate cyst
 - b) Mononucleate cyst
 - c) Quadrinucleate cyst
 - d) Trinucleate cyst☐
3. Rice water stool is found in:
 - a) Salmonellosis
 - b) Shigellosis
 - c) Cholera
 - d) Amoebiasis☐

4. The *Escherichia coli* which causes traveller's diarrhea is:
- Enteropathogenic *Escherichia coli*
 - Enterotoxigenic *Escherichia coli*
 - Enterohaemorrhagic *Escherichia coli*
 - Enteraggregative *Escherichia coli*
5. Liver abscess is caused by:
- Giardia lamblia*
 - Entamoeba coli*
 - Entamoeba histolytica*
 - Balantidium coli*
6. A 28-year-old woman presents with symptoms of jaundice, right upper quadrant pain, and vomiting. She also has elevated ALT. It is determined that she acquired hepatitis A from a picnic where several other adults also became infected. What should be done to protect the family members?
- One dose of HAV immunoglobulin should be administered intramuscularly.
 - No treatment is necessary.
 - A series of three vaccinations should be administered at 0, 1, and 6 months.
 - Alpha interferon should be administered.
 - Household contacts should be quarantined and observed.
7. 33-year-old nurse suffered a needle stick injury. The patient used illicit intravenous drugs. One month later, the nurse develops jaundice. Which of the following findings would implicate hepatitis B as the etiology?
- Positive antihepatitis B surface antibody
 - Positive antihepatitis B-core antibody
 - Positive hepatitis B surface antigen
 - Positive antihepatitis A antibody

Pathology (6 × 1 = 6 marks)

1. The most common clinical presentation of tracheoesophageal fistula is:
- Cough
 - Vomiting
 - Regurgitation
 - Dyspnea
2. Which of the following is NOT caused mainly by *Helicobacter pylori* infection?
- Acute gastritis
 - Chronic gastritis
 - Gastric ulcer
 - Duodenal ulcer
3. Which of the following is not a common feature of Crohn disease?
- Transmural involvement
 - Fistula formation
 - Skip lesion
 - Pseudopolyps

4. Which of the following syndrome is associated with high risk of colon carcinoma
 - a) Juvenile polyposis syndrome
 - b) Adenomatous polyposis syndrome
 - c) Peutz- Jeghers syndrome
 - d) Hyperplastic polyposis syndrome☐

5. Pigment gallstone formation is predisposed by:
 - a) Chronic hemolysis
 - b) Oral contraceptive use
 - c) Gallbladder stasis
 - d) Hyperlipidemia syndromes☐

6. Complete twisting of a loop of bowel about its mesenteric base of attachment:
 - a) Adhesions
 - b) Volvulus
 - c) Hernia
 - d) Intussusception☐

Pharmacology (2 × 1 = 2 marks)

1. The following antiemetic act by blocking D₂ receptor in the CTZ:
 - a) Metoclopramide
 - b) Cisapride
 - c) Chlorpromazine
 - d) Domperidone☐

2. The drug of choice for single dose treatment of oncochocerciasis and strongyloidosis is:
 - a) Ivermectin
 - b) Diethyl carbamazine citrate
 - c) Tetramisole
 - d) Niclosamide☐

Physiology (4 × 1 = 4 marks)

1. During deglutition, swallowing center **does not** initiate:
 - a) Inhibition of respiration
 - b) Adduction of vocal cords
 - c) Primary esophageal peristalsis
 - d) Secondary esophageal peristalsis☐

2. Defecation reflex is
 - a) Is initiated by distension of descending colon
 - b) Is a spinal reflex
 - c) Not under the control of higher centers
 - d) Voluntarily controlled by contraction of internal anal sphincter☐

3. Which of the following statement is **wrong** about smooth muscles of the GIT?
 - a) Can contract without generation of an action potential
 - b) Depolarize on stretching
 - c) Are stimulated by inflammation of the peritonium
 - d) Inhibited by stomatostatin☐

4. Gastric acid secretion is inhibited by
- a) Alcohol
 - b) Histamine
 - c) Intra gastric pH below 3
 - d) Stretching of stomach



Model Question

Kathmandu University
2012

Level : MBBS

Exam : II MBBS

Paper: V Gastrointestinal and Hepatobiliary system

Time: 2 hrs. 30 min.

Full mark: 50

Date:

INSTRUCTION TO THE CANDIDATE

- Write brief, relevant and legible answers.
- Illustrate your answer with well labeled diagrams wherever required.
- All questions are compulsory.

Section 'B' Short Answer Questions

Anatomy (6 marks)

1. a. Describe the interior of 2nd part of duodenum with its applied aspect. [2+1=3]
b. What is portal triad? Draw and labeled the diagram of histology of liver. [1+2=3]

Biochemistry (6 marks)

2. a. Describe the digestion and absorption of disaccharides. [2+2=4]
b. Write the biochemical basis of lactose intolerance? [2]

Microbiology (7 marks)

3. a. List out the pathogenic organisms causing infections of gastrointestinal and hepatobiliary systems. [2+2=4]
b. Mention laboratory diagnosis of enteric fever. [3]

Pathology (6 marks)

4. a. Describe the pathogenesis of acute pancreatitis. [3]
b. Mention the macroscopic features of acute appendicitis. [3]

Pharmacology (2 marks)

5. Mention the mechanism of action of Metronidazole. [2]

Physiology (3 marks)

6. Enumerate the hormones secreted by the duodenum. Name the stimuli which stimulate their secretion. [1+2 = 3]

Section 'C'
Problem Based Questions

Problem I

7. You are a family physician in a small city. Ms. Faye Baker is an 18 year old student who presents to your office with jaundice. She noticed jaundice only today, but had felt ill for one week. At that time she began to feel tired, had a mild fever, anorexia, nausea, joint and muscle aches, and loose stools. Three days ago her urine seemed to be dark. She did not have pruritus, sore throat, vomiting or bleeding and she has been alert. She has had no past history of liver disease, nor has she been exposed to anyone with jaundice. She drinks 4-5 bottles of beer at parties, usually on weekends, and her last drink was 10 days ago. She smokes 1/2 pack/day of cigarettes, but has not inclined to do so since she has been ill. She is taking oral contraceptives but no other medication. She has never undergone surgery and has had no blood transfusions. She attends college and has moved away from home. She has a new boyfriend, who is a musician whom she met at a party. She has not been involved with intravenous drugs. Her father had liver cirrhosis and was a heavy drinker until he died of cancer in the liver. Her mother had gallstones.

Physical Examination

Alert, afebrile, jaundiced 3 spider nevi
No other signs of liver disease
Throat clear
Soft cervical lymph nodes
Chest clear, heart sounds normal, no murmurs
Abdomen soft
Liver slightly enlarged and tender, but soft and smooth
Spleen tip palpable
Joints normal
Otherwise normal
No edema, no bruises

Investigations

Bilirubin 132 $\mu\text{mol/L}$ 2-18 $\mu\text{mol/L}$
AST 2500 U/L < 35 U/L
ALT 3200 U/L < 35 U/L
Alkaline phosphatase 238 U/L 30-120 U/L
Fasting blood glucose 4.9 mmol/L 3.9-6.1 mmol/L
Creatinine 88 $\mu\text{mol/L}$ 50-110 $\mu\text{mol/L}$
HBsAg Positive
IgM anti-HBc Positive
IgM anti-HAV Negative
Mono spot Negative
Ultrasound: Normal except for enlarged spleen

- a) Enumerate the Hepatitis virus. Add a note on HBsAg. [1+2=3]
b) How do you interpret these results? [4]
c) How would you manage this patient and what advice would you give her? [2+1=3]

Problem II

8. Kanchha Tamang, 56 years old male was brought to the nearby hospital emergency with the history of passage of extremely foul smelling sticky black stool for last 5 days. Dr. Singh took a detail history of the patient and then came to know that the patient was a regular smoker and used to get drunken everyday for almost last 15 years. The patient looked pale and icteric and disoriented. His BP was 90/60 mm of Hg, pulse rate was 120/min and was feeble. Dr. Singh sent the stool of the patient for routine tests and occult blood test (which turned out to be positive), blood of the patient for hemoglobin and liver function test. After doing basic resuscitation of the patient, he was also sent for

ultrasonogram of the abdomen which revealed irregularly shrunken liver. The patient was planned for upper GI endoscopy the next day.

- a) What is the possible diagnosis of this case? Explain the microscopic features of it. [3]
- b) Explain with special reference to portal circulation, why this case developed gastrointestinal bleeding. [4]
- c) Explain the physiological basis on pale and icteric of this patient. [3]

Pre-Clinical Science

Year-2

Paper: VI Renal and electrolyte system, Endocrine and metabolism system

| Section | Type of question | Number of questions | Mark distributions | Time allocation |
|---------|---------------------------------|---------------------|--------------------|------------------------|
| A | MCQ (Multiple choice questions) | 30 | 30 (30Q×1mark) | 30 minutes |
| B | SAQ (Short answer questions) | 6 | 30 marks (6Q) | 2 hours and 30 minutes |
| C | PBQ (Problem based questions) | 2 | 20 (2Q×10 mark) | |

Marks distribution according to weightage of classes

| | No of Q | Anatom y | Bioche- mistry | Micro- biology | Pathology | Pharma- cology | Physiology | Total marks |
|-----|---------|----------|----------------|----------------|-----------|----------------|------------|-------------|
| MCQ | 30 | 3 | 6 | 2 | 10 | 5 | 4 | 30 |
| SAQ | 6 | 3 | 7 | 2 | 9 | 6 | 3 | 30 |
| PBQ | 2 | | | | | | | 20 |

Instructions:

- All questions are compulsory.
- MCQs:
 - Should be single response type.
 - Should have four alternates.
 - Should not include 'all of the above' or 'none of the above'.
- SAQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).
- PBQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).

Model questions

**Kathmandu University
2012**

Level : MBBS

Exam : II MBBS

Paper: VI Renal and electrolyte system, Endocrine and metabolism system

Regn. No. _____

Roll No.: _____

Time: 30 minutes

Date: _____

Full mark: 30

**Section 'A'
Multiple Choice Questions**

Choose the most appropriate answer and write corresponding alphabet in the box:

Anatomy (3 × 1 = 3 marks)

1. Fascia of Gerota is:
a) True capsule
b) Renal fascia
c) Fatty capsule
d) Thoracolumbar fascia
2. The left renal vein:
a) Drains into inferior vena cava
b) Smaller than the right renal vein
c) Lies behind the abdominal aorta
d) Right gonadal vein drains into it
3. Which of the following organ has portal blood supply?
a) Pancreas
b) Pituitary
c) Bone Marrow
d) Suprarenal gland

☐☐☐

Biochemistry (6 × 1 = 6 marks)

1. Which one of the following statements is correct?
a) Valine belongs among branched chain amino acids
b) Serine contains thiol group in its side chain
c) Glutamate belongs among essential amino acids
d) Tryptophan is a precursor of catecholamines
2. Creatinine can be determined by:
a) DAM method
b) Zak's method
c) Jaffe's method
d) Henry et al method

☐☐

3. A tumor in the adrenal zona glomerulosa can cause hypersecretion of hormones produced in that region. Which of the following might you expect to find in a patient with such a tumor:
- a) Increased blood sodium levels
 - b) Increased blood glucose levels
 - c) Decreased blood calcium levels
 - d) Increased dehydration
4. There are several types of cells in the anterior pituitary. which ones secrete growth Hormone?
- a) Mammatropes
 - b) Gonadotropes
 - c) Corticotropes
 - d) Somatotropes
5. Drinking alcoholic beverages on hot days is not safe because alcohol inhibits the release of _____ which normally helps to conserve water during dehydration.
- a) Antidiuretic hormone
 - b) Oxytocin
 - c) Thyroxine
 - d) Triiodothyroxine
6. Choose the statement about steroid hormones that is incorrect..
- a) Steroids are lipids with complex ring structures.
 - b) Steroids can pass through their target cell membrane and interact with receptors in the nucleus.
 - c) Steroids employ first and second messengers that amplify the cellular response.
 - d) The estrogen and testosterone are examples of steroid hormones.

Microbiology (2 × 1 = 2 marks)

1. Commonest cause of urinary tract infection in female is:
- a) *Escherichia coli*
 - b) *Pseudomonas aeruginosa*
 - c) *Staphylococcus aureus*
 - d) *Streptococcus faecalis*
2. Post-streptococcal Glomerulonephritis occurs following infection due to:
- a) *Streptococcus pneumoniae*
 - b) Group A Beta-Hemolytic streptococci
 - c) Viridans streptococci
 - d) *Streptococcus faecalis*

Pathology (10 × 1 = 10 marks)

1. Subepithelial electron dense deposits having the appearance of "humps" is seen in
- a) PSGN
 - b) FSGS
 - c) Membranous nephropathy
 - d) IgA nephropathy

2. In IgA Nephropathy IgA deposits are mainly seen in
a) Glomerular basement membrane
b) Mesangium
c) Subepithelium
d) Subendothelium ☐
3. Most common cause of nephrotic syndrome in adults is
a) FSGS
b) Minimal change disease
c) Membranous glomerulopathy
d) MPGN ☐
4. In Thin basement membrane disease there is defect in
a) Type I collagen
b) Type II collagen
c) Type III collagen
d) Type IV collagen ☐
5. Most common cause of recurrent gross hematuria is
a) Transitional cell carcinoma of bladder
b) Renal cell carcinoma
c) Post streptococcal glomerulonephritis
d) IgA Nephropathy ☐
6. Type 1 Diabetes mellitus is
a) Due to immunological destruction of β cells by T lymphocytes
b) Due to insulin resistance
c) Caused by β cells dysfunction
d) Associated commonly with hyperosmolar coma ☐
7. In case of impaired glucose tolerance test, the fasting blood glucose level is in between:
a) >126 mg/dl and <140 mg/dl
b) >140 mg/dl and <200 mg/dl
c) >110 mg/dl and <126 mg/dl
d) >70 mg/dl and <110 mg/dl ☐
8. Diabetes insipidus is associated with
a) Hyperkalemia
b) Hyponatremia
c) Hypernatremia
d) Hypokalemia ☐
9. In MEN – 1 syndrome which of the following organ is not involved?
a) Pituitary
b) Pineal
c) Pancreas
d) Parathyroid ☐

10. Twenty four hour urinary VMA is used to measure for the diagnosis of:
- a) Pheochromocytoma
 - b) Adrenocortical carcinoma
 - c) Pituitary adenoma
 - d) Craniopharyngioma

☐

Pharmacology (5 × 1 = 5 marks)

1. Which one of the following diuretics is effective in severe renal failure?
- a) Furosemide
 - b) Spiranolactone
 - c) Hydrochlorothiazide
 - d) Acetazolamide
2. Selective V2 receptor agonist useful for the treatment of central diabetes insipidus is :
- a) Arginine Vasopressin
 - b) Desmopressin
 - c) Lypressin
 - d) Terlipressin
3. One of the following diuretics doesn't require its presence in the tubular lumen for its pharmacological effects –
- a) Thiazide diuretics
 - b) Loop diuretics
 - c) Carbonic anhydrase inhibitors
 - d) Aldosterone antagonists
4. Which of the following oral antidiabetic agent acts through Peroxisome Proliferator and Activated Receptor Gamma (PPAR γ) Receptors and enhances transcription of insulin responsive genes?
- a) Thiazolidinediones
 - b) Biguanides
 - c) Sulfonyl ureas
 - d) Alpha glucosidase Inhibitors
5. Which of the following is preferred in obese patients with Type II Diabetes mellitus?
- a) Sulfonylureas
 - b) Metformin
 - c) Acarbose
 - d) Thiazolidinediones

☐☐☐☐☐

Physiology (4 × 1 = 4 marks)

1. In the kidney, substance which is filtered as well as actively secreted is
- a) Inulin
 - b) PAH
 - c) Creatinine
 - d) Urea

☐

2. Which of the following is **FALSE** regarding Insulin: Glucagon molar ratio?
- a) The ratio falls during increased mobilization of endogenous glucose.
 - b) A low ratio facilitates lipolysis.
 - c) During prolong exercise the ratio increases.
 - d) Pure fat diet has less influence on the ratio.
3. Arthrosclerosis is common in case of prolong hypothyroidism because
- a) The expression of LDL receptors decreases in liver.
 - b) Plasma level of phospholipids increases.
 - c) The fatty acid mobilization from adipose cell is reduced.
 - d) The oxidation of free fatty acid decreases.
4. The range wave length of UV light that catalyzes the conversion of 7-dehydrocholesterol to vitamin D₃ in the skin is
- a) 270- 330 nm
 - b) 200- 240 nm
 - c) 370- 450 nm
 - d) 400- 500nm

☐☐☐

Model Question

Kathmandu University
2012

Level : MBBS

Exam : II MBBS

Paper: VI Renal and electrolyte system, Endocrine and metabolism system

Time: 2 hrs. 30 min.

Full mark: 50

Date:

INSTRUCTION TO THE CANDIDATE

- Write brief, relevant and legible answers.
- Illustrate your answer with well labeled diagrams wherever required.
- All questions are compulsory.

Section 'B' Short Answer Questions

Anatomy (3 marks)

1. Draw and labeled the anterior relations of the right kidney. [3]

Biochemistry (7 marks)

2. a. Describe the inborn errors of metabolism associated with the metabolism of phenylalanine and tyrosine. [2]
b. Explain the mechanism of thyroid hormone synthesis. [3]
c. Write the concept of creatinine clearance test. [2]

Microbiology (2 marks)

3. List out the agents causing urinary tract infection? [2]

Pathology (9 marks)

4. a. What is the pathogenesis and morphological features of post streptococcal glomerulonephritis? [3+2 = 5]
b. Classify the renal tumor. Write shortly on Wilm's tumor. [2+2 = 4]

Pharmacology (6 marks)

5. a. Mention uses and adverse effects of ADH. [2]
b. Explain the mechanism of action of Thiazide diuretics. Write their uses and adverse effects. [2+2=4]

Physiology (3 marks)

6. Describe the mechanism of reabsorption of NaCl in the various segments of the nephron. [3]

Section 'C'
Problem Based Questions

Problem I

7. A 38 years old lady presented with hypotension, loss of libido, constipation, cessation of menstruation, cold intolerance. On further questioning, she gave history of massive per vaginal bleeding following last child birth 1 and ½ years back. The child was not breastfed. The case was suspected to be post partum Panhypopituitarism.
- a. Give the pathophysiology behind the development of this condition. [4]
 - b. Why posterior pituitary hormone deficiency is not seen in this condition? [3]
 - c. How does pituitary gland get blood supply. [3]

Problem II

8. Mrs. Laxmi, a 65 years old lady and a known case of diabetes and hypertension for previous fifteen years, on irregular treatment, recently started developing lethargy, loss of appetite, mild swelling of body more in the periorbital region and itching in different areas of the body. After detail examination and investigations, she was diagnosed to be a case of chronic renal failure.
- a. Explain the histopathology in case of chronic renal failure. [4]
 - b. Describe the functions of kidney and try to correlate those with the signs and symptoms of this patient. [2+1=3]
 - c. Write in detail about common tests used to assess renal function and show their relevance in diagnosing a case like this. [2+1=3]

Pre-Clinical Science

Year-2

Paper: VII Reproductive System

| Section | Type of question | Number of questions | Mark distributions | Time allocation |
|---------|---------------------------------|---------------------|--------------------|------------------------|
| A | MCQ (Multiple choice questions) | 30 | 30 (30Q×1mark) | 30 minutes |
| B | SAQ (Short answer questions) | 6 | 30 marks (6Q) | 2 hours and 30 minutes |
| C | PBQ (Problem based questions) | 2 | 20 (2Q×10 mark) | |

Marks distribution according to weightage of classes

| | No of Q | Anatomy | Biochemistry | Microbiology | Pathology | Pharmacology | Physiology | Total marks |
|-----|---------|---------|--------------|--------------|-----------|--------------|------------|-------------|
| MCQ | 30 | 7 | 2 | 5 | 7 | 5 | 4 | 30 |
| SAQ | 6 | 7 | 2 | 5 | 7 | 5 | 4 | 30 |
| PBQ | 2 | | | | | | | 20 |

Instructions:

- All questions are compulsory.
- MCQs:
 - Should be single response type.
 - Should have four alternates.
 - Should not include 'all of the above' or 'none of the above'.
- SAQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).
- PBQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).

Model questions

**Kathmandu University
2012**

Level : MBBS

Exam : II MBBS

Paper: VII Reproductive System

Regn. No. _____

Roll No.: _____

Time: 30 minutes

Date: _____

Full mark: 30

**Section 'A'
Multiple Choice Questions**

Choose the most appropriate answer and write corresponding alphabet in the box:

Anatomy (7 × 1 = 7 marks)

1. Normal position of uterus is:
 - a. Retroverted & retroflexed
 - b. Anteverted & anteflexed
 - c. Anteverted & retroflexed
 - d. Retroverted & anteflexed☐
2. Left gonadal vein drains into:
 - a. Internal iliac vein
 - b. Inferior vena cava
 - c. Left renal vein
 - d. Vena azygos☐
3. Which is the commonest feature of male bony pelvis:
 - a. Pelvic inlet is round or oval
 - b. Subpubic angle is 50 to 60 degrees
 - c. Obturator foramen is small and triangular
 - d. Sciatic notches are wider☐
4. Cervix is supplied by which of the following nerves
 - a. Pudendal
 - b. Pelvic splanchnic nerve
 - c. Sacral 1
 - d. Lumbar 5, sacral 1☐
5. Which of the following is not a content of broad ligament?
 - a. Uterine tube
 - b. Ovarian ligament
 - c. Round ligament
 - d. Cervix☐
6. Uterine artery is a branch of which artery?
 - a. External iliac
 - b. Internal iliac
 - c. Abdominal aorta
 - d. Common iliac☐

7. Which of the following is formed by para-mesonephric duct:
- Upper part of vagina
 - Penis
 - Urethra
 - Clitoris

☐

Biochemistry (2 × 1 = 2 marks)

1. The Chemical Nature of the primer required for the synthesis of DNA is
- DNA
 - RNA
 - Histone
 - hnRNA
2. The hormone which is responsible for maintenance of menstrual cycle in women is
- Progesterone
 - Prolactin
 - Estrogen
 - Cortisol

☐☐

Microbiology (5 × 1 = 5 marks)

1. Which of the following common type of Human papilloma virus cause genital malignancies:
- Type 16 and 18
 - Type 1 and 2
 - Type 20 and 40
 - Type 4 and 8
2. Clue cells are diagnostic for which of the following disease:
- Trichomoniasis
 - Bacterial vaginosis
 - Genital candidiasis
 - Genital warts
3. Chancroid is caused by:
- Treponema pallidum*
 - Haemophilus influenza*
 - Haemophilus ducreyi*
 - Calymmatobacterium granulomatis*
4. Which of the following test is not a non-specific test for syphilis?
- Venereal Disease Research Laboratory test
 - Rapid Plasma regain test
 - Treponema pallidum* haemagglutination test.
 - Wasserman's test
5. Molluscum contagiosum is caused by:
- Herpes virus
 - Human immunodeficiency virus
 - Pox virus
 - Human papilloma virus

☐☐☐☐☐

Pathology (7 × 1 = 7 marks)

- 1) Hypospadias is
 - a. Urethral opening on lower surface of penis
 - b. Narrowing of prepuce
 - c. Urethral opening on dorsal side
 - d. Inflammation of glands and prepuce☐
- 2) Koilocytic change in squamous cells is caused by which of the following viruses?
 - a. EBV
 - b. HSV
 - c. HPV
 - d. HIV☐
- 3) Adenocarcinoma of prostate occurs in which of the following zones
 - a. Periurethral zone
 - b. Peripheral zone
 - c. Transitional zone
 - d. Central zone☐
- 4) Bell clapper abnormality is associated with
 - a. Undescended testes
 - b. Carcinoma of testes
 - c. Infertility
 - d. Torsion of testes☐
- 5) Endometrial carcinoma is associated with
 - a. Use of intrauterine contraceptive device
 - b. Human papilloma virus infection
 - c. Excess estrogens
 - d. Multiparity☐
- 6) In complete mole
 - a. Fetal parts are seen
 - b. Karyotype is triploid
 - c. Focal trophoblastic proliferation is seen
 - d. 2% can progress to choriocarcinoma☐
- 7) Oral contraceptive pills are protective against
 - a. Endometrial carcinoma
 - b. Cervical carcinoma
 - c. Ovarian carcinoma
 - d. Breast carcinoma☐

Pharmacology (5 × 1 = 5 marks)

- 1) The following drug has potent antiandrogenic and weak progestational activity:
 - a. Ethylestrenol
 - b. Clomiphene citrate
 - c. Cyproterone acetate
 - d. Megestrol acetate☐

- 2) The currently used injectable hormonal contraceptive contains:
 - a. Long acting progestin
 - b. Long acting estrogen
 - c. Both long acting estrogen and progestin
 - d. Chorionic gonadotropins☐
- 3) The following anti-HIV drugs should not be combined with zidovudine because of mutual antagonism:
 - a. Stavudine
 - b. Lamivudine
 - c. Nevirapine
 - d. Ritonavir☐
- 4) Which of the following is NOT used as emergency contraceptives?
 - a. Levonorgestrel
 - b. Progestasert
 - c. Mifepristone
 - d. Levonorgestrel and Ethinyl Estradiol combination☐
- 5) The most vulnerable period of pregnancy for the causation of fetal malformations due to drug is:
 - a. 18-55 days of gestation
 - b. 56-84 days of gestation
 - c. Second trimester
 - d. 36 weeks onwards☐

Physiology (4 × 1 = 4 marks)

- 1) Normally puberty in male does not occur before the age of 12 years because of the inability of:
 - a. Hypothalamus to secrete GnRH in a pulsatile manner
 - b. Anterior pituitary to secrete gonadotropins
 - c. Testes to secrete testosterone
 - d. Tissues to respond to testosterone☐
- 2) Which statement about testosterone is **wrong**?
 - a. Secreted by leydig cells
 - b. Responsible for growth of pubic hair in females
 - c. More potent than dihydrotestosterone
 - d. Essential for spermatogenesis☐
- 3) Pregnancy to full term is essentially maintained by:
 - a. Corpus luteum of pregnancy
 - b. Placenta, after two months of gestation
 - c. Anterior pituitary
 - d. Hypothalamus☐
- 4) Initiation of lactation after parturition is due to fall in blood level of:
 - a. Estrogen
 - b. Progesterone
 - c. HCG
 - d. HCS☐

Model Question

**Kathmandu University
2012**

Level : MBBS

Exam : II MBBS

Paper : VII Reproductive system

Time : 2 hrs. 30 min.

Marks: 50

Date:

INSTRUCTION TO THE CANDIDATE

- Write brief, relevant and legible answers.
- Illustrate your answer with well labeled diagrams wherever required.
- All questions are compulsory.

**Section 'B'
Short Answer Questions**

Anatomy (7 marks)

1. a. Give a brief description on covering of testes. [3]
b. Describe the histology of ovary with labeled diagram. [2+2=4]

Biochemistry (2 marks)

2. Briefly describe the polymerase chain reaction (PCR) along with its applications. [2]

Microbiology (5 marks)

3. List out all the causative agents of sexually transmitted diseases. Add a note on diagnosis of HIV/AIDS. [2+3]

Pathology (7 marks)

4. a. Classify the ovarian tumors. [2]
b. Mention the prognostic factors of breast cancer. [2]
c. Explain the pathophysiology of benign prostatic hyperplasia. [3]

Pharmacology (5)

5. a. Write down the advantages of combined oral contraceptive pills. [2]
b. Explain the SERMs. [3]

Physiology (4 marks)

6. a. Mention the role progesterone on uterus. [2]
b. Explain the proliferative phase of menstruation cycle. [2]

Section 'C'
Problem Based Questions

Problem I

7. Aaite has been working in India as a labourer for last few years. Recently he returned home and decided that he would rather work in his village than in India. Lately, Maili, the wife of Aaite, has been suffering from lower abdominal pain and also whitish discharge per vagina. When the symptoms became really troublesome, she decided to visit the hospital. The doctor at the hospital took detail history and also sent for some investigations. The reports suggested that she suffered from gonorrhoea but fortunately didn't have HIV/AIDS. The doctor, however, suggested that Aaite should also come for the tests. When Aaite was tested for HIV, he was found to be positive.
- a. What is the therapeutic management of Maili? [3]
 - b. Enumerate organisms causing whitish discharge per vagina. [3]
 - c. Explain the lining epithelium of female reproductive system. [4]

Problem II

8. When Kanchi missed her periods she went to the health center where the laboratory assistant Mr. Padam did her urine test for pregnancy. Kanchi was happy that the test turned out to be positive. She didn't bother to go for antenatal check-ups and was continuing her regular activities as usual. After three months (since she missed her period) Kanchi started developing repeated episodes of vomiting. She thought that this was usual symptom of pregnancy and didn't pay much attention to that. She got quite sick and the vomiting got worsened every day. One morning when she woke up she found that she had per vaginal bleeding and there was passage of bits of small grape-like masses.
- a. Explain the physiological basis of why menstruation stops during pregnancy. [3]
 - b. What is Hydatidiform mole and explain the possibility of Hydatidiform mole in this case. [1+3=4]
 - c. Mention the laboratory investigations for this patient. [3]

Pre-Clinical Science

Year-2

Paper: VIII Central Nervous System and Special Senses

| Section | Type of question | Number of questions | Mark distributions | Time allocation |
|---------|---------------------------------|---------------------|--------------------|------------------------|
| A | MCQ (Multiple choice questions) | 30 | 30 (30Q×1 mark) | 30 minutes |
| B | SAQ (Short answer questions) | 6 | 30 marks (6Q) | 2 hours and 30 minutes |
| C | PBQ (Problem based questions) | 2 | 20 (2Q×10 mark) | |

Marks distribution according to weightage of classes

| | No of Q | Anatomy | Biochemistry | Microbiology | Pathology | Pharmacology | Physiology | Total marks |
|------|---------|---------|--------------|--------------|-----------|--------------|------------|-------------|
| MCQs | 30 | 8 | 2 | 3 | 3 | 6 | 8 | 30 |
| SAQs | 6 | 9 | 2 | 3 | 3 | 5 | 8 | 30 |
| PBQ | 2 | | | | | | | 20 |

Instructions:

- All questions are compulsory.
- MCQs:
 - Should be single response type.
 - Should have four alternates.
 - Should not include 'all of the above' or 'none of the above'.
- SAQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).
- PBQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).

Model questions

**Kathmandu University
2012**

Level : MBBS

Exam : II MBBS

Paper: VIII Central Nervous System and Special senses

Regn. No. _____

Roll No.: _____

Time: 30 minutes

Date: _____

Full mark: 30

**Section 'A'
Multiple Choice Questions**

Choose the most appropriate answer and write corresponding alphabet in the box:

Anatomy (8 × 1 = 8 marks)

1. Which of the following does not pass through Foramen magnum;
a. Accessory pharyngeal artery
b. Vertebral artery
c. Spinal accessory nerve
d. Vertical band of cruciate ligament ☐
2. Which of the following nerve does not pass through Jugular foramen?
a. Vagus
b. Hypoglossal
c. Glossopharyngeal
d. Accessory ☐
3. Middle meningeal artery passes through which foramen;
a. Lacerum
b. Ovale
c. Spinosum
d. Jugular ☐
4. Which of the following nerve supplies skin overlying the Angle of mandible?
a. Mandibular
b. Great auricular
c. Lesser occipital
d. Maxillary ☐
5. Subarachnoid space in the adult ends at the level of :
a) 2nd sacral vertebra
b) 2nd lumbar vertebra
c) 2nd coccygeal vertebra
d) 1st sacral vertebra ☐

6. Pyramidal fibres mostly arise from Brodmann's cortical areas:
 - a) 3,1,2
 - b) 8
 - c) 4
 - d) 18
7. Substantia gelatinosa of spinal cord continues in medulla oblongata as :
 - a) Nucleus of spinal tract of trigeminal nerve
 - b) Gracile nucleus
 - c) Clarks column
 - d) Cuneate nucleus
8. Lateral medullary syndrome of Wallenberg is characterized by:
 - a) Involvement of tectospinal tract
 - b) Involvement of anterior spinothalamic tract
 - c) Involvement of spinal tract of trigeminal nerve
 - d) involvement of rubrospinal tract

☐
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☐

Biochemistry (2 × 1 = 2 marks)

1. GABA, an inhibitory neurotransmitter is a product of the following amino acids -
 - a) Phenylalanine
 - b) Tryptophan
 - c) Glutamic acid
 - d) Glycine
2. Diseases detected by laboratory examination of CSF have high sensitivity and high specificity for
 - a) Intracranial hemorrhage
 - b) Bacterial meningitis
 - c) Viral meningitis
 - d) Multiple sclerosis

☐
☐

Microbiology (3 × 1 = 3 marks)

1. Clostridium tetanus appears after Gram stain
 - a) Gram positive rod with terminal spore
 - b) Gram positive rod with subterminal spore
 - c) Gram positive rod with central terminal spore
 - d) Gram positive rod with bulging subterminal spore
2. Rabies virus belongs to family of
 - a) Picorna virus
 - b) Flavi virus
 - c) Rhabdo virus
 - d) Corona virus
3. Polio virus is transmitted by
 - a) Faecal material
 - b) Blood
 - c) Sputum
 - d) Skin contact

☐
☐
☐

Pathology (3 × 1 = 3 marks)

1. Lucid interval is seen in:
 - a) Subdural hematoma
 - b) Epidural hematoma
 - c) Concussion
 - d) Contusion
2. Hemorrhagic infarction is mainly caused by:
 - a) Atherosclerosis
 - b) Embolism
 - c) Hypertension
 - d) Ruptured aneurysm
3. Charcot-Bouchard aneurysms is seen in:
 - a) Chronic hypertension
 - b) Malignant hypertension
 - c) Atherosclerosis
 - d) Vasculitis

☐☐☐

Pharmacology (6 × 1 = 6 marks)

1. Barbiturates acts on
 - a) α - adrenergic receptor
 - b) β - adrenergic receptor
 - c) cholinergic receptor
 - d) GABA receptor
2. Long term use of lithium can cause
 - a) Hypothyroidism
 - b) Anaemia
 - c) Jaundice
 - d) Peripheral neuropathy
3. Lidocaine is good for
 - a) Surface application
 - b) Inhalation
 - c) Injection
 - d) Surface application & injection
4. Naloxone is the strong antagonist of:
 - a) Mu receptor
 - b) Kappa receptor
 - c) Delta receptor
 - d) Sigma receptor
5. Local anaesthetics interfere with the movements of which ion as a fundamental basis for their action?
 - a) Calcium
 - b) Potassium
 - c) Sodium
 - d) Hydrogen

☐☐☐☐☐

6. This drug is considered as an antidote for methanol poisoning:
- a) Flumazenil
 - b) Fomepizole
 - c) Fluoromethanol
 - d) Fluothane

☐

Physiology (8 × 1 = 8 marks)

1. Receptor potential
- a) Is local non propagated
 - b) Does not exhibit adaptation
 - c) Does not vary in amplitude if intensity of stimulus is varied
 - d) Is recorded only in pacinian corpuscles
2. Modulation of pain is brought about by descending fibers terminating in the dorsal horn of spinal cord. These fibers are
- a) Cholinergic
 - b) Adrenergic
 - c) GABA – ergic
 - d) Serotonergic
3. When light falls on the photoreceptors
- a) Quantity of neurotransmitter released falls
 - b) Sodium channels in the outer segment open
 - c) Potassium channels in the inner segment close
 - d) They are depolarized
4. **Not true** about acoustic reflex
- a) It is accompanied by contraction of stapedius and tensor tympani
 - b) it protects the inner ear against sudden loud sound
 - c) It is absent in patients with facial paralysis
 - d) Masks the inner sound
5. Complete lesion of the left optic tract causes blindness in the following fields of vision
- a) Left temporal and right nasal
 - b) Right temporal and left nasal
 - c) Complete blindness in the left eye
 - d) Nasal halves of both eyes
6. Fastest adapting receptor is
- a) Meissner's corpuscle
 - b) Baroreceptor
 - c) Stretch reflex
 - d) Golgi tendon organ
7. **Not true** about olfactory sense
- a) Odorant must be water soluble
 - b) Cortical projections are asymmetrical
 - c) Almost 10,000 different odors can be recognized by human beings
 - d) Power of determination of differences in intensity of odor is highly developed in man

☐☐☐☐☐☐☐

8. Lesion of basal ganglia **do not** produce
- a) Paralysis
 - b) Cogwheel type of rigidity
 - c) Resting tremors
 - d) Difficulty in initiation of voluntary movements



Model Question

Kathmandu University
2012

Level : MBBS

Exam : II MBBS

Paper: VIII Central Nervous System and Special Senses

Time: 2 hrs. 30 min.

Full mark: 50

Date:

INSTRUCTION TO THE CANDIDATE

- Write brief, relevant and legible answers.
- Illustrate your answer with well labeled diagrams wherever required.
- All questions are compulsory.

Section 'B' Short Answer Questions

Anatomy (9 marks)

1. a. Describe the distribution of investing layer of deep cervical fascia. [3]
b. Give the blood supply of superolateral surface of cerebral hemisphere. [3]
c. Explain the floor of the fourth ventricle. [3]

Biochemistry (2 marks)

2. Classify the neurotransmitters with Example. [2]

Microbiology (3 marks)

3. Write briefly on Bacterial meningitis. [3]

Pathology (3 marks)

4. Describe the pathogenesis of Prion disease. [3]

Pharmacology (5 marks)

5. a. Classify anti-epileptic drugs. Mention the mechanism of action Phenytoin. [1+2=3]
b. Write shortly on Cheese Reaction. [2]

Physiology (8 marks)

6. a. Compare and contrast REM sleep and stage IV of N-REM sleep. [3]
b. Describe the mechanism of perception of sound. [3]
c. Explain the visual pathway. [2]

Section 'C'

Problem Based Questions

Problem I

7. 68 years old lady, a known case of Mitral stenosis with Atrial fibrillation, presented with sudden weakness of rt.side of her body including her face (UMN type) and difficulty in speech. Vitals were normal except for BP of 190/110 mm of Hg. On examination of rt. limbs, power: 2/5 both upper and lower limbs, hyperreflexia +, rigid, plantar was upgoing, complete sensory loss. Lt.limbs were intact neurologically. Cerebellar functions could not be assessed. Mid diastolic murmur could be heard over mitral area. CT scan was ordered which showed ischemic lesion over the area supplied by middle cerebral artery. Treatment was started with Thrombolytic Agents, Aspirin and low molecular weight Heparin.
- a. What is your diagnosis and the causes for this condition? [1+2=3]
 - b. Why upper part of face is spared in UMN type of facial palsy? Describe the course of upper motor tract of facial nerve. [2+2=4]
 - c. Describe the role of Aspirin. [3]

Problem II

8. Mr. Amar, a 15 years old boy was brought to primary health center with history of fever, headache, vomiting and altered consciousness for previous 7 days. On examination the doctor at PHC found that Amar was quite sick looking, febrile and looked drowsy. He also found that Amar had neck rigidity and his vomiting was projectile in nature. Without losing much time, the doctor did lumbar puncture and asked the laboratory technician for reporting on CSF. The result was strongly suggestive of bacterial meningitis. Because of the 'bandh', it had not been possible to bring medicines at the center for one week. So, the doctor was worried that he couldn't give any antibiotics to the patient. The patient's family also couldn't take him to other hospital as there were no transportation facilities. The next day, the condition of the patient had deteriorated. When the doctor did neurological examination, he also found that there was upper motor neuron type of paralysis in the lower limbs.
- a. Explain what must have been the laboratory report of the cerebrospinal fluid in this patient. How would it have been different if the patient had tuberculous meningitis? [2+1=3]
 - b. What do you mean by upper motor neuron? [4]
 - c. Explain two important features typical to upper motor neuron type of paralysis. [1+2=3]

Pre-Clinical Science

Year-2

Paper: IX Introduction to Clinical Medicine

| Section | Type of question | Number of questions | Mark distributions | Time allocation |
|---------|---------------------------------|---------------------|--------------------|------------------------|
| A | MCQ (Multiple choice questions) | 30 | 30 (30Q×1 mark) | 30 minutes |
| B | SAQ (Short answer questions) | 6 | 30 marks (6Q) | 2 hours and 30 minutes |
| C | PBQ (Problem based questions) | 2 | 20 (2Q×10 mark) | |

Instructions:

- All questions are compulsory.
- MCQs:
 - Should be single response type.
 - Should have four alternates.
 - Should not include 'all of the above' or 'none of the above'.
- SAQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).
- PBQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).

Model questions

**Kathmandu University
2012**

Level : MBBS

Exam : II MBBS

Paper: IX Introduction to Clinical Medicine

Regn. No. _____

Roll No.: _____

Time: 30 minutes

Date: _____

Full mark: 30

**Section 'A'
Multiple Choice Questions**

Choose the most appropriate answer and write corresponding alphabet in the box:

1. In which of the following conditions, central cyanosis is not present?
 - a. Peripheral vascular disease
 - b. Pulmonary oedema
 - c. Chronic Obstructive Pulmonary Disease
 - d. Tetralogy of Fallot

☐

2. Which is the site to see central cyanosis?
 - a. Sclera
 - b. Conjunctival conjunctiva
 - c. Tongue
 - d. Nail beds

☐

3. Regarding Informed Consent, which of the following is incorrect?
 - a. Informed Consent is essential for biomedical researches.
 - b. Informed Consent should also be taken before examination of the patient.
 - c. We must wait to get informed consent from the patient party before doing any emergency life-saving measures.
 - d. It is necessary to take informed consent from the patient if we are going to use his/her medical information.

☐

4. Informed consent can be seriously impeded by all of the following **except**:
 - a. Psychiatric disorder
 - b. Impaired cognition
 - c. Fluctuating levels of consciousness
 - d. Physical pain

☐

5. Which of the following is correct regarding chief complaints of the patient during history taking?
 - a. Chief complaints should include all the symptoms of the patients
 - b. There is no need to mention about the duration of symptoms in chief complaints.
 - c. Chief complaints should include the symptoms that made the patient come to seek medical attention
 - d. Chief complaints should be explained in relation to past illness also.

☐

6. Which of the following is incorrect regarding history of present illness of the patient during history taking?
- a. It should be presented in complete sentences.
 - b. It should comprise of all the complaints of the patients.
 - c. It is not necessary to have chronological order in history of present illness
 - d. It should be framed as per the description of the patients and should not consist of technical words.
7. Which of the following is not a cause of anemia?
- a. Hookworm infestation
 - b. Nutritional deficiency
 - c. Chronic Obstructive Pulmonary Disease
 - d. Chronic diseases, e.g. Rheumatoid Arthritis
8. Which is the site to see pallor?
- a. Sclera of eye
 - b. Bulbar conjunctiva
 - c. Ventral Surface of the tongue
 - d. Palpebral conjunctiva
9. Matted lymph nodes are found in
- a. Tuberculosis
 - b. Lymphoma
 - c. Leukemia
 - d. Myeloma
10. Which of the following is incorrect?
- a. Axillary temperature gives better information about core body temperature than rectal temperature.
 - b. Hyperthermia and fever are not synonymous
 - c. Fever can also be caused by underlying malignancy.
 - d. There is relationship between pulse rate and fever.
11. The volume of the pulse is best measured in
- a. Radial Artery
 - b. Dorsalis Pedis Artery
 - c. Carotid Artery
 - d. Femoral Artery
12. Muscle power of 3/5 is when there is
- a. No movement of the muscles
 - b. Normal power
 - c. Movement present when gravity is eliminated
 - d. Movement against some resistance
13. Muscle tone can be assessed by
- a. Passive movement
 - b. Active movement
 - c. inactive movement
 - d. X-rays

14. In case of right sided pleural effusion, which of the following is **incorrect**?
a. There is diminished breath sound in right side
b. Dullness of percussion is present in the right side
c. Homogenous opacity is seen in the Chest X-ray in right side
d. Mediastinum is shifted towards right side. ☐
15. Chest pain at left side that increases during deep inspiration is more suggestive of:
a. Myocardial Infarction
b. Angina pectoris
c. Oesophagitis
d. Pleurisy ☐
16. Which of the following can cause haemoptysis?
a. Tuberculosis
b. Pulmonary oedema
c. Mitral stenosis
d. Lung failure ☐
17. Splitting of the second heart sound is best heard in:
a. Pulmonary area
b. Aortic area
c. Mitral area
d. Tricuspid area ☐
18. Clubbing is not seen in:
a. Bronchiectasis
b. Congenital cyanotic heart disease
c. Carcinoma of lung
d. Pneumonia ☐
19. In a patient admitted in ICU with artificial respiration for one month, the preferred site to see for oedema is:
a. Periorbital area
b. Sacral area
c. Pretibial region
d. All over body ☐
20. Shortness of breath is not present in:
a. Massive pleural effusion
b. Left heart failure
c. Costochondritis
d. Right heart failure ☐
21. Palpitation is present in:
a. Anxiety
b. Thyrotoxicosis
c. Supra ventricular tachycardia
d. Hypothyroxiosis ☐

22. Radial pulse rate is not equal to heart rate in:
a. Atrial fibrillation
b. Pneumonia
c. Buerger's disease
d. Angina pectoris
23. The commonest congenital heart disease is:
a. Ventricular Septal Defect
b. Patent Ductus Ateriosus
c. Tetralogy of Fallot
d. Atrial Septal Defect
24. Chest X-ray can give following information **except**:
a. Size of the heart
b. Fluid collection in Pleural cavity
c. Size of the lungs
d. Ischemic changes in heart
25. ECG does not give information about:
a. Ischemia of myocardium
b. Rotation of the heart
c. Oxygen saturation
d. Size of the ventricles
26. Pink frothy sputum is produced in:
a. Pulmonary oedema
b. Tuberculosis
c. Chronic Bronchitis
d. Bronchiectasis
27. Peripheral oedema is a feature of:
a. Right heart failure
b. Left heart failure
c. Co-arctation of aorta
d. Hypertension
28. One pack year is:
a. Smoking 20 cigarettes per day for one year
b. Smoking 20 cigarettes per day for 20 years
c. Smoking 1 cigarette per day for one year
d. Smoking 10 cigarettes per day for one year
29. Silent gap is avoided by:
a. Palpatory method of measuring BP.
b. Auscultatory method of measuring BP.
c. Measuring BP in supine position
d. Measuring BP in lying down position.
30. Jugular venous pressure:
a. Is measured in supine position
b. Reflects right atrial pressure
c. Is better felt than seen
d. Is measured by sphygmomanometer

☐☐☐☐☐☐☐☐☐

Model Question

Kathmandu University
2012

Level : MBBS

Exam : II MBBS

Paper: IX Introduction to Clinical Medicine

Time: 2 hrs. 30 min.

Full mark: 50

Date:

INSTRUCTION TO THE CANDIDATE

- Write brief, relevant and legible answers.
- Illustrate your answer with well labeled diagrams wherever required.
- All questions are compulsory.

Section 'B' Short Answer Questions

1. A man of 40 years develops sudden severe epigastric pain following heavy meal. Describe the differential diagnosis. [5]
2. How do you examine the patient suffering from loin pain? [5]
3. Describe the antenatal investigations. [5]
4. What are the causes of hepatitis? How do you recognize a case of fulminant hepatic failure? [2+3=5]
5. How do you assess a case of dehydration? [5]
6. Classify meningitis. Write down CSF changes in different types of meningitis. [1+4=5]

Section 'C' Problem Based Questions

Problem I

7. A 40 years old obese female is complaining of acute pain in right hypochondrium radiating to lower end of right scapula. Examination reveals low grade fever with positive Murphy's sign.
 - a. What will be the diagnosis? [2]
 - b. Explain the radiating pain? [4]
 - c. Mention the investigations for this patient. [4]

Problem II

8. A 28 years old, injecting drug user, male had presented in community clinic with significant weight loss and chronic diarrhea for 40 days. On physical examination, multiple lymph nodes were palpable and the tongue was coated with white plaques.
 - a. Identify the disease. [1]
 - b. Write stages of the disease. [3]
 - c. Describe clinical and laboratory criteria for diagnosis. [3]
 - d. What are the preventive measures? [3]

Pre-Clinical Science

Year-2

Paper: X Community Medicine part I

| Section | Type of question | Number of questions | Mark distributions | Time allocation |
|---------|---------------------------------|---------------------|--------------------|------------------------|
| A | MCQ (Multiple choice questions) | 30 | 30 (30Q×1mark) | 30 minutes |
| B | SAQ (Short answer questions) | 6 | 30 marks (6Q) | 2 hours and 30 minutes |
| C | PBQ (Problem based questions) | 2 | 20 (2Q×10 mark) | |

Instructions:

- All questions are compulsory.
- MCQs:
 - Should be single response type.
 - Should have four alternates.
 - Should not include 'all of the above' or 'none of the above'.
- SAQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).
- PBQs
 - Marking are as shown in the above chart.
 - A part/s of question should not have fractional marks (e.g., 1.5 or 0.5).

Model questions

**Kathmandu University
2012**

Level : MBBS

Exam : II MBBS

Paper: X Community Medicine part I

Regn. No. _____

Roll No.: _____

Time: 30 minutes

Date: _____

Full mark: 30

**Section 'A'
Multiple Choice Questions**

Choose the most appropriate answer and write corresponding alphabet in the box:

1. **Not** correct for case control study is:
 - a. Study proceeds from cause to effect
 - b. It uses a comparison group to support the inference.
 - c. Study proceeds effect to cause
 - d. Both exposure & disease occurred before the start of the study

☐
2. Strategies of ARI control program in Nepal is all but:
 - a. Training mothers to recognize sign and symptoms
 - b. Promotion of IMCI program
 - c. Supply of amoxicillin
 - d. Avoid cough suppressants

☐
3. Death occurs in 10 percent of cases of meningococcal meningitis. Choose the rate that best describes the mentioned statement:
 - a. Secondary attack rate
 - b. Case fatality rate
 - c. Morbidity rate
 - d. Crude mortality

☐
4. A cut off point for fast breathing in a 5 months old child is:
 - a. 70/ minutes
 - b. 60/minutes
 - c. 50/minutes
 - d. 40/ minutes

☐
5. During the first 5 years of the study, 30 persons developed coronary heart disease per 1,000 persons who entered the study free of disease. It is best described as:
 - a. Point Prevalence
 - b. Relative risk
 - c. Incidence
 - d. Period Prevalence

☐

6. A study on a group of adults began in the year 2001 on their smoking habits. In 2011, development of malignancy was studied in the same group. This is an example of:
- Concurrent cohort study
 - Cross sectional study.
 - Case control study
 - Retrospective cohort study
7. Randomization is used to eliminate:
- Observer bias
 - Sampling bias
 - Confounding factors
 - Patient bias
8. Following are procedure of descriptive studies **except**:
- Define population and disease under study
 - Describe the occurrence of the disease
 - Select the study population by random method
 - Formulation of etiological hypothesis
9. In the administration of BCG vaccine, the diluents is:
- Glycerin
 - Normal saline
 - Distilled water
 - Glycerol
10. All of the following are danger signs for child less than 2 months, **except**:
- High fever
 - Convulsion
 - Fainting attack
 - Wheezes
11. A patient is injected with immunoglobulin against Hepatitis C, this is:
- Active immunity
 - Passive immunity
 - Non-specific immunity
 - Combined immunity
12. The occurrence in a community of a disease clearly in excess of normal expectancy is said to be:
- Epidemic
 - Endemic
 - Sporadic
 - Pandemic
13. **Not** true about Live Vaccines is:
- Live vaccines are more potent than killed vaccines
 - Two live vaccines can be given simultaneously at different sites
 - Live vaccines are always given as a single dose
 - Live vaccines must be properly stored

14. Prevalence of TB infection is measured by:
- a. Chest X-ray
 - b. Tuberculin test
 - c. Sputum AFB
 - d. Sputum culture
15. Indication for ART in HIV/AIDS is when CD₄ is:
- a. <200/mcL
 - b. <400/mcL
 - c. <300/mcL
 - d. >450/mcL
16. First case to be introduced in the population is
- a. Index case
 - b. Primary Case
 - c. Clinical Case
 - d. Subclinical Case
17. Physical quality of life index is measured by all **except**:
- a. Life expectancy at age one
 - b. Infant mortality
 - c. Life expectancy at birth
 - d. Literacy
18. Food poisoning is an example of:
- a. Common source, continuous exposure epidemic
 - b. Propagated epidemic
 - c. Modern epidemic
 - d. Common source, single exposure epidemic
19. A PTB patient stops his treatment after taking anti-tuberculosis drugs for 3 weeks. Two months later he returns to the DOTS center for continuation of treatment. He is:
- a. Relapse case
 - b. Defaulter case
 - c. Failure case
 - d. Strong positive case
20. The purpose of a double blind study is to:
- a. Achieve comparability of treated and untreated
 - b. Avoid observer and subject variation
 - c. Reduce the effects of sampling variation
 - d. Avoid observer bias and sampling variation
21. The theme of WHO day for the year 2011 is:
- a. "Make Every Mother and Child Count"
 - b. Antimicrobial resistance: no action today no cure tomorrow
 - c. Urbanization and health
 - d. Save lives. Make hospitals safe in emergencies

22. Several studies show that 85% of cases of lung cancer are due to cigarette smoking it is a measure of:
- Attributable risk
 - Absolute risk
 - Incidence rate
 - Relative risk
23. The gap in time in between the onset of primary case and the secondary case is:
- Generation time
 - Communicable period
 - Serial interval
 - Secondary attack rate
24. Fluid deficit in severe dehydration is:
- 40-50ml/kg
 - 140-150ml/kg
 - 50-100ml/kg
 - 100-110ml/kg
25. ABC is associated with prevention of:
- HIV/AIDS
 - Tuberculosis
 - Measles
 - Pneumonia
26. Major immunoglobulin of serum is:
- IgG
 - IgA
 - IgE
 - IgM
27. The agent changes in form and number in vector (malaria parasite in mosquito) is called:
- Propogative transmission
 - Cyclo-propogative transmission
 - Only passive transmission
 - Cyclo-developmental transmission
28. **Not** true for screening test is
- Done on apparently healthy individuals
 - Less accurate
 - Initiative comes from a patient
 - Not a basis for treatment
29. A child developed abscess at the site of vaccination, it is an example of:
- Nosocomial infection
 - Opportunistic infection
 - Superinfection
 - Iatrogenic infection
30. The most common causes of childhood mortality in Nepal is:
- ARI
 - Diarrhoea
 - PEM
 - Measles

Model Question

Kathmandu University
2012

Level : MBBS

Exam : II MBBS

Paper: X Community Medicine part I

Time : 2 hrs. 30 min.

Marks : 50

Date:

INSTRUCTION TO THE CANDIDATE

- Write brief, relevant and legible answers.
- Illustrate your answer with well labeled diagrams wherever required.
- All questions are compulsory.

Section 'B' Short Answer Questions

1. What are the basic steps required to conduct a case control study? Explain them. [1+4=5]
2. Define screening and its criteria? Discuss on lead time with illustrative diagram. [3+2=5]
3. Explain the case finding tools of pulmonary tuberculosis. Discuss on prevention & control of PTB in the community. [2+3=5]
4. Classify the ARI in child aged 2 months to 5 years. Explain the danger signs of very severe disease. [2+3=5]
5. Explain different modes of disease transmission with suitable examples. [5]
6. Explain the mean, mode and median. [5]

Section 'C' Problem Based Questions

Problem I

7. A 35 years old male working as a security guard in India had presented in community clinic with unexplained weight loss and chronic diarrhea for 40 days. On physical examination it was found that he had general lymphadenopathy and oral thrush.
 - a. What is your provisional diagnosis? [1]
 - b. In which stage of the disease does this patient fall? Explain the clinical stages of the disease. [3]
 - c. Describe clinical and laboratory criteria for diagnosis including expanded WHO case definition for AIDS surveillance. [3]
 - d. Prevention and control of the disease in the community. [3]

Problem II

8. A three year old boy was brought to a health center with fever, cough, running nose, redness of eyes. Mother told that her child developed fever 4 days back. Some bluish-white spots are also seen on the buccal mucosa opposite upper molars. The child also has 3 months old sibling in the house.

- a. What is your probable diagnosis? [1]
- b. What do you understand by the term 'pathognomonic' and what is the pathognomonic sign for upper mentioned disease? [1]
- c. Explain the clinical stages in this disease. [4]
- d. Discuss on the prevention and control of the disease. [4]

Pre-Clinical Sciences: Semester I- IV

| SUBJECTS | Semester- I | | Semester - II | | Semester - III | | Semester - IV | | TOTAL |
|---------------------------|-------------|----|---------------|----|----------------|-----|---------------|----|-------|
| | TH | PR | TH | PR | TH | PR | TH | PR | |
| Anatomy | 70 | 50 | 57 | 25 | 85 | 51 | 90 | 44 | 472 |
| Biochemistry | 63 | 25 | 30 | 25 | 70 | 25 | 37 | 25 | 300 |
| Microbiology | 32 | 20 | 15 | 20 | 49 | 20 | 32 | 20 | 208 |
| Pathology | 60 | 26 | 32 | 20 | 83 | 20 | 39 | 20 | 300 |
| Pharmacology | 51 | 26 | 40 | 24 | 41 | 30 | 29 | 26 | 267 |
| Physiology | 31 | 30 | 37 | 30 | 56 | 30 | 62 | 30 | 306 |
| Community Medicine | 48 | 45 | 35 | 40 | 35 | 30* | 24 | 30 | 287 |
| Clinical Orientation | 20 | | | | 20 | | 20 | | 80 |
| Medical Informatics | 30 | | | | | | | | 30 |
| Total Instructional Hours | 627 | | 446 | | 653 | | 524 | | 2250 |
| Self Study | 326 | | | | | | 196 | | 522 |

1. Theory (TH) - Practical (PR)
2. * Plus 1 week for field visits / practice.
- 3.
4. Note: Theory and Practical hours given in the table are approximate hours of instruction.
5. Theory includes admixture of lectures, seminars, tutorials and problem-based learning.
6. Practical include laboratory work, hands on skill development, etc.
7. Self Study includes seminar tutorial classes

Pre-Clinical Sciences: Semester I- VIII

Weightage of individual papers in each subject

| Paper | Anatomy | Physiology | Biochemistry | Microbiology | Pathology | Pharmacology | Total (hours) |
|-------|---------|------------|--------------|--------------|-----------|--------------|---------------|
| I | 59 | 23 | 42 | 39 | 28 | 36 | 227 |
| II | 67 | 18 | 22 | 19 | 21 | 42 | 189 |
| III | 12 | 48 | 39 | 20 | 34 | 32 | 185 |
| IV | 19 | 18 | 8 | 18 | 17 | 20 | 100 |
| | | | | | | | |

| | | | | | | | |
|-------------------------|---|------------|------------|------------|------------|------------|------------------|
| I Year | 157 | 107 | 111 | 96 | 100 | 130 | 312 (PBL) |
| | | | | | | | |
| V | 36 | 13 | 30 | 37 | 29 | 12 | 157 |
| VI | 25 | 14 | 32 | 6 | 43 | 25 | 145 |
| VII | 29 | 9 | 6 | 16 | 21 | 16 | 97 |
| VIII | 64 | 45 | 8 | 16 | 14 | 28 | 175 |
| | | | | | | | |
| II Year | 154 | 81 | 76 | 75 | 107 | 81 | 266 (PBL) |
| | | | | | | | |
| | 311 | 188 | 187 | 171 | 207 | 211 | 1275 |
| Com. Med. | | | | | | | 287 |
| Med. Informatics | | | | | | | 30 |
| ICM | | | | | | | 80 |
| | | | | | | | 2250 |
| Self Study | I year (Semester I - 326 + Semester III - 196) | | | | | | 522 |

1. Theory hours given in the table are approximate hours of instruction.
2. Theory includes admixture of lectures, seminars, tutorials and problem-based learning.
3. Self Study includes seminar tutorial classes

