MAHATMA GANDHI UNIVERSITY
of
MEDICAL SCIENCES & TECHNOLOGY
JAIPUR

Syllabus

PGCC TRANSFUSION MEDICINE

(One Year Certificate Course)

NOTICE

1. Amendments made by the Board of Management of the University in Rules / Regulations of 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.

PGCC TRANSFUSION MEDICINE

(One year Post Graduate Certificate Course)

RULES & REGULATIONS

DURATION OF COURSE:
The course shall be of One year duration from the date of commencement of academic session

MEDIUM OF INSTRUCTION
English shall be the medium of instruction.

ELIGIBILITY FOR ADMISSION:
For admission a candidate should have passed the MBBS

SELECTION OF CANDIDATES:
Selection for UAPGCC TM Course shall be done by an Admission Board strictly on merit judged on the basis of University Entrance Examination conducted in the month of July / August every year.

ATTENDANCE:

75% in Theory and Practical separately. Any candidate failing to achieve this, shall not be permitted to appear in the University examination.

ELIGIBILITY AND ENROLMENT:
Every candidate who is admitted to the Course in Mahatma Gandhi Medical College shall be required to get himself/herself enrolled with the Mahatma Gandhi University of Medical Sciences & Technology after paying the prescribed eligibility and enrolment fees.
A candidate shall deposit enrolment fees along with tuition fees at the time of his/her admission to the course. Such a candidate who fails to submit, through the college Principal, duly filled enrolment form along with original documents including migration certificate required for enrolment within two months of his/her admission or up to November 30 of the year of admission whichever is later, he/she will have to pay late fee prescribed by the University.

No candidate shall be allowed to appear in University examination without his/her enrolment with the University

TRAINING:
1. The period of training for PGCC Transfusion Medicine Course shall be of one year from the date of admission.
2. The students who have been registered late in the medical college will not be allowed to appear in the regular examination and they will be required to complete the period of study prescribed and fulfill the requirement of attendance.
3. The candidate will undertake the post graduate training as a full time post graduate in the department concerned. The head of the department concerned shall certify that the students has been regular and undergone training programme according to the requirements.

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 Transfusion Medicine" 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 revaluation** 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

POST GRADUATE CERTIFICATE COURSE IN TRANSFUSION MEDICINE

1. **DURATION OF THE COURSE:** 1 Year

2. **ELIGIBILITY: MBBS/MD**

3. **OBJECTIVES:**

The objective of this focused learning is to empower with clinical expertise and skills, with practice guidelines and procedures; and guidance in Transfusion Medicine. (Basic concepts of immunity in relation to blood transfusion, Common blood group of importance, Methods of Blood grouping, Rare blood group like Bombay blood group, Blood donors and their selection, Therapeutic Apheresis, Blood components, Biologic safety precautions, Transfusion Management, safety precautions, Stem cell collection and cellular therapy.)

1. **SYLLABUS:**

Subject	**Maximum Marks**		
	Theory	**Internal Ass.**	**Practical**
Paper I – Basics of Immunohematology & Transfusion Medicine	80	20	200
Paper II - Applied and advance aspects of Transfusion services and Cellular Therapy	80	20	

4.1 Theory:

Paper I - Basics of Immunohematology & Transfusion Medicine

1. Basic principles of immunohematology
2. ABO blood group system
3. Rh blood group system
4. Other blood group system
5. All material and reagents used for different investigations in blood bank.
6. Blood grouping techniques
7. Antibody screening and identification
8. Compatibility testing
9. Donor selection, blood collection and processing
10. Preservation and storage of blood
11. Blood component preparation
12. Screening test
13. Quality assurance in transfusion service

Paper II - Applied and advance aspects of Transfusion services and Cellular Therapy

1. Adverse Transfusion Reaction
2. Judicious use of blood/components
3. Apheresis
4. Therapeutic Plasma Exchange
5. Peripheral blood Stem cell harvesting
6. Cryopreservation
7. Haemovigilance

8. Cellular therapy
9. Granulocyte Collection
10. Transplant immunology workups
11. Blood Camp management
12. Medico legal aspects in Transfusion services

4.2 Practical:

Viva Voce	– 100 mark
Clinical cases and apheresis	-100 marks

MODEL PAPER

PGCC Paper– I

PGCC Transfusion Medicine - (Main) Examination month year

Paper – I

Basics of Immunohematology & Transfusion Medicine

Time: Three Hours
Maximum Marks: 80

Attempt all Questions.
All the parts of one question should be answered at one place in sequential order.
Illustrate your answers with suitable diagrams, wherever necessary.

Q. 1 Describe clinical features and investigations required in a case of hemophilia A. (20)

Q. 2 What is the clinical significance of allo antibodies? Describe the method in detail for performing the workup for identification of antibodies. (20)

Q. 3 Write short notes on (any four) (10 x 4 = 40)

a) Patient blood management
b) Uses of platelets
c) Coombs test
d) NAT test
e) Leukodepletion

MODEL PAPER

PGCC Paper– II

PGCC Transfusion Medicine – (Main) Examination month year

Paper-II

Applied & Advance Aspects of Transfusion Services & Cellular Therapy

Time: Three Hours
Maximum Marks: 80

Attempt all Questions.
All the parts of one question should be answered at one place in sequential order.
Illustrate your answers with suitable diagrams, wherever necessary.

Q. 1. Describe the procedure and prerequisite for Peripheral blood stem cell collection by apheresis. [20]

Q. 2. Enumerate the various steps of Cryopreservation and its utilization in the Cellular therapy. [20]

Q. 3. Write short notes on. (any four) [10 x 4 = 40]

a) DMSO
b) Gene therapy
c) CAR-T cell
d) CD 34 enumeration
e) Double filtration plasma pheresis