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MAHATMA GANDHI UNIVERSITY
of
MEDICAL SCIENCES & TECHNOLOGY
SITAPURA, JAIPUR



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of
MEDICAL SCIENCES & TECHNOLOGY
SITAPURA, JAIPUR

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Price : ` 000.00

PGCC - CARDIOLOGY
(One Year Certificate Course)



MAHATMA GANDHI UNIVERSITY
of
MEDICAL SCIENCES & TECHNOLOGY
JAIPUR

Syllabus

PGCC - CARDIOLOGY
(One Year Certificate Course)

PGCC
Cardiology

Edition 2015

NOTICE

1. Amendments made by the Board of Management of the University in Rules / Regulations of Post Graduate Medical Courses shall automatically apply to the Rules/ Regulations of the Mahatma Gandhi University of Medical Sciences & Technology.
2. The University reserves the right to make changes in the syllabus/books/ guidelines, fee-structure or any other information at any time without prior notice. The decision of the University shall be binding on all.
3. The Jurisdiction of all court cases shall be Jaipur Bench of Hon'ble Rajasthan High Court only.

One Year Certificate Course
POST GRADUATE CERTIFICATE COURSE
IN CARDIOLOGY (7210)

SCHEME OF EXAMINATION

1. Theory:

- (a) There will be two Theory papers examination at the end of the academic year. Each Theory paper examination shall be of 3 hours duration and of maximum marks 80.
- (b) For each question paper there shall be a separate Internal Examiner. These papers shall be evaluated by the concerned Internal Examiners (Papers Setters).
- (c) The Paper Setter shall set the questions within the prescribed course of study of the concerned paper. There will be a set pattern of question papers duly approved by Academic Council. Model question paper for examination is annexed herewith.
- (d) It is to be noted that the Internal Examiners shall be appointed by the President of the University in consultation with the respective Coordinator of the course. This exercise shall be conducted through the office of the Controller of the Examinations of the University.
- (e) **Internal Assessment:** Internal assessment shall be of 20 marks for Each Theory paper.
- (f) **Passing Marks:** A candidate will have to obtain at least 50% marks in each Theory paper to pass. This means that he will have to score 50 marks in each paper. This shall include the marks obtained in Theory paper of 80 marks and internal assessment for that paper of 20 marks (Marks obtained in Theory paper + Marks obtained in internal assessment = the Total Marks obtained in each paper).

2. Practical and Viva-Voce Examination

There shall be one practical and viva-voce examination. It shall be conducted after the Theory examination is over. The pattern shall be as follows –

- (a) The practical and viva voce examination shall be conducted by one External and two Internal examiners. The Internal examiners shall be appointed by the President of the University in consultation with the respective Coordinator of the course. The External examiner shall also be appointed by the President out of the panel of names submitted by the Coordinator of the course through the Controller of Examinations to the President. The President may or may not consult the Coordinator before the appointment of the External practical examiner.
- (b) Total marks of the practical examination shall be equivalent to the total marks put together of the number of Theory papers in the course. It shall mean that it shall be 200.
- (c) It shall be left to the examiners – Internals and the External, to examine and evaluate the students in practical in the way they wish and award the marks without giving any specific details. The total marks obtained by the

candidate in the practical examination shall be the aggregate of the marks awarded by the three practical examiners (2 Internals and 1 External) put together as one figure. This shall then be submitted to the University. For example in case of "University Advanced Post Graduate Certificate Course in Cardiology" having three practical examiners, it shall be 60 (first examiner), 50 (second examiner) plus 50 (third examiner) – total $60+50+50 = 160$, which shall be submitted as one figure to the University. The award sheet shall be signed by all the practical examiners.

- (d) A student shall be required to obtain a minimum of 50% pass marks in the practical examination. This means 100 out of 200.
- (e) A candidate who fails to obtain 50% marks shall be declared failed in the practical examination.

3. Result:

A candidate will have to obtain at least 50% marks separately in each Theory paper and a minimum of 50% marks in the practical examination for him to be declared pass.

4. Supplementary Examination:

- (a) Eligibility for the failed candidates to appear at the supplementary examination shall be as below –
 - i. Failed in Theory Paper(s) and failed in Practical – shall reappear in the respective failed Theory paper(s) and Practical examination.
 - ii. Failed in Theory paper/papers and passed in Practical examination – shall reappear only in the concerned failed Theory paper(s).
 - iii. Passed Theory papers but failed in Practical – shall reappear only in the Practical Examination.
- (b) There shall be a supplementary examination within two months of the declaration of the result of the main examination. Internal assessment marks obtained in main examination in the concerned failed paper/papers shall be carried forward for working out the result of supplementary Theory paper(s) examination. Such candidate who has secured less than 50% marks in the internal assessment will be allowed to improve his internal assessment marks in the repeat supplementary internal assessment examination.
- (c) Marks secured by the candidate in the main examination passed Theory paper(s) and/or practical of the main examination, as the case may be, will be carried forward for working out his result.
- (d) **Result –**
 - i. A candidate obtaining at least 50% marks in the supplementary Theory paper(s) and 50% marks in the supplementary practical examination, as the case may be, shall be declared successful.
 - ii. A candidate who has failed in supplementary theory paper(s) examination shall have to reappear only in the failed theory paper(s) at the next main examination.

- iii. A candidate who has failed in supplementary practical examination shall have to reappear both in theory (all papers) and practical at the next main examination.
- (e) **No reevaluation** of answer books either of main or of the supplementary examination shall be permitted. However, the student can apply for scrutiny of the answer books.
- (f) The candidate will be allowed to avail maximum **four attempts** including supplementary (one main + one supplementary + one main + one supplementary) to pass the examination. After that he will have to leave the course. Non-appearance at an examination shall be counted an attempt.

5. Result-Division: Successful candidates will be categorized as under –

i.	Those, securing 50% and above but less than 60% in the aggregate marks	-	Pass
ii.	Those, securing 60% and above but less than 75% in the aggregate marks	-	Pass with I Division
iii.	Those, securing 75% and above in the aggregate marks	-	Pass with Honours

**POST GRADUATE CERTIFICATE
COURSE IN CARDIOLOGY (7210)**

1. DURATION OF THE COURSE: 1 Year

2. ELIGIBILITY: MBBS/MD

3. OBJECTIVES:

This course is designed to provide comprehensive theoretical and practical knowledge, required to care for cardiac patients at secondary level of health care.

4. SYLLABUS:

Subject	Maximum Marks		
	Theory	I Ass.	Practical
Paper I (7211) - Basic Cardiology	80	20	200
Paper II (7212) - Applied Cardiology	80	20	

4.1 Theory:

Paper I (7211) - Basic Cardiology

- (1) Anatomy and Physiology of Cardiovascular System
- (2) Electrocardiogram
- (3) TMT
- (4) Echocardiogram
- (5) Holter
- (6) Chest X-ray
- (7) MRI
- (8) Cardiac CT
- (9) Atherosclerosis
- (10) Hypertension
- (11) Cardiac Arrhythmia
- (12) Congenital Heart Diseases
- (13) Related Laboratory Investigations
- (14) Other relevant subjects related to Cardiology

Paper II (7212) - Applied Cardiology

- (1) Heart failure
- (2) Cardiac arrhythmia (include pacemaker and other devices)
- (3) Coronary Artery Disease i.e. myocardial infarction, angina
- (4) Preventive cardiology (risk factors and managements)
- (5) Cardiac arrest and its managements
- (6) Angiography
- (7) PTCA

- (8) Coronary Artery Surgery
- (9) Non Surgical Management of Congenital Heart Disease
- (10) Vascular Diseases
- (11) Artificial Heart
- (12) Cardiac Support
- (13) Drug in Cardiac Ailment
- (14) Other Relevant subject related to the Applied Cardiology and Management of Cardiovascular Diseases.

4.2 Practical:

ECG, Imaging (Chest X-ray, ECHO, TMT, CT Angio, MRI) Viva Voce -100 mark
Long Case : 2 short Case 3 -100 mark

PGCC
7211

Bas.Card.- I

Post Graduate Certificate Course in Cardiology

(Main) Examination Month Year

Paper I

Basic Cardiology

Time: Three Hours

Maximum Marks: 80

Attempt all Questions

Q.No.1 Modified Essay Type question	20
Q.No.2 Modified Essay Type question	20
Q.No.3 Short Notes (Any five out of seven)	40

MODEL PAPER

PGCC
7211

Bas.Card.- I

PGCC
7212

Appl.Card.- II

Post Graduate Certificate Course in Cardiology

(Main) Examination Month Year

Paper I

Basic Cardiology

Time: Three Hours

Maximum Marks: 80

Attempt all Questions

Q.No.1	Describe the cardiac cycle	20
Q.No.2	Describe the pathophysiology of Hypertension. Classify the drugs used in treatment of Hypertension	20
Q.No.3	Write short notes (Any five out of seven)	40
	(a) Parts of ECG	
	(b) Causes of Atherosclerosis	
	(c) Ventricular Septal Defect	
	(d) Types of Arrhythmia	
	(e) Troponin T test	
	(f) Drugs used in Hyperlipidemia	
	(g) Role of Holter in recording ECG	

Post Graduate Certificate Course in Cardiology

(Main) Examination Month Year

Paper II

Applied cardiology

Time: Three Hours

Maximum Marks: 80

Attempt all Questions

Q.No.1	Modified Essay Type question	20
Q.No.2	Modified Essay Type question	20
Q.No.3	Short Notes (Any five out of seven)	40

**Post Graduate Certificate Course in Cardiology
(Main) Examination Month Year**

Paper II

Applied cardiology
Time: Three Hours
Maximum Marks: 80
Attempt all Questions

- Q.No.1 Explain the pathogenesis of Myocardial infarction. 20
Describe the treatment of Myocardial Infarction.
- Q.No.2 Describe in detail the management of congenital heart disease. 20
- Q.No.3 Write short notes (Any five out of seven) 40
- (a) Artificial heart
 - (b) PTCA
 - (c) Angiography
 - (d) Cardiac support
 - (e) Impact of Obesity on cardiac diseases
 - (f) Cardioselective Beta Blockers
 - (g) CABG