



Dr. D. Y. PATIL VIDYAPEETH, PUNE
(Deemed to be University)

**Syllabus for
PG Surgical Specialties**

2014 - 15
(Amended / Revised upto July 2019)



Dr. D.Y. PATIL VIDYAPEETH, PUNE
(Deemed to be University)

(Re-accredited by NAAC with a CGPA of 3.62 on a four point scale at 'A' Grade)
(An ISO 9001 : 2015 Certified University)

Dr. A. N. Suryakar
Registrar

Ref. No. : DPU/875-vii/2019

Date : 11/09/2019

NOTIFICATION

Whereas in pursuance of the following decisions taken by the Board of Management, it is hereby notified to all concerned that the "Syllabus for PG Medical and Surgical Specialties – 2014-15" is revised upto July 2019 and hereby published.

- Changes in syllabus for UG and PG in General Medicine, Pulmonary Medicine and General Surgery vide Resolution No. BM-07-(iii)-4 dated 28th January, 2014.
- Updation in UG and PG syllabus of General Medicine, Obstetrics & Gynecology, Orthopedics, Anaesthesiology, ENT and Ophthalmology vide Resolution No. BM-04(i)-15, dated 31st March, 2015.
- Modifications in pattern of PG practical examinations for MD (General Medicine), MD (Pediatrics), MS (General Surgery), and MS (OBGY) vide Resolution No. BM-26(iv)-15, dated 29th December, 2015.
- Updation in PG syllabus in Radio-Diagnosis subject vide Resolution No. BM-26(vii)-15, dated 29th December, 2015.
- Introduction of Bioethical aspects in various chapters of all subjects vide Resolution No. BM-26(xi)-15, dated 29th December, 2015
- Partial Modifications in Pattern of PG Practical Examinations for MD (General Medicine) and MS (General Surgery) vide Resolution No. BM-17(vii)-16, dated 22nd September, 2016.
- Modifications in the syllabus of MD (Emergency Medicine) vide Resolution No. BM-35(iv)-18, dated 12th October, 2018.
- Changes in teaching and assessment of MS (Ophthalmology), vide Resolution No. BM-35(v)-18, dated 12th October, 2018.
- Changes in the practical examination pattern of M.S. (Orthopedics) vide Resolution No. BM-35(vi)-18, dated 12th October, 2018.
- Change in practical examination pattern of MD (Dermatology) vide Resolution No. BM-35(vii)-18, dated 12th October, 2018.
- Graduate Attributes, Programme Outcomes (POs), Course Outcomes (Cos) and gap analysis for all courses of UG and PG Programmes for Para-Clinical and Surgical Subjects vide Resolution No. BM-10(vii)-19 dated, 12th April, 2019.
- Interdisciplinary subjects (for Surgical Subjects) of M.B.B.S, M.D./M.S. and Super-specialty (D.M./M.Ch.) Programs under the Faculty of Medicine vide Resolution No. BM-10(viii) dated 12th April, 2019.
- Changes in syllabus of MD (General Medicine) and MD (Psychiatry) vide Resolution No. BM-27(iv)-19 dated 30th July, 2019.
- Modifications in MD (Respiratory Medicine) Practical examination pattern vide Resolution No. BM-27(vii)-19 dated 30th July, 2019.



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- Graduate Attributes, Programme Outcomes (POs), Course Outcomes (Cos) outcome analysis of Pos and Cos and mapping with objectives for all courses of UG and PG Programmes of Pre-Clinical and **Medicine Subjects** under the Faculty of Medicine vide **Resolution No. BM-27(x)-19 dated 30th July, 2019.**
- Interdisciplinary subjects (**for Medicine Subjects**) of M.B.B.S, M.D./M.S. and Super-specialty (D.M./M.Ch.) Programs under the Faculty of Medicine vide **Resolution No. BM-27(xi) dated 30th July, 2019.**

The **Syllabus for PG Medical and Surgical Specialties – 2014-15** is Revised upto July 2019 will be useful to all the concerned. This will come into force with immediate effect.



(Dr. A. N. Suryakar)
Registrar

Copy to:

1. PS to Chancellor for kind information of Hon'ble Chancellor, Dr. D. Y. Patil Vidyapeeth, Pune.
2. PS to Vice Chancellor for kind information of Hon'ble Vice Chancellor, Dr. D. Y. Patil Vidyapeeth, Pune.
3. The Dean, Dr. D. Y. Patil Medical College Hospital & Research Centre, Pimpri, Pune
4. The Controller of Examinations, Dr. D. Y. Patil Vidyapeeth, Pune.
5. Director (IQAC), Dr. D. Y. Patil Vidyapeeth, Pune.
6. Web Master for uploading on Website.

**MAPPING OF PROGRAMME OUTCOMES [POs] AND COURSE
OUTCOMES [COs] OF PG PROGRAMMES**

MS (SURGERY) PROGRAMME OUTCOMES

Sr. No	By the end of the programme, the Medical Postgraduate Will have
PO 1	Knowledge and Skills
PO 2	Planning and problem solving abilities
PO 3	Communication
PO 4	Research Aptitude
PO 5	Professionalism and Ethics
PO 6	Leadership
PO 7	Societal Responsibilities
PO 8	Environment and Sustainability
PO 9	Lifelong Learner

SURGERY COURSE OUTCOME – PG
SUBJECT CODE –PGS01

Sr.No	By the end the Course, the student will be able to
1	Recognize the importance to the concerned surgery in the context of the health needs of the community and the national priorities in the health section.
2	Practice the surgery concerned ethically and in step with the principles of primary health care.
3	Demonstrate sufficient understanding of the basic sciences relevant to the surgery specialty.
4	Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive and primitive measure/strategies.
5	Diagnose and manage majority of the conditions in the surgery concerned on the basis of clinical assessment, and appropriately selected and conducted investigations.
6	Plan and advise measures for the prevention and rehabilitation of patients suffering from disease and disability related to the surgery specialty.
7	Demonstrate skills in documentation of individual case details as well as morbidity and mortality rate relevant to the assigned situation.
8	Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.
9	Play the assigned role in the implementation of national health programme, effectively and responsibly.
10	Organize and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation
11	Develop skills as a self-directed learner, recognize continuing education needs; select and use appropriate learning resources
12	Demonstrate competence in basic concepts of research methodology and epidemiology and be able to critically analyze relevant published research literature.
13	Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.
14	Function as an effective leader of a health team engaged in health care, research or training.

MD ANAESTHESIOLOGY PROGRAMME

Course Code	Course Title
PGS03	MD Anaesthesiology

Anaesthesiology AS

CO No.	At the end of the course, the learner should be able to:	Mapped Programme Outcomes
PGS03.1	Basic fundamentals about “ Principles and practice” of Anaesthesiology	PO1,PO2,PO3,PO4, PO6,PO7,PO9
PGS03.2	Pre-operative evaluation, preparation of the patient for anaesthetic management of both elective and emergency surgical procedures	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9
PGS03.3	Preparation of the anaesthesia equipment, anaesthesia machine, monitoring devices, Anaesthetic and other essential drugs ,all the required resuscitation and emergency equipment	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9
PGS03.4	Expertise in gaining vascular access, peripheral large veins and central venous access	PO1,PO2,PO3,PO4, PO5,PO6,PO9
PGS03.5	Expertise in airway management, all the other invasive procedures of inducing anaesthesia.	PO1,PO2,PO3,PO4, PO5,PO6,PO9
PGS03.6	Managing smooth, safe and effective maintenance of Intra-operative Anaesthesia	PO1,PO2,PO3,PO4, PO5,PO6,PO8,PO9
PGS03.7	Monitoring vigilantly, anticipating, preventing and treating common and uncommon side effects, toxicities and complications of anaesthesia	PO1,PO2,PO3,PO4, PO5,PO6,PO7,PO8,PO9



ANESTHESIOLOGY

ANAESTHESIOLOGY

(1) INTRODUCTION :

Anaesthesiology as a specialty at present has evolved into widely encompassing areas of patient care with very rapid advances especially in last two decades. It has crossed the stifling boundaries and close confines of Operation theatre (OT). In addition to this primary area the Specialist Anaesthesiologist is playing multiple roles viz: As an Intensivist in critical care, Pain specialist for acute, chronic pain, Resuscitation in casualty, ICU, and other sensitive areas. In addition his expert advice and services are needed in radiology for C.T, M.R.I, dark room procedures, cardiac catheterization laboratories, in psychiatry - Electro Convulsive Therapy (ECT), in Radiotherapy, for cobalt therapy & brachy-therapy, in Respiratory Therapy Units for sustainance of artificial ventilation and Ventilator Therapy. Even in operation theatre, because of advances in anaesthesia techniques, refinement in surgical techniques, availability of various potent drugs, monitoring devices and increased demands with opening of various surgical super-specialties, has enabled the consultant anaesthesiologist to have super specialized expertise in the peri-operative management.

Thus the modern day anaesthesiologist has to be expert to face varied challenges. Logically the training to be imparted to the postgraduate students of Anaesthesiology has assumed considerable dimensions.

(2) GOALS :

The most essential and primary aim is to generate competent, safe, expert, skillful and caring consultant anaesthesiologist, intensivist and resuscitacionist.

The qualities to be absolutely necessary:

- 2.1 Sound theoretical knowledge, clinical expertise.
- 2.2 Excellent technological knowledge in the field of Anaesthesiology. e.g. Use of fiberoptic broncoscope, fiberoptic intubating laryngoscope, USG guided techniques and simulators in anaesthesia
- 2.3 Ability to provide safe, skillful and appropriate technique or method of anaesthesia to his/her patients
- 2.4 To assist and if necessary train juniors
- 2.5 To perform meaningful, progressive and qualitative research in the field of Anaesthesiology.

- 2.6 Ability and expertise to provide essential and valuable care to critically ill patients especially in resuscitation and ventilatory aspects
- 2.7 To keep up-to-date and well versed with all the recent advances in the specialties of anaesthesiology, critical care and pain management
- 2.8 Last but not the least: - to understand the bottom line that not only the well being but the life of the patient is in their hands; so to adapt very caring and empathetic and conservative attitude towards all the patients under their care.

(3) OBJECTIVES OF M. D. ANAESTHESIOLOGY KNOWLEDGE AND SKILLS -

At the end of M.D. programme (36 months / 6 terms) in Anaesthesiology, the students will have acquired the knowledge and understanding about:

- 3.1 Basic fundamentals about “Principles and practice” of Anaesthesiology
- 3.2 Pre-operative evaluation, preparation of the patient for anaesthetic management of both elective and emergency surgical procedures.
- 3.3 Preparation of the anaesthesia equipment, anaesthesia machine, monitoring devices, Anaesthetic and other essential drugs ,all the required resuscitation and emergency equipment.
- 3.4 Expertise in gaining vascular access, peripheral large veins and central venous access
- 3.5 Expertise in airway management, all the other invasive procedures of inducing anaesthesia.
- 3.6 Managing smooth, safe and effective maintenance of Intra-operative Anaesthesia
- 3.7 Monitoring vigilantly, anticipating, preventing and treating common and uncommon side effects, toxicities and complications of anaesthesia.
- 3.8 Monitor, anticipate, prevent and treat all the problems associated with ongoing surgical procedure.

- 3.9 At the end of surgical procedure –safely, smoothly and skillfully “recover ” the patient back to as normal condition as possible.
- 3.10 Very essential Post-Operative management of the patients till they are discharged from post operative recovery room
- 3.11 Record keeping – about pre operative evaluation / medication, Intraoperative recording of vitals, all the anaesthetic events and the drugs used. Intravenous infusions, blood and other products used any and all noteworthy, specific surgery related events / complications, registers, records, so as to keep themselves and hospital medico legally safe
- 3.12 In addition to anaesthesia for basic surgeries like General Surgery, Orthopaedics, Obstetrics and Gynecology, E.N.T, and Ophthalmology, the superspeciality surgeries like Neuro-Surgery, Paediatrics, Plastic, Urological, Cardio thoracic, vascular as well as anaesthesia for renal transplant surgery.
- 3.13 Preparation of research protocols conducting meaningful research and developing dissertation
- 3.14 Basic principles and technical expertise in patient management of critically ill patients in I.C.U, casualty, wards, in the form of Cardio-pulmonary cerebral resuscitation, ventilator, monitoring, vascular and airway accesses and other invasive procedures like arterial and central venous pressure lines insertion.
- 3.15 Various aspects, procedures, methodologies of pain and its management.
- 3.16 All the recent advances in the field of Anaesthesiology, critical care, pain and other related areas.
- 3.17 Theoretical knowledge about the basic sciences like anatomy, physiology, pharmacology, pathology in relation with anesthesiology, physical principles of gases, liquids, vapors, various instruments, and general ideas about the statistical methods.
- 3.18 Essential and very sensitive aspects of patient care involving ethics, medicolegal death comments, and various related issues.

(4) INTEGRATION :

The entire educational programme will be conducted in an integrated and co-ordinated manner in association with various pre and para-clinical departments viz. Anatomy, Physiology, Biochemistry, Microbiology, Pathology, Pharmacology, Bio-statistics and Medical Jurisprudence. The senior staff members of these departments will be requested to give lectures on various topics in relation with Anaesthesiology.

The Super speciality Anaesthesia training viz: for Cardiac anaesthesia, at Department of CVTS, Dr D. Y. Patil Medical College, Hospital and Research Centre Pimpri, Pune. The PG residents have to rotate for one month during their 2nd year. In addition the surgical ICU is under the administrative and management control of the Department of Anaesthesiology and critical care. So the day to day work of SICU has been integrated with department. Every month one 2nd year resident in collaboration with one each of General surgery, Orthopedics, Trauma, Obstetrics and Gynecology.

Residents have to perform daily rotational shift duty under the supervision and guidance of on duty lecturer and ultimate control of Professor/Head of Anaesthesiology, who is incharge of surgical ICU.

(5) SYLLABUS :

3.19 HISTORY OF ANAESTHESIA AND ANALGESIA

- 3.19.1 Dark ages, Dawn of Analgesia
- 3.19.2 Laughing Gas and Horace wells
- 3.19.3 “ Oil of Vitriol ” and W.T.G MORTON
- 3.19.4 Local Analgesia, Neuro-Muscular Blockers (N M B),
- 3.19.5 Boyle's/Anaesthesia Machine
- 3.19.6 Various other pioneers

3.20 BASIC SCIENCES IN RELATION WITH ANAESTHESIOLOGY

5.2.1 PHYSIOLOGICAL SCIENCES

(a) PHYSIOLOGY:

- Respiratory system
- Pain pathway
- Cardiovascular system
- Central nervous system and peripheral nervous system
- Hepato-biliary system
- Renal physiology
- Autonomic nervous system
- Endocrine system
- Thermo regulation
- Aging and its physiological implications
- Physiology of pregnancy and process of labour

(b) PHARMACOLOGY:

- General pharmacology
- Inhalational Anaesthetic agent
- Intravenous Anaesthetic Agents
- Local Analgesic Drugs
- Neuromuscular Junction and drugs acting on NMJ
- Drugs acting on Autonomic nervous system
- Analgesics
- Drugs acting upon Cardio-Vascular system
- Drugs acting upon Central Nervous system
- Diuretics
- Antibiotics/Immuno-suppressants/Miscellaneous Drugs
- Drug reactions and Inter-actions
- Miscellaneous drugs

5.2.2 PHYSICAL SCIENCES:

(a) ANATOMY:

- Clinical & Applied Anatomy of
- Respiratory system
- Cardiovascular system
- Nervous system
- Regional anatomy
- Vertebral column, lumbar and cervical vertebrae, subarachnoid and epidural space. CSF production and circulation.
- Nerves/Ganglia/plexuses relevant to anaesthesiologist
- Anatomical landmarks

(b) BIOCHEMISTRY :

- Metabolism of body
- Acid base equilibrium
- Arterial blood gas analysis
- Water, fluids & electrolytes metabolism
- Liver function/hemoglobin metabolism & Jaundice
- Renal function
- Hyper alimentation

(c) PATHOLOGY :

- Inflammation
- Pathology of liver diseases
- Pathology of renal diseases
- Cerebral hypoxemia & cerebral edema
- Diagnosis of brain death and its medicolegal implications.
- Clinical pathology of Brain death

(d) MICROBIOLOGY :

- Introduction of microbial environment
- Antibiotics prophylaxis & treatment
- Nosocomial infection
- Sterilization & fumigation of rooms, operation theatre & ICU
- Sterilization of equipments
- Add nosocomial infections and prevention

(e) PHYSICS :

- Liquids/Vapors/Gases
- Gas Laws
- Anaesthesia Machine
- Inhalational agents-uptake & distribution
- Vaporizers
- Anaesthetic breathing systems
- Monitors & Monitoring
- Additional various equipments
- Ventilation & Ventilators
- Venturi principle
- Pulseoxymetry/Capnography
- Pacemakers & Defibrillators
- Electricity/electric fibers/explosion hazards
- Modern anaesthesia work station
- Inhalation agents – uptake, distribution and elimination
- Piped medical gases and vacuum (PMGV)

(f) MATHEMATICS & RELATED SCIENCES :

- Biostatics
- Computers & their applications
- Tests of significance
- Computers and their application in anaesthesia

**(5.3) CLINICAL SCIENCES AS APPLIED TO
ANAESTHESIOLOGY: -**

**5.3.1 ANAESTHESIA PROCEDURES/METHODS/
TECHNIQUES:**

- (a) Pre-anaesthetic assessment, preparation & medication
- (b) Management of various anaesthetic methodologies
- (c) Principles & practice of general anaesthesia
- (d) Regional analgesia techniques nerve blocks and field blocks
- (e) Intravenous fluids management - crystalloids & colloids
- (f) Blood, Blood products & plasma substitutes
- (g) Accidents & Complications associated with Anaesthesia (Aetiology, prevention & treatment)
- (h) Special techniques central venous line insertion, CVP measurement, arterial line insertion.
- (i) Post operative care
- (j) Record keeping, quality assurance & self assessment audit in anaesthesia.

**5.3.2 DISEASE STATES / CLINICAL PROBLEMS & THEIR
MANAGEMENT:**

- (a) Pain and its management
- (b) Respiratory system diseases
- (c) Cardio-Vascular system diseases
- (d) Central Nervous System diseases
- (e) Hepatic diseases
- (f) Renal diseases
- (g) Metabolic Disorder
- (h) Obesity
- (i) Endocrine Diseases

- (j) Haematologic Disorder
- (k) Gastro-Intestinal Disorders
- (l) Gynaecological Diseases
- (m) Obstetric Problems
- (n) Cardio-Pulmonary-Cerebral Resuscitation

5.3.3 SUPER-SPECIALITY ANAESTHETIC TECHNIQUES:

- (a) Paediatrics Anaesthesia
- (b) Cardio-thoracic Anaesthesia
- (c) Neuro- Anaesthesia
- (d) Anaesthesia for Endoscopic Surgical Procedure
- (e) Anaesthesia for Plastic Surgery
- (f) Anaesthesia for Urological Procedures including renal transplant
- (g) Anaesthesia outside operation theatre and field situations
- (h) Outpatient / Day outside operation theatre and field Care Anaesthesia
- (i) Anaesthesia for Ophthalmological Surgery
- (j) Anaesthesia for Laser Surgery
- (k) Dark Room Procedures & their Anaesthetic Management
- (l) Anaesthesia for Orthopedic & Traumatology
- (m) Anaesthesia requirement for Electro-Convulsive Therapy
- (n) Anaesthesia for Radiotherapy
- (o) Anaesthesia for Organ Transplantation
- (p) Anaesthesia for Surgical Oncological procedures and immunocompromised patient.

5.3.4 PRINCIPLES AND PRACTICES OF EMERGENCY MEDICINE

5.3.5 RECENT ADVANCES IN ANAESTHESIOLOGY, CRITICAL CARE AND PAIN MANAGEMENT:

5.3.6 ETHICS AND MEDICOLEGAL ISSUES

(6) DISSERTATION :

6.1 INTRODUCTION: -

Each Post-Graduate Student registered for M.D in Anaesthesiology, during the course of their training will have to conduct true, prospective, preferably comparative research and prepare then submit the thesis/ Dissertation as a partial but essential requirement for final examination.

6.2 AIM:

To Orient the students to various methodologies of research, induce them to get acquainted with them and facilitate fruitful research, which will add to existing body of knowledge in the fields of Anaesthesiology, Critical Care, Pain Management, Resuscitation & Monitoring.

6.3 OBJECTIVES : To –

- i. Identify a relevant research, questions
- ii. Conduct critical review of literature
- iii. Formulate a hypothesis
- iv. Determine most suitable study design
- v. State the objectives of the study
- vi. Prepare a study protocol
- vii. Get approval from the ethics committee
- viii. Conduct the study, compile the data
- ix. Analyse & interpret the data
- x. Draw a conclusions, declare results
- xi. Write a research paper and get it published in indexed journal

(7) GUIDELINES:

- i. Student : Teacher Ratio of 1:1 must be strictly maintained
- ii. Scope of the study should be such that it is possible to conduct within the resources & time available
- iii. More emphasis should be given on methodology rather than results review of literature and biostatistics.
- iv. Ethical issues and consideration must be given priority & all the concerned inclusive of entire department must be committed.
- v. Within 6 months of Registration as a Post-Graduate student-Protocol/ Synopsis (approx. 200 words) consisting of
 - Title of study
 - Aims/Objectives
 - Material & methods
 - Adequate numbers of references (8-10) must be submitted.
 - It is to be signed by student, P.G. teacher, Head of the Department, ead of The Institution. Penalty of Rs. 100 or equivalent will be levied for late submission.
- vi. Candidate presenting for the M.D. Anaesthesiology final examinations shall be required to submit 6 months before commencement of the examination, this dissertation.
- vii. It should not exceed approximately 2500 words
- viii. Ideally / Preferably this should be written during 2nd & 3rd year of M.D. training course.

(8) EVALUATION :

INTRODUCTION:

The Doctor who has joined training programme of M.D. in Anaesthesiology must undergo evaluation intermittently at regular intervals. The evaluation has to be over all about the theoretical knowledge, practical examination, assessment of skills, techniques, proficiency in the procedures performed. This evaluation is an ongoing process.

(9) ASSESSMENT :

9.1 AIMS & OBJECTIVES: -

9.1.1 Assessment of Theory and practical at regular intervals as Internal Assessment is essential part of a training programme.

9.1.2 It is supposed to encompass all the aspects of the speciality, must be impartial reliable and precise.

(10) PATTERN OF INTERNAL ASSESSMENT:

For post graduate degree/diploma programme in anaesthesiology, the overall evaluation of the students will consist of preliminary examination and the university examination at the end of the course.

10.1 Within 3 months of Registration the students who have undergone Orientation, Introduction to the speciality will undergo the- primary orientation assessment examination. The aim of this examination will be to gauge the aptitude, grasping power and impact of the speciality on the candidate. There will not be any bearing of this test on the final examination.

10.2 The Preliminary Examination: -

It will be conducted at the 33rd month after the registration for MD. By this time it is presumed that the entire syllabus pertaining to course has been completed.

10.3 Any candidate, whose performance in Preliminary Examination is for from satisfaction, may not be allowed to proceed to appear in Final Examination. The final decision in these matters will be at the discretion of Head of the Department.

10.4 Preliminary Examination - Preliminary Examination shall be taken at the of 33months & shall have

a) Four theory papers of 400 marks (100 marks each) All the paper (I, II, III & IV) will have following pattern -

It will have two sections each -

Section A: will have two LAQs 25 marks each (50marks)

Section B: will have five SAQs of 10 marks each (50 marks)

b) Practical 400 marks:

- i) Long Case (1) : 150 marks
- ii) Short Cases (2) : 130 marks
- iii) Table viva(4 tables) : 120 marks

Total : 400 marks

(11) FINAL EXAMINATION (M.D. ANAESTHESIOLOGY)

11.1 The M.D. Final Examination will be conducted under two heads,

11.1.1 Theory

11.1.2 Practicals

11.2 Rules for Thesis/dissertation are as under that heading and are applicable as such.

11.2.1 Theory:

1. There shall be 4 papers, each of three hours duration carrying 100 marks each.
2. The pattern of theory papers will be the same as preliminary examination

11.2.2 Practicals:

Practical Examination will comprise of Total of 400 marks: under the following headings:

1. **Long Case:** 150 marks.
2. **Short Cases:** 130 marks; 2 cases each of 65 marks.
3. **Table viva :** marks under 4 subheadings - of 30 marks each – Total 120 marks
 - i) Drugs
 - ii) ECG/X-Rays/ABGAnalyses/ Pulmonary function Tests
 - iii) Instruments: Routine, standards, Resuscitation.
 - iv) Equipments: Anaesthesia machine, Ventilators, Monitors etc.

(12) NOMENCLATURE OF THEORY PAPERS:

PAPER I – Basic Sciences as applied Anaesthesiology

PAPER II – Theory & Practice of Anaesthesia

PAPER III – Clinical disciplines as applied to Anaesthesiology, inclusive of disease processes.

PAPER IV– Recent Advantages & Super specialties as applied to Anaesthesiology

(13) CONTENTS OF THEORY PAPERS :

PAPER - I: Basic Sciences as applied to Anaesthesiology- Anatomy, Physiology, Pharmacology, Microbiology, Pathology & Physics

PAPER - II: Theory & Practice of Anaesthesia including techniques, Procedures, Methodologies of Anaesthesia and their application in various situations.

PAPER - III: Medicine, Surgery & various clinical disciplines, inclusive of various Disease process, pathological condition and other abnormalities as applied to Anaesthesiology

PAPER - IV: Recent Advances Super specialties as applied to Anaesthesiology, critical care & Pain Management.

(14) EXAMINERS :

14.1 Number of Examiners for MD and DA will be 4

Internal – 2, External – 2

14.2 Empananelling of examiners will be done by the Dr. D.Y. Patil University as per the rules & regulations of the University.

(15) RECOMMENDED BOOKS :

15.1 Text Books:

- 15.1.1 Lee's Synopsis of Anaesthesia by Atkinson...13th edn.
- 15.1.2 Textbook of Anaesthesia by Aitkenhead, Rowbotham and Smith...6th edn.
- 15.1.3 Wylie Churchill-Davidson's Textbook of Anaesthesia...7th edn.
- 15.1.4 Anaesthesia by Ronald D. Miller...8th edn.

15.2 Reference Books

- 15.2.1 Clinical Anaesthesia by Stoelting...7th edn.
- 15.2.2 Critical Care by Civetta, Taylor and Kirby...4th edn.
- 15.2.3 Anaesthesia and Co-existing Diseases Stoelting...7th edn.
- 15.2.4 Pain and It's Management by Ferrante...3rd edn.
- 15.2.5 Recent advances
- 15.2.6 Year book of anaesthesia
- 15.2.7 CME books published at National / International conferences
- 15.2.8 Morgan & Mikhail's Clinical Anaesthesiology...5th edn.
- 15.2.9 Guyton & Hall textbook of Medical Physiology...13th edn.
- 15.2.10 Harrison's principles of Internal Medicine...20th edn.

15.3 Journals

- 15.3.1 Indian Journal Of Anaesthesia
- 15.3.2 British Journal of Anaesthesia
- 15.3.3 Anesthesiology
- 15.3.4 Journal of Anaesthesiology, Clinical Pharmacology
- 15.3.5 Anaesthesia and Analgesia
- 15.3.6 Indian Journal of Critical Care

- 15.3.7 Canadian Journal of Anaesthesia
- 15.3.8 European Journals of Anaesthesiology
- 15.3.9 The Journal of the American society of Anaesthesiologists
- 15.3.10 Indian Journal of Critical care Medicine
- 15.3.11 Harrison's principles of Internal Medicine 20th edn.