



# MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)

**Grade 'A' Accredited by NAAC**

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## **Curriculum for Second M.B.B.S Pharmacology**

Amended upto BOM 57/2019, Dated 26/04/2019

## **Amended History**

1. Approved as per BOM 04/2007, Item No. 4, Dated 14/12/2007.
2. Amended upto BOM 40/2015, Resolution No. 3.2(c), Dated 13/03/2015.
3. Amended upto BOM 45/2016, Resolution No. 3.2(b), Dated 28/04/2016.
4. Amended upto BOM 48/2017, Resolution No. 5.7(f), Dated 24/01/2017.
5. Amended upto BOM 51/2017, Resolution No. 1.3.7.1, Resolution No. 1.3.8.1, Resolution No. 1.3.8.3, Resolution No. 1.3.8.4, Resolution No. 1.3.8.8, Resolution No. 1.3.8.9, Resolution No. 1.3.8.11, Resolution No. 1.3.8.13, Resolution No. 1.3.7.5; Dated 28/08/2017.
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9. Amended upto BOM 57/2019, Resolution No. 3.1.4.2, dated 26/04/2019.

## GENERAL CONSIDERATIONS AND TEACHING APPROACH

- (1) Graduate medical curriculum is oriented towards training students to undertake the responsibilities of a physician of first contact who is capable of looking after the preventive, promotive, curative & rehabilitative aspect of medicine.
- (2) With wide range of career opportunities available today, a graduate has a wide choice of career opportunities. The training, though broad based and flexible should aim to provide an educational experience of the essentials required for health care in our country.

“Training should be able to meet internationally acceptable standards.”

- (3) To undertake the responsibilities of service situations which is a changing condition and of various types, it is essential to provide adequate placement training tailored to the needs of such services as to enable the graduates to become effective instruments of implementation of those requirements. To avail of opportunities and be able to conduct professional requirements, the graduate shall endeavour to have acquired basic training in different aspects of medical care.
- (4) The importance of the community aspects of health care and of rural health care services is to be recognized. This aspect of education & training of graduates should be adequately recognized in the prescribed curriculum. Its importance has been systematically upgraded over the past years and adequate exposure to such experiences should be available throughout all the three phases of education & training. This has to be further emphasized and intensified by providing exposure to field practice areas and training during the internship period. The aim of the period of rural training during internship is to enable the fresh graduates to function efficiently under such settings.
- (5) The educational experience should emphasize health and community orientation instead of only disease and hospital orientation or being concentrated – on - curative - aspects. As such all the basic concepts of modern scientific medical education are to be adequately dealt with.
- (6) There must be enough experiences to be provided for self learning. The methods and techniques that would ensure this must become a part of teaching - learning process.
- (7) The medical graduate of modern scientific medicine shall endeavour to become capable of functioning independently in both urban and rural environment. He/she shall endeavour to give emphasis on fundamental aspects of the subjects taught and on common problems of health and disease avoiding unnecessary details of specialization.
- (8) The importance of social factors in relation to the problem of health and diseases should receive proper emphasis throughout the course and to achieve this purpose, the

educational process should also be community based than only hospital based. The importance of population control and family welfare planning should be emphasized throughout the period of training with the importance of health and development duly emphasized.

- (9) Adequate emphasis is to be placed on cultivating logical and scientific habits of thought, clarity of expression and independence of judgment, ability to collect and analyze information and to correlate them.
- (10) The educational process should be placed in a historic background as an evolving process and not merely as an acquisition of a large number of disjointed facts without a proper perspective. The history of Medicine with reference to the evolution of medical knowledge both in this country and the rest of the world should form a part of this process.
- (11) Lectures alone are generally not adequate as a method of training and are a poor means of transferring/acquiring information and even less effective at skill development and in generating the appropriate attitudes. Every effort should be made to encourage the use of active methods related to demonstration and on firsthand experience. Students will be encouraged to learn in small groups, through peer interactions so as to gain maximal experience through contacts with patients and the communities in which they live. While the curriculum objectives often refer to areas of knowledge or science, they are best taught in a setting of clinical relevance and hands on experience for students who assimilate and make this knowledge a part of their own working skills.
- (12) The graduate medical education in clinical subjects should be based primarily on out-patient teaching, emergency departments and within the community including peripheral health care institutions. The out-patient departments should be suitably planned to provide training to graduates in small groups.
- (13) Clinics should be organized in small groups of preferably not more than 10 students so that a teacher can give personal attention to each student with a view to improve his skill and competence in handling of the patients.
- (14) Proper records of the work should be maintained which will form the basis for the students' internal assessment and should be available to the inspectors at the time of inspection of the college by the Medical Council of India.
- (15) Maximal efforts have to be made to encourage integrated teaching between traditional subject areas using a problem based learning approach starting with clinical or community cases and exploring the relevance of various preclinical disciplines in both understanding and resolution of the problem. Every attempt be made to de-emphasize compartmentalization of disciplines so as to achieve both horizontal and vertical integration in different phases.



- (16) Every attempt is to be made to encourage students to participate in group discussions and seminars to enable them to develop personality, character, expression and other faculties which are necessary for a medical graduate to function either in solo practice or as a team leader when he begins his independent career. A discussion group should not have more than 20 students.
- (17) Faculty member should avail of modern educational technology while teaching the students and to attain this objective, Medical Education Units/ Departments be established in all medical colleges for faculty development and providing learning resource material to teachers.
- (18) To derive maximum advantage out of this revised curriculum, the vacation period to students in one calendar year should not exceed one month, during the 4 ½ years Bachelor of Medicine and Bachelor of Surgery (MBBS) Course.
- (19) In order to implement the revised curriculum in Toto, State Govts. and Institution Bodies must ensure that adequate financial and technical inputs are provided.
- (20) HISTORY OF MEDICINE –The students will be given an outline on “History of Medicine”. This will be taught in an integrated manner by subject specialists and will be coordinated by the Medical Education Unit of the College.
- (21) All medical institutions should have curriculum committee which would plan curricula and instructional method which will be regularly updated.
- (22) Integration of ICT in learning process will be implemented.

## OBJECTIVE OF MEDICAL GRADUATE TRAINING PROGRAMME:

- (1) **NATIONAL GOALS** : At the end of undergraduate program, the medical student should be able to :
  - (a) Recognize 'health for all' as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realization of this goal.
  - (b) Learn every aspect of National policies on health and devote himself / herself to its practical implementation.
  - (c) Achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
  - (d) Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
  - (e) Become exemplary citizen by observation of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.
- (2) **INSTITUTIONAL GOALS:** (1) In consonance with the goals each medical institution should evolve institutional goals to define the manpower (or professionals) they intend to produce. The undergraduate students coming out of a medical institute should:
  - (a) Be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.
  - (b) Be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.
  - (c) Appreciate rationale for different therapeutic modalities; be familiar with the administration of the "essential drugs" and their common side effects.
  - (d) Be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.
  - (e) Possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.
  - (f) be familiar with the basic factors which are essential for the implementation of the National Health Programmes including practical aspects of the following:-
    - (i) Family Welfare and Material and Child Health(MCH)
    - (ii) Sanitation and water supply

- (iii) Prevention and control of communicable and non-communicable diseases
  - (iv) Immunization
  - (v) Health Education
  - (vi) IPHS standard of health at various level of service delivery, medical waste disposal.
  - (vii) Organizational institutional arrangements.
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- (g) Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counseling
  - (h) Be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.
  - (i) Be able to work as a leading partner in health care teams and acquire proficiency in communication skills.
  - (j) Be competent to work in a variety of health care settings.
  - (k) Have personal characteristics and attitudes required for professional life such as personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

All efforts must be made to equip the medical graduate to acquire the skills as detailed as under:

A comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) Graduate:

**1. Clinical Evaluation:**

- (a) To be able to take a proper and detailed history.
- (b) To perform a complete and thorough physical examination and elicit clinical signs.
- (c) To be able to properly use the stethoscope, Blood Pressure, Apparatus Auroscope, Thermometer, Nasal Speculum, Tongue Depressor, Weighing Scales, Vaginal Speculum etc.:
- (d) To be able to perform internal examination-Per Rectum (PR), Per Vaginum (PV) etc.
- (e) To arrive at a proper provisional clinical diagnosis.

**II. Bed side Diagnostic Tests:**

- (a) To do and interpret Haemoglobin (HB), Total Count (TC), Erythrocytic Sedimentation Rate (ESR), Blood smear for parasites, Urine examination /albumin /sugar /ketones /microscopic:
- (b) Stool exam for ova and cysts;
- (c) Gram, staining and Siehl-Nielsen staining for AFB;
- (d) To do skin smear for lepra bacilli
- (e) To do and examine a wet film vaginal smear for Trichomonas
- (f) To do a skin scraping and Potassium Hydroxide (KOH) stain for fungus infections;
- (g) To perform and read Montoux Test.

**III. Ability to Carry Out Procedures:**

- (a) To conduct CPR (Cardiopulmonary resuscitation) and First aid in newborns, children and adults.
- (b) To give Subcutaneous (SC) /Intramuscular (IM) /Intravenous (IV) injections and start Intravenous (IV) infusions.
- (c) To pass a Nasogastric tube and give gastric leavage.
- (d) To administer oxygen-by masic/catheter
- (e) To administer enema
- (f) To pass a urinary catheter-male and female
- (g) To insert flatus tube
- (h) To do pleural tap, Ascitic tap & lumbar puncture
- (i) Insert intercostal tube to relieve tension pneumothorax
- (j) To control external Haemorrhage.

**IV Anaesthetic Procedure**

- (a) Administer local anaesthesia and nerve block



- (b) Be able to secure airway potency, administer Oxygen by Ambu bag.
- V **Surgical Procedures**

- (a) To apply splints, bandages and Plaster of Paris (POP) slabs;
- (b) To do incision and drainage of abscesses;
- (c) To perform the management and suturing of superficial wounds;
- (d) To carry on minor surgical procedures, e.g. excision of small cysts and nodules, circumcision, reduction of paraphimosis, debridement of wounds etc
- (e) To perform vasectomy;
- (f) To manage anal fissures and give injection for piles.

VI **Mechanical Procedures**

- (a) To perform thorough antenatal examination and identify high risk pregnancies.
- (b) To conduct a normal delivery;
- (c) To apply low forceps and perform and suture episiotomies;
- (d) To insert and remove IUD's and to perform tubectomy

VII **Paediatrics**

- (a) To assess new borns and recognize abnormalities and I.U. retardation
- (b) To perform Immunization;
- (c) To teach infant feeding to mothers;
- (d) To monitor growth by the use of 'road to health chart' and to recognize development retardation;
- (e) To assess dehydration and prepare and administer Oral Rehydration Therapy (ORT)
- (f) To recognize ARI clinically;

VIII **ENT Procedures:**

- (a) To be able to remove foreign bodies;
- (b) To perform nasal packing for epistaxis;
- (c) To perform trachesotomy

IX **Ophthalmic Procedures:**

- (a) To invert eye-lids;
- (b) To give Subconjunctival injection;
- (c) To perform appellation of eye-lashes;
- (d) To measure the refractive error and advise correctional glasses;
- (e) To perform nasolacrimal duct syringing for potency

X. **Dental Procedures:**

To perform dental extraction

**XI Community Health:**

- (a) To be able to supervise and motivate, community and para-professionals for corporate efforts for the health care;
- (b) To be able to carry on managerial responsibilities, e.g. Management of stores, indenting and stock keeping and accounting
- (c) Planning and management of health camps;
- (d) Implementation of national health programmes;
- (e) To effect proper sanitation measures in the community, e.g. disposal of infected garbage, chlorination of drinking water;
- (f) To identify and institute and institute control measures for epidemics including its proper data collecting and reporting.

**XII Forensic Medicine Including Toxicology**

- (a) To be able to carry on proper medico legal examination and documentation of injury and age reports.
- (b) To be able to conduct examination for sexual offences and intoxication;
- (c) To be able to preserve relevant ancillary material for medico legal examination;
- (d) To be able to identify important post-mortem findings in common un-natural deaths.

**XIII Management of Emergency**

- (a) To manage acute anaphylactic shock;
- (b) To manage peripheral vascular failure and shock;
- (c) To manage acute pulmonary oedema and LVF;
- (d) Emergency management of drowning, poisoning and seizures
- (e) Emergency management of bronchial asthma and status asthmaticus;
- (f) Emergency management of hyperpyrexia;
- (g) Emergency management of comatose patients regarding airways, positioning prevention of aspiration and injuries
- (h) Assess and administer emergency management of burns

**Syllabus for  
PHARMACOLOGY**

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## BROAD CURRICULUM AS PER MCI GUIDELINES (PHARMACOLOGY)

### i) GOAL:

The broad goal of the teaching of undergraduate students Pharmacology is to inculcate a rational and scientific basis of therapeutics.

### ii) OBJECTIVES

#### a. KNOWLEDGE

At the end of the course, the student should be able to:

1. Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs.
2. List the indications, contraindications, interactions and adverse reactions of commonly used drugs.
3. Indicate the use of appropriate drug in a particular disease with consideration to its cost, efficacy and safety for-
  - i) Individual needs.
  - ii) Mass therapy under national health program.
4. Describe the pharmacokinetic basis, clinical presentation, diagnosis and management of common poisonings.
5. List the drugs of addiction and recommend the management.
6. Classify environmental and occupational pollutants and state the management issues.
7. Indicate cautions in prescription of drugs in special medical situations such as pregnancy, lactation, infancy and old age.
8. Integrate the concept of rational drug therapy in clinical pharmacology.
9. State the principles underlying the concept of 'Essential Drugs'
10. Evaluate the ethics and modalities involved in the development and introduction of new drugs.

#### b. SKILLS

At the end of the course, the student should be able to:

1. Prescribe drugs for common ailments.
2. Recognize adverse reactions and interactions of commonly used drugs.
3. Observe experiments designed for study of effects of drugs, bioassay and interpretation of the experimental data.
4. Scan information on common pharmaceutical preparations and critically evaluate drug formulations.

**c. INTEGRATION**

Practical knowledge of use of drugs in clinical practice will be acquired through integrated teaching with clinical departments and pre clinical departments.

## Pharmacology and Pharmacotherapeutics

### 1. Goal

The broad goal of teaching pharmacology to undergraduate students is to inculcate in them a rational and scientific basis of therapeutics.

### 2. Educational objectives

#### (a) Knowledge

At the end of the course, the student shall be able to -

- i. describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs
- ii. list the indications, contraindications, interactions and adverse reactions of commonly used drugs
- iii. indicate the use of appropriate drug in a particular disease with consideration of its cost, efficacy and safety for -
  - individual needs, and
  - mass therapy under national health programmes
- iv. describe the pharmacokinetic basis, clinical presentation, diagnosis and management of common poisonings
- v. Integrate the list the drugs of addiction and recommend the management
- vi. Classify environmental and occupational pollutants and state the management issues
- vii. Explain pharmacological basis of prescribing drugs in special medical situations such as pregnancy, lactation, infancy and old age
- viii. explain the concept of rational drug therapy in clinical pharmacology
- ix. state the principles underlying the concept of 'Essential Drugs'
- x. evaluate the ethics and modalities involved in the development and introduction of new drugs

#### (b) Skills

At the end of the course, the student shall be able to -

- i. prescribe drugs for common ailments
- ii. identify adverse reactions and interactions of commonly used drugs
- iii. interpret the data of experiments designed for the study of effects of drugs and bioassays which are observed during the study
- iv. scan information on common pharmaceutical preparations and critically evaluate drug formulations
- v. be well-conversant with the principles of pharmacy and dispense the medications giving proper instructions

#### (c) Integration

Practical knowledge of rational use of drugs in clinical practice will be acquired through integrated teaching vertically with pre-clinical & clinical subjects and horizontally with other para-clinical subjects.

**3. Total duration of para-clinical teaching  
(III,IV,V)**

3 Semesters

Total 360 teaching days

25

Total number of teaching hours allotted to Pharmacology 300 hours

#### 4. Syllabus

##### a. Learning methods

Lectures, tutorials, Practicals

Distribution of teaching hours

##### Theory

• lectures	.....109 ± 5
• tutorials	.....17 ± 5
	<b>Total 126 ± 10</b>

B) Practicals .....120 ± 5

C) Revision & Evaluation (Internal Assessment) .....60

b. & c. Sequential organisation of contents & their division

##### A) INTRODUCTION: *Pharmacology - a foundation to clinical practice*

(N=1)

Development of the branch of pharmacology; Scope of the subject; role of drugs as one of the modalities to treat diseases, definition of drug; nature and sources of drugs; subdivisions of pharmacology rational pharmacotherapy

##### B) GENERAL PHARMACOLOGY:

(N=7 ± 2)

Pharmacokinetics: Absorption, Distribution, Biotransformation, Elimination

(n=3) Pharmacodynamics: Principles of Drug Action, Mechanisms of drug action,

Receptors (Nature, Types, Theories, Principles, Regulation) (n=1)

Application to pharmacotherapeutics: Relevance of Pharmacokinetics and dynamics

in clinical practice, Sequale of repeated administration of drug (n=2)

Adverse Drug Reactions (n=1)



Adrenergic agonists	(n=1)
Adrenergic antagonists I: $\beta$ -blockers	(n=1)
Adrenergic antagonists II: $\alpha$ -blockers	(n=1)
Cholinergic agonists	(n=1)
Anticholinesterases	(n=1)
Antimuscarinic drugs	(n=1)
Skeletal muscle relaxants	(n=1)

**A) CARDIOVASCULAR SYSTEM INCLUDING DRUGS AFFECTING COAGULATION AND THOSE ACTING ON KIDNEYS: (N=14 ± 2)**

General Considerations and Overview of antihypertensive therapy;	(n=2)
Diuretics	(n=1)
Angiotensin Converting Enzyme (ACE) inhibitors	(n=1)
Sympatholytics & vasodilators	
<i>Management of hypertension</i>	
Antianginal: Nitrates & others	(n=1)
Calcium channel blockers	(n=1)
<i>Pharmacotherapy of chest pain</i>	
Anticoagulants & Coagulants	(n=2)
Thrombolytics & Antiplatelet Agents	
Drugs for CCF: Digitalis glycosides, Others agents	(n=2)
<i>Management of CCF</i>	
Antiarrhythmic Agents Desirable To Know	(n=1)
Agents used for the management of shock	(n=1)
Hypolipidaemic drugs	(n=1)
Role of Nitric oxide and endothelin to be covered in CVS	
.....DK. Desirable To Know	

**E) HEMATOLOGICAL PHARMACOLOGY: (N=8 ± 2)**

General Considerations of iron deficiency anaemia and megaloblastic anaemia (n=1)

Erythropoietin,

GM-CSF

(n=1)

*Management of anaemia*

**F) NEUROPSYCHIATRIC PHARMACOLOGY INCLUDING INFLAMMATON, PAIN & SUBSTANCE ABUSE (N=15 ± 2)**

General Considerations

(n=1)

Sedative-Hypnotics

(n=2)

Psychopharmacology: Antianxiety; Antipsychotics; Antidepressants

(n=3)

Antiepileptics

(n=2)

Therapy of neurodegenerative disorders:

Anti-Parkinsonian agents; cerebral vasodilators/nootropics

(n=1)

Local anaesthetics

(n=1)

Analgesics: Opioids; NSAIDs

(n=3)

*Pharmacotherapy of pain including migraine*

*Pharmacotherapy of rheumatoid arthritis and gout*

Substance abuse: Management of opioid, alcohol and tobacco addictions (n=1)

**G) MISCELLANEOUS TOPICS - I: (N=6 ± 2)**

Autocoids (*to be covered before pain lectures*)

(n=1)

Antiallergics: Antihistaminics

(n=1)

Drugs used for bronchial asthma

(n=1)

*Pharmacotherapy of cough*

Drugs acting on immune system:

Immunostimulants, immunosuppressants; pharmacology of vaccines & sera (n=1) Desirable To Know

Drugs acting on the uterus

(n=1)

- Antimicrobial agents: (n=7)
- Sulphonamides & Cotrimoxazole
  - Quinoline derivatives
  - Penicillins, Cephalosporins & Other  Lactams
  - Aminoglycosides
  - Macrolides
  - Tetracyclines & Chloramphenicol

**Pharmacotherapy of UTI**

- General principles of Antimicrobial use (n=1)  
 Antimycobacterial therapy: Anti-Kochs agents; Anti-leprotic agents (n=3)

*Pharmacotherapy of tuberculosis*

Antiprotozoal agents:

- Antiamoebic, Antimalarials and Anti Kala azar (n=3)

Pharmacotherapy of malaria

- Anthelmintics (n=1)

*(against intestinal Nematodes and Cestodes; extra intestinal Nematodes and Trematodes)*

- Antifungal agents (n=1)

- Antiviral agents including antiretroviral agents (n=2) Desirable To Know

- Pharmacotherapy of STDs (n=1)

- Principles of cancer chemotherapy and their adverse drug reactions (n=1) Nice To Know  
*(individual agents and regimes need not be taught)*

**I) ENDOCRINOLOGY: (N=12 ± 2)**

**Introduction to endocrinology**

*(including Hypothalamic and Anterior Pituitary hormones)* (n=1)

Steroids (n=2)

*Glucocorticoids: Use and Misuse*

Oestrogens & antagonists (n=1)

Progestins & antagonists (n=1)

Oral contraceptives & profertility agents (n=1)

**PHARMACOTHERAPY INCLUDING CANCER CHEMOTHERAPY: (N=22 ± 2)**

*Fertility control*

General considerations

(n=1)

Agents affecting calcification

(n=1)

Antidiabetic agents: Insulin; Oral antidiabetic drugs

(n=2)

*Pharmacotherapy of Diabetes Mellitus*

**J) AGENTS USED IN GASTROINTESTINAL DISORDERS: (N=2)**

Pharmacotherapy of nausea & vomiting

(n=1)

Pharmacotherapy of peptic ulcer

(n=1)

*Management of dyspepsia*

*Management of diarrhoea and constipation*

**K) PERIOPERATIVE MANAGEMENT: to be covered as a case study**

Preanaesthetic medication

Preparation of surgical site: antiseptics etc.

Local Anaesthetics

Skeletal muscle relaxants

Drugs used in post-operative period: analgesics, antiemetics etc.

**L) MISCELLANEOUS TOPICS – II**

(N=5-7)

Drug-Drug Interactions

(n=1)

Drug use at extremes of age, in pregnancy & in organ dysfunction

(n=2)

Use of chelating agents in heavy metal poisonings; Environmental & occupational toxicants and principles of management (particularly cyanide and CO)

(n=1) Nice To Know

Ocular pharmacology

(n=1)

Dermatopharmacology

(n=1)

General Anesthetics...

DK

*Pharmacotherapy of glaucoma and conjunctivitis*

**M) RATIONAL PHARMACOTHERAPY:**

(N=4)

Prescription writing and P-drug concept

Nice To Know

Rational Drug Use; Essential Drug List (EDL)

Desirable To Know

**Criticism with reference to Fixed Drug Combinations (FDCs)**

Use and misuse of commonly used preparations: vitamins, antioxidants, enzymes etc.

*d. Term-wise distribution*



### I term

Introduction  
General pharmacology  
Autonomic pharmacology  
**Drugs acting on cardiovascular system including drugs affecting coagulation and those acting on the kidneys**

### II term

Prescription writing and P-drug concept  
Rational use of drugs; Essential drug list  
**Neuro-psychiatric pharmacology including inflammation, pain and substance abuse**  
Miscellaneous topics - I  
Chemotherapy  
Endocrinology

### III term

**Agents used in gastro-intestinal disorders**  
Peri operative management

#### Miscellaneous topics

**Criticism with reference to FDCs**  
Use and misuse of commonly used preparations: vitamins, antioxidants, enzymes etc.

#### *e. Practicals: Total hours, number & contents*

*Total hours:* 120

*Number:* 18

*Contents:*

#### I term practicals

(N=7)

Introduction to Practical Pharmacology, Prescription Writing, Pharmacokinetics I, Routes of Administration: Oral, Routes of Administration: Topical, Routes of Administration: Parenteral, Pharmacokinetics II: Applied Pharmacokinetics

## II term practicals

(N=7)

Pharmacodynamics I (Isolated Tissue, Cat NM junction), Pharmacodynamics II (Dog: BP and Respiration), Screening Techniques for New Drugs, Adverse Drug Reactions, Rational Pharmacotherapy I, Rational Pharmacotherapy II, Sources of Drug Information including scrutiny of Promotional Literature

## III term practicals

(N=4)

Case Study 1, Case Study 2  
Revision Practical (n=2)

### *f. Books recommended :*

1. Basic & Clinical Pharmacology. Katzung BG (Ed), Publisher: Prentice Hall International Ltd., London.
2. Pharmacology & Pharmacotherapeutics. Satoskar RS, Bhandarkar SD (Ed), Publisher: Popular Prakashan, Bombay.
3. Essentials of Medical Pharmacology. Tripathi KD (Ed), Jaypee Brothers, publisher: Medical Publishers (P) Ltd.
4. Clinical Pharmacology. Laurence DR, Bennet PN, Brown MJ (Ed). Publisher: Churchill Livingstone

### *Reference books :*

2. Goodman & Gilman's The Pharmacological Basis of Therapeutics. Hardman JG & Limbird LE (Ed), Publisher: McGraw-Hill, New York.
3. A Textbook of Clinical Pharmacology. Roger HJ, Spector RG, Trounce JR (Ed), Publisher: Hodder and Stoughton Publishers.

## 5. Evaluation

### *Methods*

Theory, Practical & viva

### *b. Pattern of Theory Examination including Distribution of Marks, Questions & Time*

# Report On Practical Marks in Pharmacology (II MBBS)

## Requirement of MCI

Actual Practicals - 25 Marks  
Viva Voce - 15 Marks

## Current Situation:

Practicals - 26 marks under four -  
Heads (A, B, C, D)

A	- 5 Marks
B	- 8 Marks
C	- 5 Marks
D	- 8 Marks

## Viva

Table 1 - 7 marks  
Table 2 - 7 Marks  
Total: 14 Marks

## New Suggested Scheme:

Practical - 25 Marks - (A) - 5 mark  
(B) - 8 mark  
(C) - 4 mark  
(D) - 8 mark

Orals (Viva)

↓

15 Marks - Table 1 - 7 Marks

The effect of New Marking will be as follows:

Theory Head: 80 Marks Theory papers  
+ 15 Marks Viva

Total: 95

Requirement for Passing (50%) - 47.5 Marks  
Fractional

Practical Head: 25 Marks

Requirement for Passing = 12.5 Marks  
Fractional

To avoid fractional Marks, the suggestion is as follows:

Theory Head - 80 Marks theory papers  
+ 15 - Viva

+ 15 Marks Internal Assessment  
110 Marks → 55 marks to Pass

Practical Head: Practical 25 marks  
Int. Assessm. 15 marks

Handwritten signature  
13/4/2015

Mark 40 - Passing



Resolution No. 3.2(b) / 2016, Dated 28/04/2016

Resolution No. 3.2(b)

Bom-45/2016, Dated 28/04/2016

Resolution no.

3.2 (b)

Resolution No. 3.2(b): Resolved to accept revised method to calculate internal assessment marks for IInd MBBS Exam effective from batch entering into 2<sup>nd</sup> MBBS from August 2016 onwards.

For Theory:

	Microbiology	Pharmacology	Pathology	FMT
III <sup>rd</sup> , IV <sup>th</sup> Sem. & Prelim Exam.	10	10	10	07
Day to day assessment as per MCI norms	05	05	05	03
Total marks	15	15	15	10

For Practical:

	Microbiology	Pharmacology	Pathology	FMT
III <sup>rd</sup> , IV <sup>th</sup> Sem. & Prelim Exam.	10	10	10	07
Day to day assessment as per MCI norms	05	05	05	03
Total marks	15	15	15	10





Mahatma Gandhi Mission

## MEDICAL COLLEGE

Sector-18, Kamothe, Navi Mumbai - 410 209.

Ph: (022) 27421723, 27422459, 7423404, Fax: (022) 27420320

E-mail: [mgmmcnb@indiatimes.com](mailto:mgmmcnb@indiatimes.com), Web: [www.mgmuhs.com](http://www.mgmuhs.com)

MGM/MED-PHARM/2016/ 770

Dated:-27-12-16

To,  
The Registrar  
MGM Medical College,  
Kamothe, Navi Mumbai.

**Sub:- Submission of Syllabus for Pharmacology (UG)**

Sir,

I am submitting herewith Syllabus for Pharmacology (UG Course)

This is for your information.

Thanking you,

(Dr. Y. A. Deshmukh)  
Prof & Head,  
Dept. of Pharmacology  
Prof. & Head Pharmacology  
M.G.M. Medical College,  
Kamothe, Navi Mumbai-410209

*Acad to speak*

MGM Institute Of Health Sciences  
INWARD NO. 10081  
DATE: 27/12/16  
REP: (Signature)

# Pharmacology and Pharmacotherapeutics

## 1. GOAL

The broad goal of teaching pharmacology to undergraduate students is to inculcate in them a rational and scientific basis of therapeutics.

## 2. EDUCATIONAL OBJECTIVES

### (a) Knowledge

At the end of the course, the student shall be able to -

- i. Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs
- ii. List the indications, contraindications, interactions and adverse reactions of commonly used drugs
- iii. Indicate the use of appropriate drug in a particular disease with consideration of its cost, efficacy and safety for -individual needs, and mass therapy under national health programmes
- iv. Describe the pharmacokinetic basis, clinical presentation, diagnosis and management of common poisonings
- v. Integrate the list the drugs of addiction and recommend the management
- vi. Classify environmental and occupational pollutants and state the management issues.
- vii. Explain pharmacological basis of prescribing drugs in special medical situations such as pregnancy, lactation, infancy and old age
- viii. Explain the concept of rational drug therapy in clinical pharmacology
- viii. State the principles underlying the concept of 'Essential Drugs'
- ix. Evaluate the ethics and modalities involved in the development and introduction of new drugs

### (b) Skills

At the end of the course, the student shall be able to -

- i. Prescribe drugs for common ailments

- ii. Identify adverse reactions and interactions of commonly used drugs
- iii. Interpret the data of experiments designed for the study of effects of drugs and bioassays which are observed during the study
- iv. Scan information on common pharmaceutical preparations and critically evaluate drug formulations
- v. Be well-conversant with the principles of pharmacy and dispense the medications giving proper instructions

### (c) Integration

Practical knowledge of rational use of drugs in clinical practice will be acquired through integrated teaching vertically with pre-clinical & clinical subjects and horizontally with other para-clinical subjects.

### 3. TOTAL DURATION

**Total duration of para-clinical teaching 3 Semesters (III,IV,V)**

Total 360 teaching days

Total number of teaching hours allotted to Pharmacology 300 hours

### 4. SYLLABUS

#### Lectures, tutorials and practical's : Distribution of teaching hours

<b>Theory:</b>	Hours
Lectures	115 ± 10 Hours
Tutorials	10 ± 5 Hours
<b>Total</b>	<b>125 ± 15 Hours</b>
<b>Practical:</b>	Hours
Practical sessions	<b>120 ± 5 Hours</b>
<b>Revision &amp; Evaluation (Internal Assessment)</b>	<b>60 Hours</b>

**Sequential organisation of contents & their division****Theory:-**

<b>1<sup>st</sup> Terminal</b>		
<b>S.No.</b>	<b>Topics</b>	<b>Lecture hours</b>
<b>1.</b>	<b>General Pharmacology</b>	<b>12 ± 2</b>
a.	Introduction Sources of drugs	1
b.	Routes of drug administration	1
c.	Pharmaco-kinetics	4
d.	Pharmaco-dynamics	4
e.	Factor modifying drug actions	1
f.	ADR	1
<b>2.</b>	<b>Autonomic Nervous system</b>	<b>9 ± 2</b>
a.	General Consideration	1
b.	Adrenergic agents	2
c.	Adrenergic antagonists	2
d.	Cholinergic agonists	1
e.	Anti-cholinesterase	1
f.	Anti-cholinergic	1
g.	Skeletal muscle relaxants	1
<b>3.</b>	<b>Cardiovascular System</b>	<b>16 ± 2</b>
a.	Antihypertensive Agents	2
b.	Diuretics	2
c.	Antianginal Agents	2
d.	Anticoagulants & Coagulants	2
e.	Thrombolytics & Antiplatelet agents	2
f.	Drugs for CCF	2
g.	Antiarrhythmic agents	2
h.	Management of Shock	1
i.	Hypolipidemic agents	1
<b>4.</b>	<b>Haemantitics &amp; Haematopoetic factors</b>	<b>2</b>

<b>2<sup>nd</sup> Terminal</b>		
<b>5.</b>	<b>Central Nervous System</b>	<b>15 ± 2</b>
a.	Introduction to CNS	1
b.	Sedative & Hypnotics	2
c.	Antianxiety	1
d.	Antipsychotics	1
e.	Antidepressants	1
f.	Antiepileptics	2
g.	Neurodegenerative disorders (Parkinson's Disease)	1
h.	General anesthetics	1
i.	Local anesthetics	1
j.	NSAIDS	2
k.	Opioids	2
<b>6.</b>	<b>Respiratory and Miscellaneous topics</b>	<b>10 ±2</b>
a.	Autocoids, 5 HT, Antagonists Eicosanoids, RA & Gout	4
b.	Antihistamines	1
c.	Drugs for Cough	1
d.	Drugs for Bronchial asthma	2
e.	Immunomodulators	1
f.	Drugs acting on uterus	1
<b>7.</b>	<b>Chemotherapy</b>	<b>25 ±2</b>
a.	General Considerations	1
b.	Sulphonamides & Cotrimoxazole	1
c.	Fluroquinolones	1
d.	Penicillins	2
e.	Cephalosporins & other beta lactams	1
f.	Aminoglycosides	1
g.	Macrolides	1
h.	Tetracyclines & Chloramphenicol	2
i.	Pharmacotherapy of UTI	1
j.	Antitubercular drugs	2
k.	Antileprotic agents	2
l.	Antimalarial agents	2
m.	Antiamoebics & Anti kala-azar	1
n.	Anthelmintics	1
o.	Antifungal agents	1
p.	Antiviral agents	2
q.	Pharmacotherapy of STDs	1
r.	Cancer chemotherapy	2



<b>8.</b>	<b>Endocrinology</b>	<b>14 ± 2</b>
a.	Introduction to Endocrinology	1
b.	Glucocorticoids	2
c.	Estrogens & antagonists	2
d.	Progestins & antagonists	2
e.	Oral Contraceptives & Profertility agents	1
f.	Testosterone & anabolic steroids	1
g.	Thyroxine & antithyroids	2
h.	Agents affecting calcification	1
i.	Diabetes mellitus	2
<b>Preliminary examination</b>		
<b>9.</b>	<b>Gastrointestinal System</b>	<b>5 ± 2</b>
a.	Pharmacotherapy of peptic ulcer	2
b.	Pharmacotherapy of nausea & vomiting	1
c.	Management of diarrhea	1
d.	Pharmacotherapy constipation	1
<b>10.</b>	<b>Miscellaneous topics</b>	<b>7 ± 2</b>
a.	Drug-drug interactions	1
b.	Drugs used at extreme of age, in pregnancy & organ dysfunction	1
c.	Chelating agents	1
d.	Ocular Pharmacology	1
e.	Dermatology Pharmacology	1
f.	Chelating agents	1
g.	Vaccine	1
<b>3<sup>rd</sup> Terminal Examination</b>		
<b>Total Theory Hours (including tutorials)</b>		
		<b>125 ± 15</b>

PRACTICALS: -

TOTAL HOURS= 120

S.No.	Topics	Hours
	<b>1<sup>ST</sup> Terminal Portion</b>	<b>30 ± 2</b>
1.	Introduction to practical Pharmacology	3
2.	Prescription writing	3
3.	Pharmacokinetics-I	3
4.	Pharmacokinetics-II	3
5.	Routes of Administration ( Oral) + Drug Museum demo	6
6.	Routes of Administration ( Topical) + Drug Museum	6
7.	Routes of Administration ( Parenteral) + Drug Museum	6
	<b>2<sup>ND</sup> Terminal Portion</b>	<b>45 + 2</b>
1.	Pharmacy –Anti-pyretic solution	3
2.	Pharmacy – Mist alba	3
3.	Pharmacy – Turpentine liniment	3
4.	Pharmacy – liquid paraffin emulsion	3
5.	Pharmacy – Calamine lotion	3
6.	Pharmacy - ORS	3
7.	Pharmacy – Whitfields ointment	3
8.	Pharmacodynamics- I	3
9.	Pharmacodynamics- II	3
10.	Screening techniques for New Drugs	6
11.	Adverse Drug Reactions -I	3
12.	Adverse Drug Reactions -II	3
13.	Rational Pharmacotherapy- I	3
14.	Rational Pharmacotherapy- II	3
15.	Sources of Drug Information	3
	<b>Prelim portion</b>	<b>45 + 2 hours</b>
1.	Case Study- I	3
2.	Case Study- II	3
3.	Prescription writing (single drug therapy)	6
4.	Prescription writing (Multiple drug therapy)	6
5.	Criticism of Prescription	6
6.	Subjective and objective	3
7.	Fixed dose combination	6
8.	Revision Practicals	12
	<b>Total practical</b>	<b>120 hours</b>
	<b>Exam hours</b>	<b>60 hours</b>
	<b>Grand total</b>	<b>180 hours</b>

**TUTORIALS: 10 ± 5 hours**

S.No.	Topics	hours
1.	Pain management	2
2.	Drug interactions	1
3.	Adverse drug reactions	2
4.	Drugs for glaucoma	1
5.	Treatment of shock	1
6.	Management of Rheumatoid arthritis	1
7.	Atropine and atropine substitutes	1
8.	Glucocorticoids	1
9.	Antimicrobial resistance	1
10.	Rationale pharmacotherapy	2

**ASSESSMENT EXAMINATION**

Sr.nos	Exam	Theory marks	Practical marks
1	1 <sup>st</sup> Terminal Exam	40 marks	40 marks
2	2 <sup>nd</sup> Terminal Exam	40 marks	40 marks
3	Preliminary Exam (Paper 1 and Paper 2)	80 marks (40 +40 marks)	40 marks

**EXAM PORTION AND PATTERN****1<sup>st</sup> Terminal Exam****Theory :-Portion**

- Introduction
- General pharmacology
- Autonomic pharmacology
- Drugs acting on cardiovascular system including drugs affecting coagulation and those acting on the kidneys

**Pattern:-**

Sections	Nature of Question- Two Theory Papers	Total no of Questions	Mark(s) per Question	Total Marks
A)	Multiple choice Questions (MCQs)	16	½	08
B)	Short Answer Questions (SAQs)	4 out of 6	4	16
C)	Long Answer Questions (LAQs)	2 out of 3	8	16
	<b>Total</b>			<b>40</b>

**Practical topics**

Sr. nos	Practical topic
1	Introduction to practical Pharmacology
2	Prescription writing
3	Pharmacokinetics-I
4	Pharmacokinetics-II
5	Routes of Administration ( Oral)
6	Routes of Administration ( Topical)
7	Routes of Administration ( Parenteral)

**Practical Pattern:-**

Sr. nos	Items	Marks	Total Marks
1	Spots	10 x 2marks	20 Marks
2	Theory Viva	20	20 Marks
	<b>Total</b>		<b>40 Marks</b>

**2<sup>nd</sup> Terminal Examination****Theory: Portion**

- Central nervous system, Neuro-psychiatric pharmacology including inflammation, pain and substance abuse
- Antimicrobials and Chemotherapy
- Endocrinology
- Respiratory system

**Pattern:-**

Sections	Nature of Question- Two Theory Papers	Total no of Questions	Mark(s) per Question	Total Marks
A)	Multiple choice Questions (MCQs)	16	½	08
B)	Short Answer Questions (SAQs)	4 out of 6	4	16
C)	Long Answer Questions (LAQs)	2 out of 3	8	16
	<b>Total</b>			<b>40</b>

**Practical:****Portions**

S. No	Topics
1	Pharmacy – Whitfields ointment
2	Pharmacodynamics- I
3	Pharmacodynamics- II
4	Screening techniques for New Drugs
5	Adverse Drug Reactions -I
6	Adverse Drug Reactions -II
7	Rational Pharmacotherapy- I
8	Rational Pharmacotherapy- II
9	Sources of Drug Information

**Pattern:-**

Items	Marks	Total Marks
Spots	10 x 2	20 Marks
Pharmacy	5	5 Marks
<b>Theory Viva</b>	<b>15</b>	<b>15 Marks</b>

**Prelim Examination****Theory: portion****PHARMACOLOGY PAPER I**

General Pharmacology including drug- drug interactions; Autonomic Nervous System, Cardiovascular System including drugs affecting Coagulation and those acting on the Kidneys; Haematinics; Agents used in Gastro-Intestinal Disorders; Ocular pharmacology; Drug use at extremes of age, in pregnancy & in organ dysfunction; Diagnostic & Chelating agents; Environmental & Occupational Pollutants; Vitamins

**PHARMACOLOGY PAPER II**

Neuro-Psychiatric Pharmacology including Antiinflammatory-Analgesics and Addiction & its management; Pharmacology in Surgery (particularly peri-operative management); Chemotherapy including Cancer Chemotherapy; Endocrinology; Dermatology; Miscellaneous Topics I (Lipid-derived autacoids; Nitric Oxide; Allergy - Histaminics & Antihistaminics including anti-vertigo; Anti Asthmatics; Anti- tussive agents; Immunomodulators; Vaccines & sera; Drugs acting on the uterus)



**Theory Pattern****Paper-I**

Sections	Nature of Question-	Total no of Questions	Mark(s) per Question	Total Marks
A)	Multiple choice Questions (MCQs)	16	½	08
B)	Short Answer Questions (SAQs)	4 out of 6	4	16
C)	Long Answer Questions (LAQs)	2 out of 3	8	16
	<b>Total</b>			<b>40</b>

**Paper-II**

Sections	Nature of Question-	Total no of Questions	Mark(s) per Question	Total Marks
A)	Multiple choice Questions (MCQs)	16	½	08
B)	Short Answer Questions (SAQs)	4 out of 6	4	16
C)	Long Answer Questions (LAQs)	2 out of 3	8	16
	<b>Total</b>			<b>40</b>

**Total Marks: Paper I + Paper II =80 Marks**

**Practical's: Syllabus**

- All Practical topics covered in the Journal ,Subjective, Objective effects of drugs, Pharmacy preparations, Prescription Writing, Fixed Dose Combination & Criticism of Prescription

**Pattern:-**

Actual Practicals - 25 Marks

Viva Voce - 15 Marks

**Practicals - 25 Marks under four Heads (A, B, C, D)**

A) Prescription Writing - 5 Marks

B) CCR & FDC - 4+4 =8 Marks

C) Pharmacy - 4 Marks

D) Spots - 8 Marks

**Viva:-**

Paper 1	8 Marks
Paper 2	7 Marks
<b>Total</b>	<b>15 Marks</b>

**Total practical marks (practical + Viva) = 40 mark**

**INTERNAL ASSESSMENT FOR PHARMACOLOGY****For Theory**

<b>Sr. nos.</b>	<b>Assessment</b>	<b>Theory</b>
<b>1</b>	1 <sup>st</sup> term, 2 <sup>nd</sup> term and prelim exam	10 marks
<b>2</b>	Day to day assessment as per MCI Norms	5 marks
<b>3</b>	<b>Total</b>	<b>15 marks</b>

**For Practical**

<b>Sr. nos.</b>	<b>Assessment</b>	<b>Practical</b>
<b>1</b>	1 <sup>st</sup> term, 2 <sup>nd</sup> term and prelim exam	10 marks
<b>2</b>	Day to day assessment as per MCI Norms	5 marks
<b>3</b>	<b>Total</b>	<b>15 marks</b>

**PRACTICAL JOURNAL:-**

Sr.No.	Topics
1	Introduction to practical Pharmacology
2	Prescription writing
3	Pharmacokinetics-I
4	Routes of Administration ( Oral)
5	Routes of Administration ( Topical)
6	Routes of Administration ( Parenteral)
7	Pharmacokinetics-II
8	Pharmacodynamics- I
9	Pharmacodynamics- II
10	Screening techniques for New Drugs
11	Adverse Drug Reactions
12	Rational Pharmacotherapy- I
13	Rational Pharmacotherapy- II
14	Sources of Drug Information
15	Case Study- I
16	Case Study- II
Additional	
	Prescription writing (single drug therapy)
	Prescription writing (Multiple drug therapy)
	Criticism of Prescription
	Subjective and objective
	Fixed dose combination
	Pharmacy –Anti-pyretic solution
	Pharmacy – Mist alba
	Pharmacy – Turpentine liniment
	Pharmacy – liquid paraffin emulsion
	Pharmacy – Calamine lotion
	Pharmacy - ORS
	Pharmacy – Whitfields ointment

**TEXT BOOK / REFERENCE BOOK:****Books recommended** (latest edition recommended):

1. Pharmacology & Pharmacotherapeutics. Satoskar RS, Bhandarkar SD (Ed), Publisher: Popular Prakashan, Bombay.
2. Essentials of Medical Pharmacology. Tripathi KD (Ed), Jaypee Brothers, publisher: Medical Publishers (P) Ltd.
3. Clinical Pharmacology. Laurence DR, Bennet PN, Brown MJ (Ed). Publisher: Churchill Livingstone
4. Basic & Clinical Pharmacology. Katzung BG (Ed), Publisher: Prentice Hall International Ltd., London.

**Reference books** (latest edition recommended) :

1. Goodman & Gilman's The Pharmacological Basis of Therapeutics. Hardman JG & Limbird LE (Ed), Publisher: McGraw-Hill, New York.
2. A Textbook of Clinical Pharmacology. Roger HJ, Spector RG, Trounce JR (Ed), Publisher: Hodder and Stoughton Publishers.

**INTEGRATED TEACHING**

Topic for integrated lectures/ teaching (At least 5 topics)

Sr.No.	Topics
1	Treatment of Diabetes
2	Treatment of Hypertension
3	Treatment of Bronchial asthma
4	Treatment of Mental Depression
5	Pain management
6	Management of Epilepsy
7	Management of Hyperthyroidism
8	Management of Tuberculosis
9	Management of Malaria
10	Management of HIV

**Resolution passed in BOM – 48/2017, dated 24/01/2017**

**Item No. 5.7: BOS (Para clinical) dated 14.09.2016**

- f) Use of simulation technique for UG (Pharmacology) for demonstration of short experiment like miotic/mydratic, feeding, blood withdrawn technique.

**Resolution No. 5.7(f):** Resolved that Department of Pharmacology at MGM Medical College at Navi Mumbai must adopt the simulation technique for UG students for demonstration of short experiment like miotic/mydratic, feeding, blood withdrawn technique. As Department of Pharmacology at MGM Medical College at Aurangabad is already using these techniques, they can be consulted for this.



**Resolution No. 1.3.7.1 of BOM-51/2017:** Resolved to continue the current Internal Assessment pattern for MBBS (i.e. 5 marks for Day-to-day assessment) for Pre and Para Clinical subjects (Anatomy, Physiology, Biochemistry, Microbiology, Pharmacology, Pathology and FMT). For rest of the subjects, Internal Assessment is to be calculated from terminal/Post end exam marks and Prelims examination, with immediate effect.

**Resolution No. 1.3.8.13 of BOM-51/2017:** Resolved to approve the topics for vertical and horizontal integrated teaching in II<sup>nd</sup> MBBS Curriculum from batch entering in II<sup>nd</sup> MBBS in 2017-18 onwards. **[Annexure X]**

### 3. Pharmacology

#### Horizontal integrated teaching

- Treatment of Tuberculosis
- Treatment of Malaria

#### Vertical integrated teaching

- Treatment of Shock
- Treatment of diabetes mellitus

Resolution No. 1.3.8.11 of BOM-51/2017: Resolved to approve the topics to be included under Bioethics in UG. ~~Annexure IX~~

## Bioethics Topics for UG/PG

### Topics for IInd MBBS in Pharmacology syllabus

- Rational drug prescribing
- Polypharmacy

**Resolution No. 1.3.8.8 of BOM-51/2017: Resolved to:**

- (i) Introduce problem case discussion (problem based learning) in all para-clinical subjects on topics identified from batch entering in II<sup>nd</sup> MBBS in 2017-18 onwards. **Annexure-VI**

Problem based learning topics for undergraduates (MBBS)

**3. Pharmacology**

- Treatment of Hypertension
- Treatment of diabetes
- Pharmacology of shock

**Resolution No. 1.3.8.3 of BOM-51/2017:** Resolved to include ADR Reporting in II<sup>nd</sup> MBBS Curriculum for the batch entering in 2<sup>nd</sup> MBBS in academic year 2017-18.

---

**Resolution No. 1.3.8.4 of BOM-51/2017:** Resolved to introduce demonstration of various injection techniques on dummy model (Mannequins) in Pharmacology Practical teaching for the batch entering in 2<sup>nd</sup> MBBS in academic year 2017-18.

2<sup>nd</sup> year MBBS

Pharmacology

---

**Resolution No. 1.3.8.9 of BOM-51/2017:** Resolved to approve the updated Practical Record book for 2<sup>nd</sup> MBBS (Pharmacology) from batch entering into 2<sup>nd</sup> MBBS from academic year 2017-18 onwards. **Annexure-VII**



**Resolution No. 3.5.9 of BOM-52/2018:**

- a) BOM reiterated the earlier BOM resolution as mentioned below:

**Resolution No. 1.3.7.5 of BOM-51/2017:** It was resolved that

- i) In all the subjects of all courses, MCQ weightage (Section A) shall be a maximum of 20% of the total marks in each paper.
- ii) BOS will have to accordingly workout the changes in Section B & C weightage and put up in forthcoming BOS meeting.
- iii) Further University Examination section must validate the MCQ Question Bank by Faculties before giving it to question paper-setter.

- b) To be effective from:

- (i) Ist MBBS - Batch appearing in University August/September 2018 examination onwards.
- (ii) IInd MBBS - Batch appearing in University January 2019 examination onwards.
- (iii) IIIrd MBBS (Part I) and IIIrd MBBS (Part II) - Batch appearing in University January 2019 examination onwards.

**Resolution No. 3.6.1 of BOM-52/2018:** Resolved to approve the updated Practical Record-book for 2nd MBBS (Pharmacology), with effect from batch entering in 1<sup>st</sup> MBBS in August/September 2017 onwards. [Annexure-III] ✓

**Resolution No. 3.6.2 of BOM-52/2018:** Resolved to introduce hands-on training of various routes of administration on dummy model (Mannequins) in Pharmacology Practical teaching for MBBS, with effect from batch entering in IInd MBBS in August/September 2017 onwards.. [Annexure-IV] ✓

Annexure 4

Annexure-IV

**MINIMUM STANDARD REQUIREMENTS FOR  
THE MEDICAL COLLEGE  
FOR 150 ADMISSIONS ANNUALLY  
REGULATIONS, 1999**



**(AMENDED – UP TO AUGUST 2017)**

**MEDICAL COUNCIL OF INDIA  
Pocket – 14, Sector 8, Dwarka,  
NEW DELHI – 110 077**

**Phone: +91-11-25367033, 25367035, 25367036  
Fax: +91-11-25367024  
E-mail: [mci@bol.net.in](mailto:mci@bol.net.in), [contact@mciindia.org](mailto:contact@mciindia.org)  
Website: [www.mciindia.org](http://www.mciindia.org)**

## Annexure 4

*The above Schedule III – "EQUIPMENT (for various departments in the College and Hospitals)." for all the departments shall be substituted in terms of Gazette Notification dated 28.08.2017 as under: -*

### **SCHEDULE III**

#### **EQUIPMENT (Lists for various Departments in the College and Hospitals).**

Note: These recommendations are minimum requirements and will serve as a guide to the institutions with regard to the equipment required. They are not meant to be an exhaustive list and the staff of the various departments will use their initiative and experience for equipping the departments.

#### **A. NON-CLINICAL DEPARTMENTS**

##### **6. PHARMACOLOGY (New List)**

###### **S.No. NAME OF THE ITEMS No. Required**

###### **(A) I. Clinical Pharmacy**

- |  |         |
|--|---------|
| 1. Special Drug Delivery systems like Metered Dose Inhalers, Spacers, Rotahalers, Nasal sprays, Transdermal patches, Insulin infusion pumps, Insulin pen etc.  | 15 sets |
| 2. Samples of dosage formulations of various types including rational and irrational FDC, Essential medicines  | 15 sets |
| 3. Manikins for demonstration of intravenous injection, enema, local, intramuscular injections, intracardiac injection and other routes of drug administration | 15 sets |

###### **(B) II. Computer Assisted Learning Laboratory**

Minimum 1 computer per 10 students (Maybe shared with a similar facility in the institution) Must have computers with standard configuration and connected to the Internet, (Preferably broadband) along with an AV aids (Multimedia Projector and Screen). The PC should be installed with CAL programmes and other software for teaching experimental pharmacology. The students must have access to the National Essential Drug Lists, Standard Treatment Guidelines, Banned Drugs List of the CDSCO, PVPI, WHO, Price Controlled Drugs List, Antibiotic Guidelines, Hospital formulary, adverse drug reactions, and other resource material which the student can use for learning the principles of rational prescribing.

15 computers

###### **(C) III. Experimental Pharmacology**

For UG course, the facilities and equipment in the experimental lab can be shared with the Physiology department. The experiments included in the curriculum should be demonstrated through charts/photographs/models and videos.

###### **(D) IV. Clinical Pharmacology**

- 6 Stop watch As required
- 7 Digital Sphygmomanometer As required

8 Critical Flicker Fusion Apparatus As required

9 Pupillometer As required

10 Chart, Models and videos to illustrate the pharmacodynamic and pharmacokinetic properties of drugs, adverse drug reactions, drug administration techniques As required

**(E) V. General:**

11 Laptop 1

12 Desktop Computer, with Printer 2

13 Photocopier and Scanner 1

14 Multimedia Projector with Screen 2



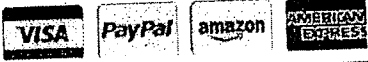
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  - [Heartsine Samaritan AEDs](#)
  - [Defibtech AEDs](#)
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  - [Cardiac Science AEDs](#)
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  - [AED Trainers](#)
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  - [Ambu Manikins](#)
  - [Simulaids Manikins](#)
  - [Gaumard Manikins](#)

Rs 2,41,630/-  
one set

15 Sets - 36.24 L

- 1) IM - 1,87,655
- 2) IV - 40,000/-
- 3) Intradumel - 13,975/-

Total = 2,41,630/-

One set

15 Sets - 36.24 L





I.V. Injection Arm (Left Arm)

(1)

\$626.85

40,000/-

ADD TO CART



Injection Simulator (Upper Leg)

\$1,653.75

ADD TO CART



Injection Simulator (Buttock)

\$1,653.75

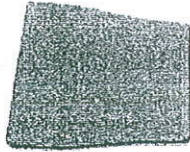
ADD TO CART



Lumbar Epidural Injection Trainer

\$2,105.25

ADD TO CART



Smooth White Skin for W19334

\$159.60

ADD TO CART



Ligamentum Flavum (Vertebral Bones and Intraspinial Ligament)

\$1,258.95

ADD TO CART



5 Spinal Cord Fluid-Filled Sachets

\$144.90

ADD TO CART



Muscle Layer

\$144.90

ADD TO CART



Instrument Kit (Puncture Needle & Syringe)

\$239.40

ADD TO CART



Intra-Muscular Injection Pad



I.M. Injection Simulator with Control Function

(2)



Buttockmate I.M. Injection Simulator

(53)

\$114.45

✓  
\$5,972.40

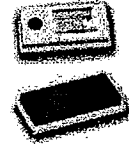
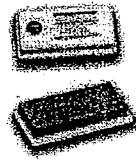
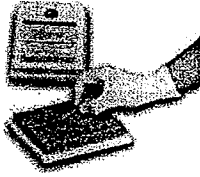
\$2,887.50

ADD TO CART

ADD TO CART

ADD TO CART

2,87,655/-



Four-Vein Venipuncture Training Aid Latex Free Dermalike II & V

Two-Vein Venipuncture Training Aid - Latex Free Dermalike II And Dermalike V

Two-Vein Venipuncture Training Aid, Latex Free Dermalike II And Dermalike V, Darkly Pigmented

\$138.00

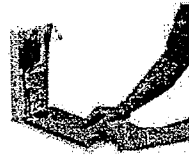
\$96.00

\$96.00

ADD TO CART

ADD TO CART

ADD TO CART



Four-Vein Venipuncture Training Aid, Latex Free Dermalike II And Dermalike V, Darkly Pigmented

Advanced Four-Vein Venipuncture Training - Latex Free Dermalike II And Dermalike V

New Vein Set W/Umbilical Valve Attached-Latex Free (Replaces # 0803)

\$138.00

\$297.00

\$96.00

ADD TO CART

ADD TO CART

ADD TO CART



Adult Venipuncture & Injection Training Arm

Portable IV Hand

Portable IV Arm

\$547.00

\$200.00

\$200.00

ADD TO CART

ADD TO CART

ADD TO CART



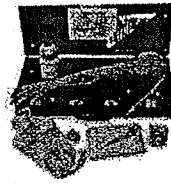
54



Portable IV Arm & Hand (Set 2)

\$355.00

ADD TO CART



Pediatric IV & Injection Arm

\$408.00

ADD TO CART



Intramuscular Injection Simulator

\$618.00

ADD TO CART



Arterial Puncture Arm

\$561.00

ADD TO CART



Pediatric Injection Head

\$465.00

ADD TO CART



Intradermal Injection Arm

\$215.00

ADD TO CART

3

13,975



Spinal Injection Simulator

\$1,035.00

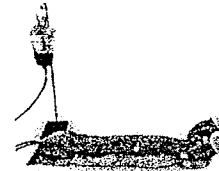
ADD TO CART



Intraosseous Infusion Simulator

\$663.00

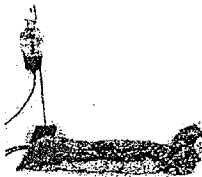
ADD TO CART



Advanced IV Arm / 25 Pack

\$14,850.00

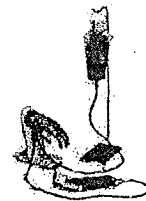
ADD TO CART



Advanced IV Arm



IV Demonstration Arm



Advanced IV Hand

55

\$635.00

ADD TO CART



Venatech IV Trainer

\$194.00

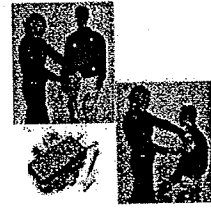
ADD TO CART



Venatech IV Trainer (Pkg 5)

\$289.00

ADD TO CART



Venatech IM/SubQ Injection Trainer

\$65.00

ADD TO CART



Injectable Training Arm

\$299.00

ADD TO CART



Intraosseous Infusion Leg Only, Infant

\$83.00

ADD TO CART



Intraosseous Infusion/Femoral Access Leg on Stand

\$541.00

ADD TO CART



Adult Sternal Intraosseous Infusion Trainer

\$414.00

ADD TO CART



FAST1 Adult Sternal I/O Infusion System

\$928.00

ADD TO CART



Deluxe IV Training Arm

\$1,173.00

ADD TO CART



Currently Unavailable

ADD TO CART



\$595.70

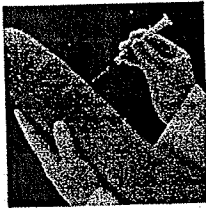
ADD TO CART



IV Hand and Arm Unit

\$447.00

ADD TO CART



Advanced Intravenous Training Arm

\$335.00

ADD TO CART



Training Arm and Hand for Intravenous Access

\$225.00

ADD TO CART

IV Training Arm

\$259.00

ADD TO CART



Training Arm and Hand for Intravenous Access

\$225.00

ADD TO CART



Intraosseous Infusion System with Realistic Tibia Bones

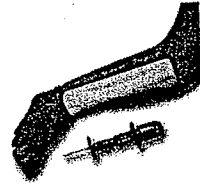
\$225.00

ADD TO CART

IV Training Hand (Right)

\$245.00

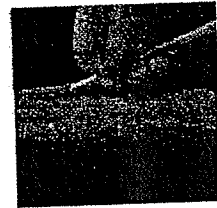
ADD TO CART



Intraosseous Infusion System with Realistic Tibia Bones

\$225.00

ADD TO CART



Intravenous Training Arm for Injection Infusion and Blood Collection Procedure

\$245.00

ADD TO CART

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**Our Company**

CPR Savers & First Aid Supply, LLC

7904 E Chaparral Rd

Suite A110-242

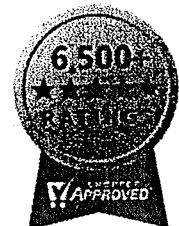
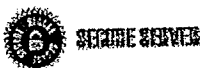
Scottsdale, AZ 85250

Toll-free: 1.800.480.1277

P: 480.946.0971

F: 480.275.7002

E: [service@cpr-savers.com](mailto:service@cpr-savers.com)



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**Our Company**

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7904 E Chaparral Rd

Suite A110-242

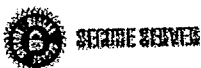
Scottsdale, AZ 85250

Toll-free: 1.800.480.1277

P: 480.946.0971

F: 480.275.7002

E: [service@cpr-savers.com](mailto:service@cpr-savers.com)



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**Resolution No. 4.2.1 of BOM-53/2018:** Resolved that the printed format of the Medico-legal examination proforma (sexual violence) may be provided to 2<sup>nd</sup> MBBS students during practical's in formative and summative assessments [**Annexure-X**], to be applicable from batch entering into 2<sup>nd</sup> MBBS 2017-18 onwards.

Annexure 30 for item NO. (4)

Annexure - X

CONFIDENTIAL

Medico-legal Examination Report of Sexual Violence

1. Name of the Hospital ..... OPD No. .... Inpatient No .....
2. Name . . . . . D/o or S/o (where known).....
3. Address.....
4. Age (as reported) ..... Date of Birth (if known).....
5. Sex (M/F/Others) .....
6. Date and Time of arrival in the hospital .....
7. Date and Time of commencement of examination.....
8. Brought by..... (Name & signatures)
9. MLC No. .... Police Station. ....
10. Whether conscious, oriented in time and place and person ✓.....
11. Any physical/intellectual/psychosocial disability .....

(Interpreters or special educators will be needed where the survivor has special needs such as hearing/speech disability, language barriers, intellectual or psychosocial disability.)

12. Informed Consent/refusal

I..... D/o or S/o.....

hereby give my consent for:

- |  |                              |                             |
|--|------------------------------|-----------------------------|
| a) medical examination for treatment                     | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| b) this medico legal examination                         | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| c) sample collection for clinical & forensic examination | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

I also understand that as per law the hospital is required to inform police and this has been explained to me.

I want the information to be revealed to the police Yes  No

I have understood the purpose and the procedure of the examination including the risk and benefit, explained to me by the examining doctor. My right to refuse the examination at any stage and the consequence of such refusal, including that my medical treatment will not be affected by my refusal, has also been explained and may be recorded. Contents of the above have been explained to me in ..... language with the help of a special educator/interpreter/support person (circle as appropriate) .....

If special educator/interpreter/support person has helped, then his/her name and signature.....

2

Name & signature of survivor or parent/Guardian/person in whom the child reposes trust in case of child (<12 yrs)

.....  
.....  
.....

With date, time & place

Name & signature/thumb impression of Witness

.....  
.....  
..... ✓

With Date, time and place

13. Marks of identification (Any scar/mole)

(1).....  
(2).....



Left Thumb impression

14. Relevant Medical/Surgical history

Onset of menarche (in case of girls) Yes No Age of onset.....  
Menstrual history - Cycle length and duration ..... Last menstrual period.....

Menstruation at the time of Incident - Yes/ No, Menstruation at the time of examination - Yes/ No

Was the survivor pregnant at time of incident - Yes/No, If yes duration of pregnancy ..... weeks

Contraception use: Yes/No..... If yes - method used: .....

Vaccination status - Tetanus (vaccinated/not vaccinated), Hepatitis B (vaccinated/not vaccinated)

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15 C.

- i. Emotional abuse or violence if any (insulting, cursing, belittling, terrorizing).....
- ii. Use of restraints if any .....
- iii. Used or threatened the use of weapon(s) or objects if any.....
- iv. Verbal threats (for example, threats of killing or hurting survivor or any other person in whom the survivor is interested; use of photographs for blackmailing, etc.) if any: .....
- v. Luring (sweets, chocolates, money, job) if any: .....
- vi. Any other:.....

15 D.

- i. Any H/O drug/alcohol intoxication: .....
- ii. Whether sleeping or unconscious at the time of the incident: .....

15 E. If survivor has left any marks of injury on assailant/s, enter details: .....

15 F. Details regarding sexual violence:

Was penetration by penis, fingers or object or other body parts (Write Y=Yes, N=No, DNK=Don't know) Mention and describe body part/s and/or object/s used for penetration.

Orifice of Victim	Penetration			Emission of Semen		
	By Penis	By body part of self or assailant or third party (finger, tongue or any other)	By Object	Yes	NO	Don't know
Genitalia (Vagina and/or urethra)						
Anus						
Mouth						

Oral sex performed by assailant on survivor	Y	N	DNK
Forced Masturbation of self by survivor	Y	N	DNK
Masturbation of Assailant by Survivor, Forced Manipulation of genitals of assailant by survivor	Y	N	DNK
Exhibitionism (perpetrator displaying genitals)	Y	N	DNK
Did ejaculation occur outside body orifice (vagina/anus/mouth/urethra)?	Y	N	DNK

5

If yes, describe where on the body			
Kissing, licking or sucking any part of survivor's body	Y	N	If Yes, describe
Touching/Fondling	Y	N	If Yes, describe
Condom used*	Y	N	DNK
If yes status of condom	Y	N	DNK
Lubricant used*	Y	N	DNK
If yes, describe kind of lubricant used			
If object used, describe object:			
Any other forms of sexual violence			

\* Explain what condom and lubricant is to the survivor

Post Incident has the survivor	Yes/No/Do Not know	Remarks
Changed clothes		
Changed undergarments		
Cleaned/washed clothes		
Cleaned/washed undergarments		
Bathed		
Douched		
Passed urine		
Passed stools		
Rinsing of mouth/Brushing/ Vomiting (Circle any or all as appropriate)		

Time since incident ..... H/o vaginal/anal/oral bleeding/discharge prior to the incident of sexual violence .....

H/o vaginal/anal/oral bleeding/discharge since the incident of sexual violence .....

H/o painful urination/ painful defecation/ fissures/ abdominal pain/pain in genitals or any other part since the incident of sexual violence

16. General Physical Examination-

- i. Is this the first examination .....
- ii. Pulse ..... BP .....
- iii. Temp. .... Resp. Rate .....
- iv. Pupils .....
- v. Any observation in terms of general physical wellbeing of the survivor .....

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17. Examination for Injuries on the body if any

The pattern of injuries sustained during an incident of sexual violence may show considerable variation. This may range from complete absence of injuries (more frequently) to grievous injuries (very rare).

(Look for bruises, physical torture injuries, nail abrasions, teeth bite marks, cuts, lacerations, fracture, tenderness, any other injury, boils, lesions, discharge specially on the scalp, face, neck, shoulders, breast, wrists, forearms, medial aspect of upper arms, thighs and buttocks) Note the Injury type, site, size, shape, colour, swelling signs of healing simple/grievous, dimensions.)

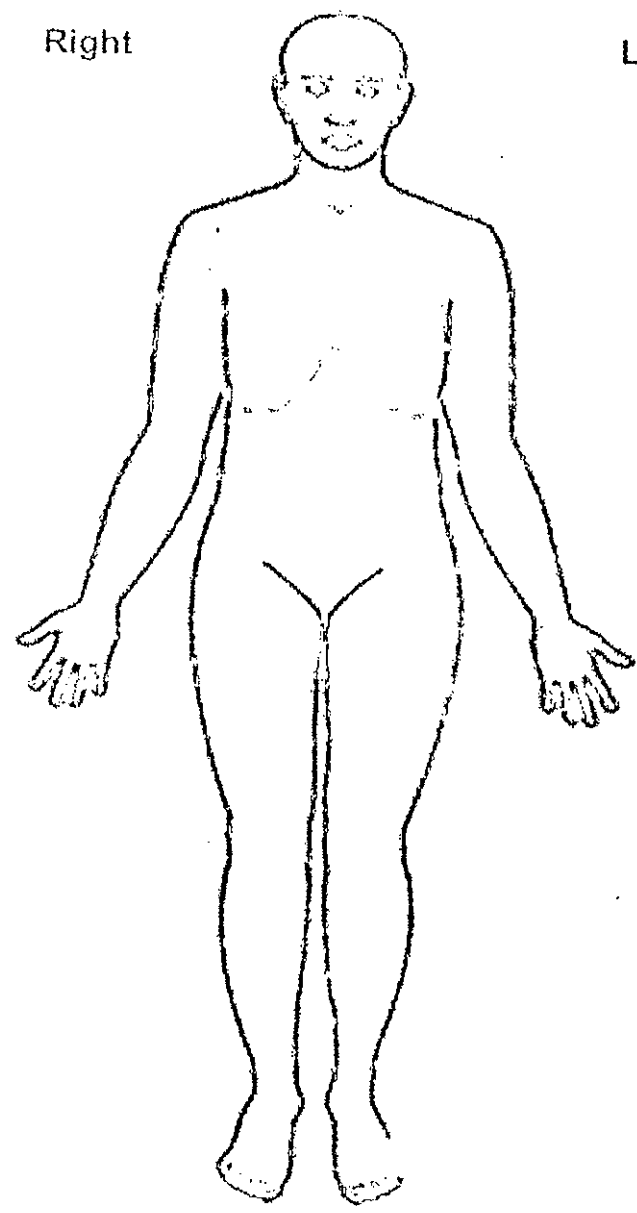
Scalp examination for areas of tenderness (if hair pulled out/ dragged by hair)	
Facial bone injury: orbital blackening, tenderness	
Petechial haemorrhage in eyes and other places	
Lips and Buccal Mucosa / Gums	
Behind the ears	
Ear drum	
Neck, Shoulders and Breast	
Upper limb	
Inner aspect of upper arms	
Inner aspect of thighs	
Lower limb/Buttocks	
Other, please specify	



7

Right

Left

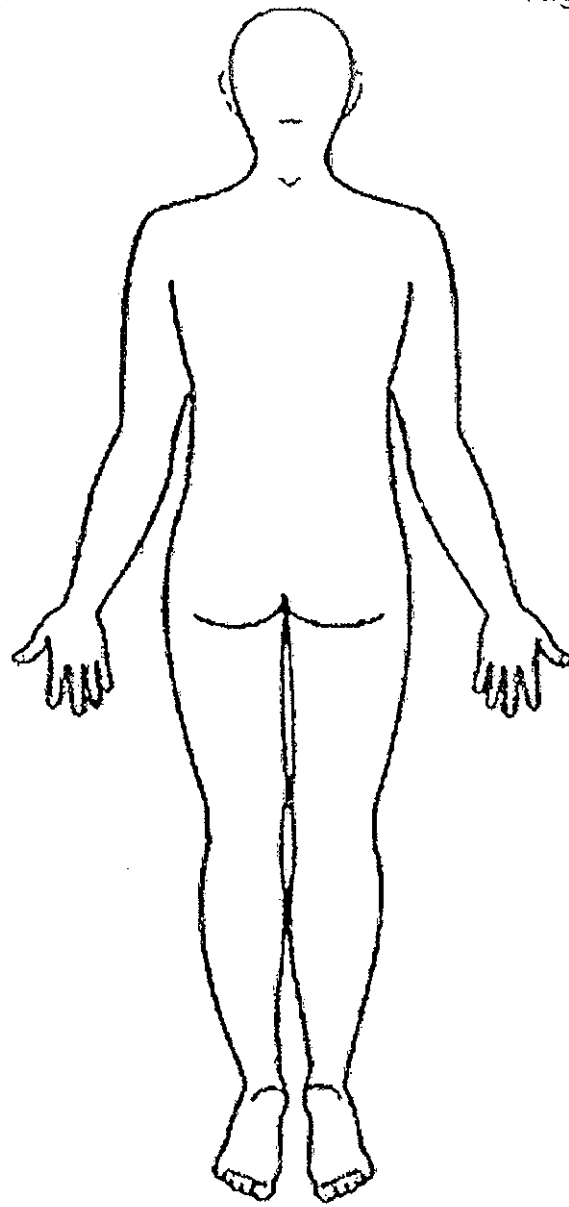


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8

Left

Right



38

18. Local examination of genital parts/other orifices\*:

A. External Genitalia: Record findings and state NA where not applicable.

Body parts to be examined	Findings	
Urethral meatus & vestibule		
Labia majora		
Labia minora		
Fourchette & Introitus		
Hymen Perineum		
External Urethral Meatus		✓
Penis		
Scrotum		
Testes		
Clitoropenis		
Labioscrotum		
Any Other		

\* Per/Vaginum /Per Speculum examination should not be done unless required for detection of injuries or for medical treatment.

P/S findings if performed .....

P/V findings if performed .....

Record reasons if P/V of P/S examination performed .....

C. Anus and Rectum (encircle the relevant)

Bleeding/tear/discharge/oedema/tenderness

D. Oral Cavity - (encircle the relevant)

Bleeding/discharge/tear/oedema/tenderness

19. Systemic examination:

Central Nervous System: .....

Cardio Vascular System: .....

Respiratory System: .....

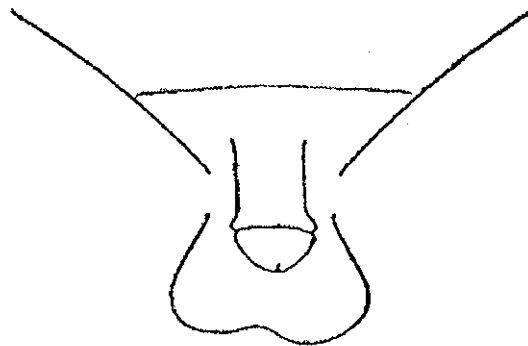
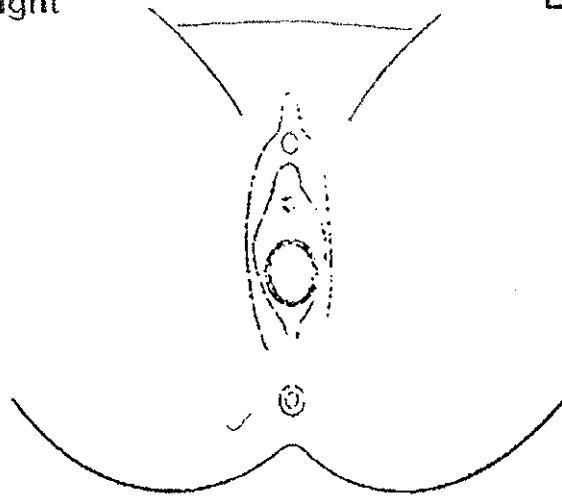
Chest: .....

Abdomen: .....

10

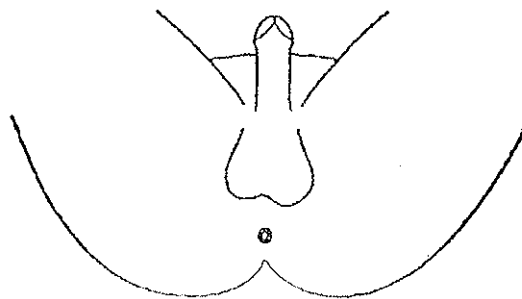
Right

Left



Right

Left



40

11

20. Sample collection/investigations for hospital laboratory/ Clinical laboratory

- 1) Blood for HIV, VDRL, HbsAg
- 2) Urine test for Pregnancy/
- 3) Ultrasound for pregnancy/internal injury
- 4) X-ray for injury

21. Samples Collection for Central/ State Forensic Science Laboratory

- 1) Debris collection paper
- 2) Clothing evidence where available – (to be packed in separate paper bags after air drying)

List and Details of clothing worn by the survivor at time of incident of sexual violence

✓

3) Body evidence samples as appropriate (duly labeled and packed separately)

	Collected/Not Collected	Reason for not collecting
Swabs from Stains on the body (blood, semen, foreign material, others)		
Scalp hair (10-15 strands)		
Head hair combing		
Nail scrapings (both hands separately)		
Nail clippings (both hands separately)		
Oral swab		
Blood for grouping, testing drug/alcohol intoxication (plain vial)		
Blood for alcohol levels (Sodium fluoride vial)		
Blood for DNA analysis (EDTA vial)		
Urine (drug testing)		
Any other (tampon/sanitary napkin/condom/object)		

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4) Genital and Anal evidence (Each sample to be packed, sealed, and labeled separately-to be placed in a bag)

\* Swab sticks for collecting samples should be moistened with distilled water provided.

	Collected/Not Collected	Reason for not collecting
Matted pubic hair		
Pubic hair combing (mention if shaved)		
Cutting of pubic hair (mention if shaved)		
Two Vulval swabs (for semen examination and DNA testing)		
Two Vaginal swabs (for semen examination and DNA testing)		
Two Anal swabs (for semen examination and DNA testing)		
Vaginal smear (air-dried) for semen examination		
Vaginal washing		
Urethral swab		
Swab from glans of penis/clitropenis		

\*Samples to be preserved as directed till handed over to police along with duly attested sample seal.

22. Provisional medical opinion

I have examined (name of survivor).....M/F/Other.....aged..... reporting\_ (type of sexual violence and circumstances)....., XYZ days/hours after the incident, after having (bathed/douched etc)..... My findings are as follows:

- Samples collected (for FSL), awaiting reports
- Samples collected (for hospital laboratory)
- Clinical findings
- Additional observations (if any)

13

23. Treatment prescribed:

Treatment	Yes	NO	Type and comments
STI prevention treatment			
Emergency contraception			
Wound treatment			
Tetanus prophylaxis			
Hepatitis B vaccination			
Post exposure prophylaxis for HIV			
Counselling			
Other			

24. Date and time of completion of examination .....

This report contains ..... number of sheets and ..... number of envelopes.

Signature of Examining Doctor

Name of Examining Doctor

Place:

Seal

25. Final Opinion (After receiving Lab reports)

Findings in support of the above opinion, taking into account the history, clinical examination findings and Laboratory reports of ..... bearing identification marks described above, ..... hours/ days after the incident of sexual violence, I am of the opinion that:

Signature of Examining Doctor

Name of Examining Doctor

Place:

Seal

COPY OF THE ENTIRE MEDICAL REPORT MUST BE GIVEN TO THE SURVIVOR/ VICTIM FREE OF COST IMMEDIATELY

13



**Resolution No. 4.3.5 of BOM-53/2018:** Resolved to add reference book entitled “ESSENTIAL IN RESPIRATORY MEDICINE” by Dr. S.H. Talib in the UG/PG curriculum in medicine and allied subjects

**Resolution No. 4.5.2.1 of BOM-55/2018:** Resolved to introduce training in 'Research Methodology' for 3<sup>rd</sup> Semester MBBS students entering in 3<sup>rd</sup> Semester from September 2018 onwards. It was further resolved that responsibility of this training will be with Pharmacology department.

**Resolution No. 4.5.2.3 of BOM-55/2018:** Resolved to provide the printed standard format of the Medico-legal examination (Age,Alcoholic, Weapon,Injury,Death,Potency,Sickness,Fitness) to 2<sup>nd</sup> MBBS students during practical examination in formative and summative assessments. [Annexure-34-A,B,C,D,E,F,G,H]

Recd. on 18/11/2018

**Examination for Determination/Estimation of Age**

Annexure - 34-A

To,  
The \_\_\_\_\_  
Reference : Your Letter No. \_\_\_\_\_ Dated \_\_\_\_\_  
Name : \_\_\_\_\_  
Age stated : \_\_\_\_\_ ; Sex : \_\_\_\_\_ ; Occupation : \_\_\_\_\_  
Marital status : \_\_\_\_\_  
Address : \_\_\_\_\_  
Brought by Police Constable : \_\_\_\_\_ No. : \_\_\_\_\_ ; P.S. \_\_\_\_\_  
Identified by : \_\_\_\_\_  
Date and Time of Examination : \_\_\_\_\_  
Place of Examination : \_\_\_\_\_  
Consent : \_\_\_\_\_  
\_\_\_\_\_

Signature of Examinee

(If minor below 12 yrs. consent of Parents/Guardian)

Examined in presence of : \_\_\_\_\_

(If female)

(Signature of female attendant)

Identification marks :

1. \_\_\_\_\_

2. \_\_\_\_\_

Birth Date : \_\_\_\_\_

Education : \_\_\_\_\_

**Physical Examination :**

1. Height : \_\_\_\_\_ cm

2. Weight : \_\_\_\_\_ kg

3. Chest girth at the level of nipple : \_\_\_\_\_ cm

4. Abdominal girth at the level of navel : \_\_\_\_\_ cm

5. General build and appearance : \_\_\_\_\_

6. Hairs : Pubic : \_\_\_\_\_, Axillary : \_\_\_\_\_, Facial : \_\_\_\_\_, Scalp : \_\_\_\_\_

7. Development of breasts : \_\_\_\_\_

8. Development of genitals : \_\_\_\_\_

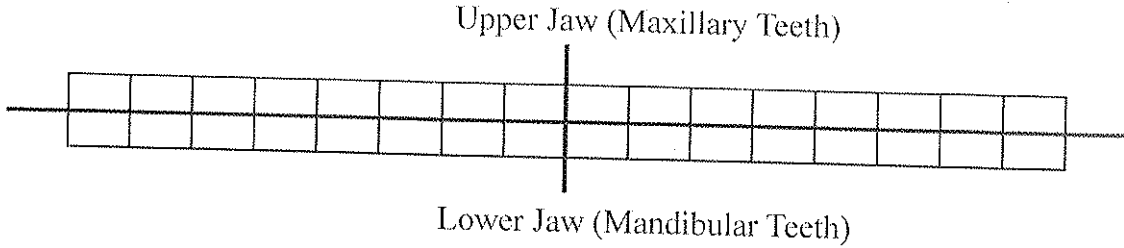
9. Onset of Puberty :

Voice : \_\_\_\_\_

Adam's apple : \_\_\_\_\_

Date of menarche : \_\_\_\_\_ Regularity of menses : \_\_\_\_\_

10. Dental Status :



11. Advised X-ray :

- a.
- b.
- c.

'X-ray' plate No.: a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_

Dated :

**Provisional Age Certificate**

On clinical examination of the individual, age is about \_\_\_\_\_ years. However, the final opinion regarding the age should be collected from this office after submission of the Radiological report and the birth certificate.

Signature

(Dr.

)

Designation & Seal

Place : \_\_\_\_\_

Date : \_\_\_\_\_

Age Certificate

To  
The \_\_\_\_\_

Reference : Age estimation of \_\_\_\_\_, Dated \_\_\_\_\_

Sir,

I, Dr. \_\_\_\_\_, after going through the findings  
of \_\_\_\_\_

Physical examination report No. \_\_\_\_\_, Dated \_\_\_\_\_

'X' ray plate No. \_\_\_\_\_, Dated \_\_\_\_\_

Radiological Examination report No. \_\_\_\_\_, Dated \_\_\_\_\_

and the Date of Birth Certificate No. \_\_\_\_\_, Dated \_\_\_\_\_

produced before me,

**I am of the opinion that the individual's age is about \_\_\_\_\_ years**

(Dr. \_\_\_\_\_ )  
Signature  
Designation & Seal

Place : \_\_\_\_\_

Date : \_\_\_\_\_

Examination / Certification of Alcoholic

A Model Scheme of Examination

Anneure-34-B

To,

The Investigating Officer P.S.

Reference : Your letter No.

Dated :

I am forwarding herewith the result of my examination of

Name : Son / daughter / wife / widow of

Age : Sex : M/F Weight :

Address :

Consent for examination :

Signature / Thumb impression of Examinee

Identification Marks :

- 1.
- 2.

Brought by P.C. Name : No. P.S.

Date and time of examination :

Place of examination :

History :

- a. Alleged case -
- b. Related to alcohol -
- c. Illness -

General behaviour :

Clothing :

Attitude :

Memory : Mental alertness :

Pulse : Respiration :

Temperature : Blood pressure :

Skin :

Smell of alcohol, if any :

Lips :

Tongue :

Eye :

Pupils :

Conjunctiva :

Muscle co-ordination :

Gait :

Speech :

Handwriting

Reflexes :

**Systemic examination :**

Respiratory System :

Cardio-vascular System :

Gastro-intestinal Tract :

Laboratory investigations :

**a. Blood** (5 to 10 ml venous blood) **Preservative :**

**b. Urine** (10 to 20 ml - 2 samples) **Preservative :**

**c. Expired air :**

Diagnosis :

Opinion : I am of the opinion that -

1. The above person has consumed alcohol and is under its influence.
2. The above person has consumed alcohol and is not under its influence.
3. The above person has not consumed alcohol.

Place :

Date :

Signature

Time :

(Dr. \_\_\_\_\_ )

Designation & Seal



**Form 'A'**  
**(See Rule No. 3)**

(Certificate by Registered Medical Practitioner showing whether a person examined by him has or has not consumed an intoxicant)

Serial No. \_\_\_\_\_

Name & location of the  
Dispensary or Hospital

Certified that Shri / Smt / Kum. \_\_\_\_\_ Resident of \_\_\_\_\_

was brought to this Hospital / Dispensary by \_\_\_\_\_  
(Here state the Name & Designation of the Officer)

on \_\_\_\_\_ at \_\_\_\_\_ A.M. / P.M. & was examined by me  
on \_\_\_\_\_ at \_\_\_\_\_ A.M. / P.M.

A clinical examination of the above person disclosed the following :

Age: \_\_\_\_\_ Years, Weight : \_\_\_\_\_ kg, Height : \_\_\_\_\_ cm

Breath : Smelling / Not smelling of Alcohol / Ganja / Bhang.

Speech : Incoherent / Normal

Gait : Unsteady / steady

Pupils Dilated / Normal

Additional remarks, if any :

I find that the above named person \_\_\_\_\_

HAS CONSUMED \_\_\_\_\_ Alcohol / Ganja / Bhang

HAS NOT CONSUMED ANY INTOXICANT

**I also find that he / she is not under the influence of alcohol.**

(N.B. : Blood from the body of the above named was / was not collected by me for chemical examination)

“Certified that the procedure laid down under the rule (4) of Bombay Prohibition Medical Examination and Blood Test Rule 1959 has been followed.”

Date :

Signature

Time : \_\_\_\_\_ A.M. / P.M.:

Designation

Signature / Thumb impression of the Person examined.

Marks of identification of the person examined in case he refuses to give his signature or thumb impression

Form "B"

No. \_\_\_\_\_

From,  
The Casualty Medical Officer, / Assistant Professor in Forensic Medicine  
MGM Medical College and Hospital,  
Aurangabad

To,  
The Director  
Forensic Science Laboratory & Chemical Analyser  
Govt. of Maharashtra, Mumbai

Date :

Sir / Madam,

I am forwarding herewith a parcel by post / with Shri \_\_\_\_\_  
of \_\_\_\_\_ containing \_\_\_\_\_ ml. of Blood and / or Urine sample collected by  
me on \_\_\_\_\_ at \_\_\_\_\_ A.M. / P.M. from the body of Shri / Shrimati / Kumari  
\_\_\_\_\_ of \_\_\_\_\_ who  
was produced before me for medical examination and/or collection of Blood and / or Urine from  
his / her body by \_\_\_\_\_ and request to test the  
Blood and / or Urine and issue a certificate (in duplicate) regarding the result of the tests.

"Certified that the procedure laid down under the rule (4) of Bombay Prohibition Medical  
Examination Blood Test Rule 1959 has been followed".

Yours faithfully,

( Dr. \_\_\_\_\_ )

Casualty Medical Officer  
Assistant Professor in Forensic Medicine  
MGM Medical College and Hospital,  
Aurangabad

Facsimile of the Seal or  
Monogram used for Sealing the  
Phial containing Blood and/or Urine

**Examination of the Weapon**

Annexure-34c

To

The Investigating Officer,

Police Station \_\_\_\_\_

Reference : Your letter No. \_\_\_\_\_ Dated \_\_\_\_\_

Sir,

With reference to the above letter, I am sending the report about weapon sent sealed in connection with the injuries of \_\_\_\_\_

Name of weapon : \_\_\_\_\_ Kind of weapon : \_\_\_\_\_

Type of weapon : \_\_\_\_\_

Description of the weapon :

Blade : Is of \_\_\_\_\_, Texture : \_\_\_\_\_

Length : \_\_\_\_\_, Breadth : \_\_\_\_\_, Thickness : \_\_\_\_\_

Edges / Margins : \_\_\_\_\_, Point : \_\_\_\_\_

Stains / Foreign body, if any : \_\_\_\_\_

Joint : Type : \_\_\_\_\_, Hilt : Size : \_\_\_\_\_

Handle : Is of \_\_\_\_\_, Texture : \_\_\_\_\_

Length : \_\_\_\_\_, Breadth / Circumference : \_\_\_\_\_

Stains / Foreign body, if any : \_\_\_\_\_

(Advised to send it to C.A. for further detail examination)

Injuries possible :

Injuries impossible :

Identification marks if any on the weapon.

(Put the signature on the weapon)

The weapon packed, sealed and handed over to P.C. \_\_\_\_\_ No. \_\_\_\_\_ P.S. \_\_\_\_\_

Place : \_\_\_\_\_

Date & Time : \_\_\_\_\_

Receipt of weapon & report

Signature

(Dr. \_\_\_\_\_ )

Designation & Seal

**Examination / Certification of the Injured (Injury Report/Certificate)**

To

The Investigating Officer.

Annexure-34-D

Police Station \_\_\_\_\_

Reference : Your Letter No. \_\_\_\_\_ Dated \_\_\_\_\_

Sir,

I am forwarding herewith the report of examination of :

Name of Injured : \_\_\_\_\_ Son/Wife/Daughter/Widow of \_\_\_\_\_

Surname \_\_\_\_\_ resident of \_\_\_\_\_

Age: \_\_\_\_\_ Sex \_\_\_\_\_ Occupation \_\_\_\_\_

Brought by PC \_\_\_\_\_ No. \_\_\_\_\_ P.S. \_\_\_\_\_

Consent for examination :

Signature of Witness

Signature of Examinee

Identification marks:

1.

2.

**History :**

Sr. No.	Type of injury	Size of injury	Situation over the body	Nature of injury	Probable weapon	Age of injury	Advice

**Remark**

**Place :**

**Date :**

**Signature**

**(Dr \_\_\_\_\_ )**

**Receipt**

**Designation & Seal**

**Form No. 4**

(For hospital in patient death, not to be used for still birth)

Annexure-34-E

**MEDICAL CERTIFICATE OF CAUSE OF DEATH**

(To be sent to Registrar of Births and Deaths along with Death Report form no. 2)

Name of Hospital : \_\_\_\_\_

I do hereby certify that the person whose particulars are given below died in Hospital in Ward No. \_\_\_\_\_

on \_\_\_\_\_ at \_\_\_\_\_ A.M. / P.M.

Name of the deceased :

For use by  
statistical office

Address of normal Residence :

Sex	Age in yrs..	Date of Birth	Marital status S, M, W or D	Occupation	Religion	Age at Death				Detailed list code
						If under 1 year		If under 24 hours		
						Months	Days	Hrs.	Min.	

**Cause of Death**

Interval between  
onset and death approx

**1. Immediate Cause :**

State the disease, injury or complication which caused death, not the mode of dying such as heart failure, asthenia, etc.

a) \_\_\_\_\_

Due to :

or as a consequence of

**Antecedent cause :**

Morbid condition, if any, giving rise to the above cause, stating underlying condition last.

b) \_\_\_\_\_

Due to :

or as a consequence of

c) \_\_\_\_\_

**2. Other significant conditions**

contributing to death, but not related to the disease or condition causing it

\_\_\_\_\_

Natural / Accident / Suicide / Homicide (specify) : How did the injury occur?

**IF DECEASED WAS A FEMALE**

Was the death associated with pregnancy?

Yes/No

Was there a delivery?

Yes/No

Name or rubber-stamp of institution :

Serial Number of institution

Date of report

Date and Time :

Signature and address of

(Dr. \_\_\_\_\_ )

Designation & Seal

(To be detached and handed over to the relative of the deceased)

Certified that Shri / Smt/Kum. \_\_\_\_\_ S/W/D of Shri \_\_\_\_\_ Resident of \_\_\_\_\_

\_\_\_\_\_ was admitted to the hospital and expired on \_\_\_\_\_ at \_\_\_\_\_ a.m./p.m.

Date Time :

Signature

(Dr. \_\_\_\_\_ )

Designation & Seal

**EXAMINATION OF A CASE FOR DETERMINATION OF POTENCY**

FM No/ /20

Date : / / 20

To,

Annexure-34-F

**Reference :** Your letter / order no. \_\_\_\_\_ Dated - \_\_\_\_\_

Name of the individual- \_\_\_\_\_

Age as stated: \_\_\_\_\_, Sex: \_\_\_\_\_ Marital status (If married, duration) \_\_\_\_\_

Address : \_\_\_\_\_

Occupation : \_\_\_\_\_

Brought by (Name, signature & designation) \_\_\_\_\_

Date, place & time of examination : \_\_\_\_\_

Light arrangement - \_\_\_\_\_

**Consent :**

Q - Are you willing to be examined by me / us to opine in relation to your potency ? The examination will include physical examination, laboratory investigations and psychological assessment. The examination by dept of Urology would also include administration of drugs to evaluate your potency. You have right to refuse but this refusal may go against you in the court of law.

Answer given - Yes / No

Name, signature of the person giving consent with Date -

Witness to the consent - Name, signature & Date -

Identification marks-

1.

2.

**History**

1. Do you have erectile dysfunction ? - Yes / No

If yes

a. Since how long have you noticed the erectile dysfunction?

b. Did the problem being abruptly or insidiously?

- c. Do you have inability to achieve or maintain an erection or both ?
- d. Are you able to penetrate or not ?
- e. Whether partial penetration or ejaculation before penetration ?
- f. Do you ever get normal or near normal erection (During masturbation with other partner, early morning)
2. H/o any major illness - HT / DM / TB / Vascular disease / Endocrinal diseases etc.
3. H/o STD -
4. H/o mental illness -
5. Any stress-
6. Family environment-
7. Any history of medication / for what ailment / duration of medication
8. H/o Drug abuse - Nicotine / Ganja /Alcohol / other
9. H/o any head injury / spinal injury / any operation on genitals -
10. H/o aversion dislike / dejection / for any particular sex partner

**Obseervations**

**General examination**

General built and appearance : \_\_\_\_\_

Weight :                      kg    Height :                      cm

Teeth :    Total No. :

Secondary sexual characters :

Beard :    Moustache :

Axillary hairs :    Pubic hairs :

Breast development / Gynaecomastia if any :

Any marks of injury / scar on the body :

**Local examination** : (Along with Urology department) done in ward no \_\_\_\_\_

- a. Penis :
  - Circumcised / Non-Circumcised :
  - Stretched penile length -
  - Length when erect -
  - Circumference (flaccid & erect) :
  - Disease / deformity / injury (if any) :
  - Sensation over glans penis :
  - Foreskin (Retractable / Non-retractable) :
  - Dorsal penile pulsation :
  - Any Discharge :
  - Smegma :
  - Hygiene :

- b. Scrotum :  
Pendulous or not :  
Developmental defects :  
Deformities :  
Cremasteric reflex :
- c. Testes :  
Whether present in scrotum or not :  
Size :  
Consistency :
- d. Prostate (Per rectal examination) :
- e. Bulbocavernous reflex :
- f. Any evidence of S.T.D
- g. Effect of administration of \_\_\_\_\_ in \_\_\_\_\_ dose \_\_\_\_\_ After \_\_\_\_\_ minutes  
Result :

#### SYSTEMIC EXAMINATION

- C.N.S. :
- R. S. :
- C. V. S. Pulse :                      BP:  
Femoral artery :  
Dorsalispedis artery :
- G.I.T. :



**Laboratory Investigations (If required)**

1. CBC :
2. Hb :
3. BSL (Fasting & PP) :
4. Sr. FSH :
5. Sr. LH :
6. Sr. testosterone & Oestrogen :
7. Sr. prolactin :
8. VDRL :
9. USG/Colour doppler :
10. TFT (TSH, T3, T4) :
11. LFT :
12. HbA1C :

**Opinion :**After detailed examination i.e. based on physical examination, psychiatric evaluation and examination by urologist, we are of the following opinion". There is nothing to suggest that the above examined person is incapable to perform sexual intercourse ". / The person is in capable of performing sexual intercourse due to.....

Place : \_\_\_\_\_

Date \_\_\_\_\_

Signature

Name & Qualification :

Designation

Registration No. :

MEDICAL SICKNESS / UNDER TREATMENT CERTIFICATE

Annexure-34-G

Signature of the applicant \_\_\_\_\_  
(Government servant / Private)

I Dr. \_\_\_\_\_ after careful personal examination of the case hereby certify that Mr. / Mrs./ Ms. \_\_\_\_\_ whose signature is given above was suffering from \_\_\_\_\_ and was under my treatment for the same as Outdoor / indoor patient. And I consider that a period of absence from duty of \_\_\_\_\_ with effect from \_\_\_\_\_ is absolutely necessary for restoration of his / her health

He / She was advised rest for a period of \_\_\_\_\_ days

Identification marks:

- 1)
- 2)

Hospital No.

Date:

Authorised Medical Attendant  
Seal & Reg. No.

## MEDICAL FITNESS CERTIFICATE

Signature of the applicant \_\_\_\_\_  
(Government servant / Private)

I Dr. \_\_\_\_\_ after careful personal examination of the case hereby certify that Mr. / Mrs. / Ms. \_\_\_\_\_ whose signature is given above was suffering from \_\_\_\_\_ and was under my treatment for the same. He / She was advised rest for a period of \_\_\_\_\_ days.

He / She recovered completely from the illness and he/she is fit to resume his / her duty with effect from \_\_\_\_\_

Identification marks:

1)

2)

Hospital No.

Date:

Authorised Medical Attendant  
Seal & Reg. No.

**Certificate of Physical Fitness**

Annexure-34-H

This is to Certify that I have examined Shri / Smt / Kum. \_\_\_\_\_  
\_\_\_\_\_ who signed below in my presence and who  
is a candidate for employment for the post of \_\_\_\_\_ in  
the department / office \_\_\_\_\_ at \_\_\_\_\_

I could not discover that he / she has any disease (communicable or otherwise) constitutional  
weakness or bodily infirmity, except \_\_\_\_\_. I do consider / do not consider  
this is a disqualification for such an employment.

He / she \_\_\_\_\_ age is according to his / her own  
statement \_\_\_\_\_ years and by appearance about \_\_\_\_\_ years.

Identification marks:

1)

2)

Signature of the applicant : \_\_\_\_\_  
(Government servant / Private)

Hospital No.

Date:

Authorised Medical Attendant  
Seal & Reg. No.

**Resolution No. 4.13 of BOM-55/2018: Resolved as follows:-**

- (i) Slow learners must be re-designated as potential learners.
- (ii) Students scoring less than 35% marks in a particular subjects/course in the 1<sup>st</sup> formative exam are to be listed as potential learners. These learners must be constantly encouraged to perform better with the help of various remedial measures.
- (iii) Students scoring more than 75% marks in a particular subjects/course in the 1<sup>st</sup> formative exam are to be listed as advanced learners. These learners must be constantly encouraged to participate in various scholarly activities.

**Resolution No. 3.1.4.2 of BOM-57/2019:**

- i.** Resolved to include “Gender Sensitization” into UG (from new batch 2019-2020) and PG (from existing batches) curricula. [**Annexure-21**]
- ii.** Resolved to align the module of “Gender Sensitization” with MCI CBME pattern for MBBS students.
- iii.** Resolved that Dr. Swati Shiradkar, Prof., Dept. of OBGY., MGM Medical College, Aurangabad will coordinate this activity at both campuses.

## **Annexure - 21**

**Gender sensitization for UG (2<sup>nd</sup> , 3<sup>rd</sup> , 8<sup>th</sup> semesters) and PG (3 hours)**

### **INCLUSION OF “ GENDER SENSATIZATION” IN CURRICULUM**

#### **Introduction :**

The health care provider should have a healthy gender attitude, so that discrimination, stigmatization, bias while providing health care will be avoided. The health care provider should also be aware of certain medico legal issues related with sex & gender.

Society particularly youth & adolescents need medically accurate, culturally & agewise appropriate knowledge about sex, gender & sexuality. So we can train the trainers for the same. It is need of the hour to prevent sexual harassment & abuse .

To fulfill these objectives, some suggestions are there for approval of BOS.

#### **Outline**

- 1)For undergraduates :- Three sessions of two hours each, one in 2<sup>nd</sup> term, one in 3<sup>rd</sup> term & one in 8<sup>th</sup> term.
- 2)For Faculties and postgraduates :- One session of two hrs .
- 3)For those want to be trainers or interested for their ownself, value added course, which is optional about sex, gender, sexuality & related issues.

### **Responsibility**

ICC of MGM, MCHA , with necessary support from IQAC & respective departments.

### **Details of undergraduate sessions**

#### **1)First session in 2<sup>nd</sup> term**

**Aim** – To make Students aware about the concept of sexuality & gender.

To check accuracy of knowledge they have,

To make them comfortable with their own gender identify & related issues.

To make them aware about ICC & it is functioning.

**Mode** – Brain storming , Interactive power point presentation experience sharing.

**Duration** – Around two hours

**Evaluation** – Feedback from participants.

#### **2)Second session in 3<sup>rd</sup> / 4<sup>th</sup> term**

**Aim** – To ensure healthy gender attitude in these students as now they start interacting with patients.

To ensure that the maintain dignity privacy while interacting with patients and relatives, particularly gender related.

To make them aware about importance of confidentiality related with gender issues.



To encourage them to note gender related issues affecting health care & seek solutions.

Mode – focused group discussions on case studies, Role plays & discussion.

--3--

Duration – Around two hours.

Evaluation – Feedback from participants.

Third session in 8<sup>th</sup> term.

**Aim** – To understand effect of gender attitudes on health care in various subjects.

To develop healthy gender attitude while dealing with these issues.

**Mode** – Suggested PBL by departments individually. ( In collaboration with ICC till faculty sensitization is complete)

**Evaluation** – Feedback

\*\*\*\*

**FOR POSTGRADUATES**

Session of 2-3 hrs preferably in induction program.

**Aim** – To introduce medically accurate concept of gender, sex, gender role & sex role.

To ensure healthy gender attitude at workplace.

To understand gender associated concepts on health related issues & avoid such bias while providing health care.

To make them aware about ICC & its functioning.

**Mode** – Interactive PPT

Role plays & discussion

**Duration** – 2 to 3 hrs

**Evaluation** – Feedback.

**FOR FACULTIES**

Session of 2 hours may be during combined activities.

**Aim** – To ensure clarity of concept about gender & sex.

To discuss effect of these concepts on health-related issues.

To identify such gender & sex-related issues in individual subject specialties.

To discuss methodology like PBL for undergraduate students when they are in 7<sup>th</sup>-8<sup>th</sup> semester.

**Mode** – Role play

    Focused group discussion

    Case studies

**Evaluation** – Feedback.

\*\*\*\*\*



# MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)

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