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**RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES, KARNATAKA**

**(RGUHS), BANGALORE – 560 041**

**Pharm D Revised Regulations 2008**

**(Effective from 2012-2013)**

**1. ELIGIBILITY**

**1.1 Qualifying Examination**

i)Candidates who have passed two year P.U.C. examination of Karnataka P.U.C. Board or an equivalent examination of any other approved Board or University established by law in India with English as one of the subject and Physics, Chemistry as compulsory subjects along with one of the following subject – Mathematics or Biology or P.C.M .B. Minimum eligibility should be based on the aggregate of P.C.M. or P.C.B. The candidates shall have passed subjects of English, Physics, Chemistry and Biology / Mathematics individually also.

ii)Candidates who have passed D.Pharm course from institutions approved by Pharmacy Council of India U/S 12 of Pharmacy Act, 1948, are only eligible to be admitted to first year Pharm. D course.

**1.2 Age**

The candidate should have completed 17 years of age on or before 31st day of December of the year of admission to the course.

**2. Duration of the course**

Pharm.D: The duration of the course shall be six academic years (five years of study and one year of internship or residency) full time with each academic year spread over a period of not less than two hundred working days. The period of six years duration is divided into two phases –

Phase I – consisting of First, Second, Third , Fourth and Fifth academic year.

Phase II – consisting of internship or residency tr aining during sixth year involving posting in speciality units. It is a phase of training wherein a student is exposed to actual pharmacy practice or clinical pharmacy services and acquires skill under supervision so that he or she may become capable of functioning independently.

**3. Medium of Instruction**

Medium of Instruction and Examination Shall be English.

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**4. Attendance and Progress**

A candidate is required to put in at least 80% attendance in theory and practical subjects separately in a recognized institution approved by Pharmacy council of India and affiliated to Rajiv Gandhi University of Health Sciences, Karnataka. The candidate shall complete prescribed course satisfactorily to be eligible to appear for the respective examination.

**5. Course of study**

a)The course of study for Pharm.D. Shall include the subjects as given in the Tables below. The number of hours in a week, devoted to each subject for its teaching in theory, practical and tutorial shall not be less than that noted against it in columns (3), (4) and (5) below.

**T A B L E S**

**First Year :**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No.** | **Name of Subject** | **No. of** | **No. of** | **No. of** |
|  |  | **hours of** | **hours of** | **hours of** |
|  |  | **Theory** | **Practical** | **Tutorial** |
|  |  |  |  |  |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
|  |  |  |  |  |
| 1.1 | Human Anatomy and Physiology | 3 | 3 | 1 |
|  |  |  |  |  |
| 1.2 | Pharmaceutics | 2 | 3 | 1 |
|  |  |  |  |  |
| 1.3 | Medicinal Biochemistry | 3 | 3 | 1 |
|  |  |  |  |  |
| 1.4 | Pharmaceutical Organic Chemistry | 3 | 3 | 1 |
|  |  |  |  |  |
| 1.5 | Pharmaceutical Inorganic Chemistry | 2 | 3 | 1 |
|  |  |  |  |  |
| 1.6 | Remedial Mathematics/ Biology\*\* | 3 | 3\* | 1 |
|  |  |  |  |  |
|  | **Total hours** | **16** | **18** | **6 = (40)** |
|  |  |  |  |  |

\*For Biology

\*\*For candidates who have studied PCMB in 10+2 course are exempted.

\*\*Colleges to conduct the Examination.

3

**Second Year:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No** | **Name of Subject** | **No. of** | **No. of** | **No. of** |
|  |  | **hours of** | **hours of** | **hours of** |
|  |  | **Theory** | **Practical** | **Tutorial** |
|  |  |  |  |  |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
|  |  |  |  |  |
| 2.1 | Pathophysiology | 3 | - | 1 |
|  |  |  |  |  |
| 2.2 | Pharmaceutical Microbiology | 3 | 3 | 1 |
|  |  |  |  |  |
| 2.3 | Pharmacognosy & Phytopharmaceuticals | 3 | 3 | 1 |
|  |  |  |  |  |
| 2.4 | Pharmacology-I | 3 | - | 1 |
|  |  |  |  |  |
| 2.5 | Community Pharmacy | 2 | - | 1 |
|  |  |  |  |  |
| 2.6 | Pharmacotherapeutics-I | 3 | 3 | 1 |
|  |  |  |  |  |
|  | **Total Hours** | **17** | **9** | **6 = 32** |
|  |  |  |  |  |

**Third Year:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No.** | **Name of Subject** | **No. of** | **No. of** | **No. of** |
|  |  | **hours of** | **hours of** | **hours of** |
|  |  | **Theory** | **Practical** | **Tutorial** |
|  |  |  |  |  |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
|  |  |  |  |  |
| 3.1 | Pharmacology-II | 3 | 3 | 1 |
|  |  |  |  |  |
| 3.2 | Pharmaceutical Analysis | 3 | 3 | 1 |
|  |  |  |  |  |
| 3.3 | Pharmacotherapeutics-II | 3 | 3 | 1 |
|  |  |  |  |  |
| 3.4 | Pharmaceutical Jurisprudence | 2 | - | - |
|  |  |  |  |  |
| 3.5 | Medicinal Chemistry | 3 | 3 | 1 |
|  |  |  |  |  |
| 3.6 | Pharmaceutical Formulations | 2 | 3 | 1 |
|  |  |  |  |  |
|  | **Total hours** | **16** | **15** | **5 = 36** |
|  |  |  |  |  |

4

**Fourth Year:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No.** | **Name of Subject** | **No. of** | **No. of** | **No. of** |
|  |  | **hours of** | **hours of** | **hours of** |
|  |  | **Theory** | **Practical/** | **Tutorial** |
|  |  |  | **Hospital** |  |
|  |  |  | **Posting** |  |
|  |  |  |  |  |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
|  |  |  |  |  |
| 4.1 | Pharmacotherapeutics-III | 3 | 3 | 1 |
|  |  |  |  |  |
| 4.2 | Hospital Pharmacy | 2 | 3 | 1 |
|  |  |  |  |  |
| 4.3 | Clinical Pharmacy | 3 | 3 | 1 |
|  |  |  |  |  |
| 4.4 | Biostatistics & Research Methodology | 2 | - | 1 |
|  |  |  |  |  |
| 4.5 | Biopharmaceutics & Pharmacokinetics | 3 | 3 | 1 |
|  |  |  |  |  |
| 4.6 | Clinical Toxicology | 2 | - | 1 |
|  |  |  |  |  |
|  | **Total hours** | **15** | **12** | **6 = 33** |
|  |  |  |  |  |

**Fifth Year:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.No.** | **Name of Subject** |  | **No. of** | **No. of** | | **No. of** | | |
|  |  |  | **hours of** | **hours of** | | **hours of** | | |
|  |  |  | **Theory** | **Hospital** | | **Seminar** | | |
|  |  |  |  | **posting\*** | |  |  |  |
|  |  |  |  |  | |  | | |
| **(1)** | **(2)** |  | **(3)** | **(4)** | | **(5)** | | |
|  |  |  |  |  | |  | | |
| 5.1 | Clinical Research |  | 3 | - | | 1 | | |
|  |  |  |  |  | |  | | |
| 5.2 | Pharmacoepidemiology and |  | 3 | - | | 1 | | |
|  | Pharmacoeconomics |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | | |
| 5.3 | Clinical Pharmacokinetics & |  | 2 |  | - | 1 | | |
|  |
|  | Pharmacotherapeutic Drug Monitoring |  |  |  |  |  |  |  |
|  |  |  |  |  | |  | | |
| 5.4 | Clerkship \* |  | - | - | | 1 | | |
|  |  |  |  |  | |  |  |  |
| 5.5 | Project work (Six Months) |  | - | 20 | |  | - |  |
|  |  |
|  |  |  |  |  | |  | | |
|  | **Total hours** |  | **8** | **20** | | **4 = 32** | | |
|  |  |  |  |  |  |  |  |  |

***\****Attending ward rounds on daily basis.

5

**Sixth Year:**

Internship or residency training including postings in special ity units. Student should independently provide the clinical pharmacy services to the allotted wards.

(i)Six months in General Medicine department, and

(ii)Two months each in three other speciality departments

**6.Approval of institution conducting the course of study**

The regular course for Pharm.D. I, II, III, IV, V and VI year shall be conducted by an institution approved by Pharmacy Council of India and affiliated to Rajiv Gandhi University of Health Sciences, Karnataka. Institution running Pharm D regular courses only shall be permitted to start Pharm D (Post Baccalaureate) course. The approval and affiliation will be granted only if adequate arrangements for teaching-infrastructural facilities, accommodation, equipments, chemicals, glassware, library, teaching and non- teaching staff are provided as prescribed by Pharmacy Council of India and as required under the norms of Rajiv Gandhi University of Health Science, Karnataka(as prescribed in Appendix B).

**7. Academic Work**

The teaching staff of respective subjects shall maintain a regular record of attendance in both Theory and Practical.

***Internal Assessment Marks***

A. Theory: Three sessional examinations evenly spread during the academic year shall be conducted by the affiliated colleges. The average marks of the best two examinations shall be computed out of a maximum 30 marks and shall constitute the sessional marks in theory. Provided further the colleges may conduct one special theory sessional examination towards the end of the academic session for those who might have missed any one of the regular sessional examination on genuine grounds.

B. Practical: Students are expected to perform the number of experiments listed in the respective syllabus. Marks shall be awarded out of a maximum of 10 to each of the practical exercise and an average of those shall be computed out of maximum of 10 each marks. In addition, three practical sessional examinations evenly spread during academic year shall be conducted. The average marks of the best two practical examinations shall be computed out of a maximum of 20 marks. A total of 30 marks shall constitute the sessional award in practical. While awarding the sessional marks of practical experiments, the following considerations should be taken into account.

1.Preparation of the candidate.

2.Manipulative skills.

3.Results of the experiment.

4.Knowledge of the experiment

5.Viva voce pertaining to the experiments only.

6

The College shall maintain the sessional books of the students and the record of sessional marks of the students.

A regular record of both theory and practical class work and sessional examinations conducted in an institution imparting the course shall be maintained for each student in the institution.

**8.Examination for Pharm D**

(1)Every year there shall be an examination to examine the students.

(2)Each examination may be held twice every year. The first examination in a year shall be the annual examination and the second examination shall be supplementary examination.

(3)The examinations shall be of written and practical (including oral nature) carrying maximum marks for each part of a subject as indicated in Tables below :

**T A B L E S**

**First Year examination :**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.No.** | **Name of Subject** | | | **Maximum marks for Theory** | | | **Maximum marks for Practicals** | | |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | **Examination** | **Sessional** | **Total** | **Examination** | **Sessional** | **Total** |
|  |  |  | |  |  |  |  |  |  |
| 1.1 | Human | Anatomy and | | 70 | 30 | 100 | 70 | 30 | 100 |
|  | Physiology | |  |  |  |  |  |  |  |
| 1.2 | Pharmaceutics | |  | 70 | 30 | 100 | 70 | 30 | 100 |
| 1.3 | Medicinal Biochemistry | | | 70 | 30 | 100 | 70 | 30 | 100 |
| 1.4 | Pharmaceutical | | Organic | 70 | 30 | 100 | 70 | 30 | 100 |
|  | Chemistry |  |  |  |  |  |  |  |  |
| 1.5 | Pharmaceutical | | Inorganic | 70 | 30 | 100 | 70 | 30 | 100 |
|  | Chemistry |  |  |  |  |  |  |  |  |
| 1.6 | Remedial | Mathematics/ | | 70 | 30 | 100 | 70\* | 30\* | 100\* |
|  | Biology |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | 600 |  |  | 600 = 1200 |
|  |  |  |  |  |  |  |  |  |  |

\* for Biology.

7

**Second Year examination :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S.No.** | **Name of Subject** | **Maximum marks for Theory** | | | **Maximum marks for Practicals** | | |
|  |  |  |  |  |  |  |  |
|  |  | **Examination** | **Sessional** | **Total** | **Examination** | **Sessional** | **Total** |
|  |  |  |  |  |  |  |  |
| 2.1 | Pathophysiology | 70 | 30 | 100 | - | - | **-** |
| 2.2 | Pharmaceutical | 70 | 30 | 100 | 70 | 30 | 100 |
|  | Microbiology |  |  |  |  |  |  |
| 2.3 | Pharmacognosy & | 70 | 30 | 100 | 70 | 30 | 100 |
|  | Phytopharmaceuticals |  |  |  |  |  |  |
| 2.4 | Pharmacology-I | 70 | 30 | 100 | - | - | **-** |
| 2.5 | Community Pharmacy | 70 | 30 | 100 | - | - | **-** |
| 2.6 | Pharmacotherapeutics-I | 70 | 30 | 100 | 70 | 30 | 100 |
|  |  |  |  | 600 |  |  | 300 = 900 |

**Third Year examination :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S.No.** | **Name of Subject** | **Maximum marks for Theory** | | | **Maximum marks for Practicals** | | |
|  |  |  |  |  |  |  |  |
|  |  | **Examination** | **Sessional** | **Total** | **Examination** | **Sessional** | **Total** |
|  |  |  |  |  |  |  |  |
| 3.1 | Pharmacology-II | 70 | 30 | 100 | 70 | 30 | 100 |
| 3.2 | Pharmaceutical Analysis | 70 | 30 | 100 | 70 | 30 | 100 |
| 3.3 | Pharmacotherapeutics-II | 70 | 30 | 100 | 70 | 30 | 100 |
| 3.4 | Pharmaceutical | 70 | 30 | 100 | - | - | **-** |
|  | Jurisprudence |  |  |  |  |  |  |
| 3.5 | Medicinal Chemistry | 70 | 30 | 100 | 70 | 30 | 100 |
| 3.6 | Pharmaceutical Formulations | 70 | 30 | 100 | 70 | 30 | 100 |
|  |  |  |  | 600 |  |  | 500 = 1100 |

**Fourth Year examination :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S.No.** | **Name of Subject** | **Maximum marks for Theory** | | | **Maximum marks for Practicals** | | |
|  |  |  |  |  |  |  |  |
|  |  | **Examination** | **Sessional** | **Total** | **Examination** | **Sessional** | **Total** |
|  |  |  |  |  |  |  |  |
| 4.1 | Pharmacotherapeutics-III | 70 | 30 | 100 | 70 | 30 | 100 |
| 4.2 | Hospital Pharmacy | 70 | 30 | 100 | 70 | 30 | 100 |
| 4.3 | Clinical Pharmacy | 70 | 30 | 100 | 70 | 30 | 100 |
| 4.4 | Biostatistics & Research | 70 | 30 | 100 | - | - | **-** |
|  | Methodology |  |  |  |  |  |  |
| 4.5 | Biopharmaceutics & | 70 | 30 | 100 | 70 | 30 | 100 |
|  | Pharmacokinetics |  |  |  |  |  |  |
| 4.6 | Clinical Toxicology | 70 | 30 | 100 | - | - | **-** |
|  |  |  |  | 600 |  |  | 400 = 1000 |

8

**Fifth Year examination :**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S.No.** | **Name of Subject** | **Maximum marks for Theory** | | | **Maximum marks for Practicals** | | |
|  |  |  |  |  |  |  |  |
|  |  | **Examination** | **Sessional** | **Total** | **Examination** | **Sessional** | **Total** |
|  |  |  |  |  |  |  |  |
| 5.1 | Clinical Research | 70 | 30 | 100 | - | - | **-** |
| 5.2 | Pharmacoepidemiology and | 70 | 30 | 100 | - | - | **-** |
|  | Pharmacoeconomics |  |  |  |  |  |  |
| 5.3 | Clinical Pharmacokinetics | 70 | 30 | 100 | - | - | **-** |
|  | & Pharmacotherapeutic Drug |  |  |  |  |  |  |
|  | Monitoring |  |  |  |  |  |  |
| 5.4 | Clerkship \* | - | - | **-** | 70 | 30 | 100 |
| 5.5 | Project work (Six Months) | - | - | **-** | 100\*\* | - | 100 |
|  |  |  |  | 300 |  |  | 200 = 500 |

***\****Attending ward rounds on daily basis.

**\*\***30 marks – viva-voce (oral)

70 marks

–Thesis

work

**9. Mode of examinations**

(1) Theory examination shall be of three hours and practical examination shall be of four hours duration.

(2)Practical examination shall also consist of a viva –voce (Oral) examination.

(3)Clerkship examination – Oral examination shall be conducted after the completion of clerkship of students. An external and an internal examiner will evaluate the student. Students may be asked to present the allotted medical cases followed by discussion. Students’ capabilities in delivering clinical pharmacy services, pharmaceutical care planning and knowledge of therapeutics shall be assessed.

**10.Criteria for Pass**

a)Candidates who have secured a minimum of 50% marks in the Theory (including sessional) and Practical (including sessional) separately in any subject or subjects shall be declared to have passed in that subject/ and exempted from appearing in that subject/s at subsequent examination.

b)Theory and Practical of a particular subject are considered as individual subjects for the purpose of pass criteria.

**11. Eligibility for promotion to next year**

All students who have appeared for all the subjects and passed the first year annual examination are eligible for promotion to the second year and, so on. However, failure in more than three subjects shall debar him or her from promotion to the next year classes.

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**12. Declaration of Class**

Class shall be awarded at the end of I, II, III, IV, V and final year of Pharm. D examination as shown below:

|  |  |  |
| --- | --- | --- |
| 1) | Distinction | 75% |
| 2) | First class | 60% and above and less than 75% |
| 3) | Second Class | 50% and above and less than 60% |

Pass class shall be awarded to such of the candidates who would have passed the examination in more than one attempt. However, this shall not be applicable to candidates who are exempted in Remedial Biology and Remedial Mathematics by the RGUHS Karnataka, Bangalore.

**13. Internship**

(1)Internship is a phase of training wherein a student is expected to conduct actual practice of pharmacy and health care and acquires skills under the supervision so that he or she may become capable of functioning independently.

(2)A student shall be permitted to start the internship only after having passed in theory and practical of all subjects of all the previous years.

(3)Every student has to undergo one-year internship as per Appendix-C to these regulations.

**14. Award of Degree**

a)A candidate who has passed in all the subjects of Pharm.D course has successfully completed the Internship (as described in appendix C) will be eligible for the award of Pharm. D degree.

**15. Practical training**

1.**Hospital posting**― Every student shall be posted in constituent hospital for a period of not less than seventy five hours to be covered in not less than 200 working days in each of second, third & fourth year course. Each student shall submit report duly certified by the preceptor and duly attested by the Head of the Department or Institution as prescribed. In the fifth year, every student shall spend half a day in the morning hours attending ward rounds on daily basis as a part of clerkship. Theory teaching may be scheduled in the afternoon.

2.**Project work**― (1) To allow the student to develop data collection and reporting skills in the area of community, hospital and clinical pharmacy, a project work shall be carried out under the supervision of a teacher. The project topic must be approved by the Head of the Department or Head of the Institution. The same shall be announced to students within one month of commencement of the fifth year classes. Project work shall be presented in a written report and as a seminar at the end of the year. External and the internal examiners shall do the assessment of the project work.

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(2)Project work shall comprise of objectives of the work, methodology, results, discussions and conclusions.

3.**Objectives of project work**― The main objectives of the project work is to―

(i) show the evidence of having made accurate description of published work of others and of having recorded the findings in an impartial manner; and

(ii) develop the students in data collection, analysis and reporting and interpretation skills.

4.**Methodology**― To complete the project work following methodology shall be adopted, namely:―

(i) students shall work in groups of not less than *two*and not more than *four*under an authorised teacher;

(ii) project topic shall be approved by the Head of the Department or Head of the Institution;

(iii)project work chosen shall be related to the pharmacy practice in community, hospital and clinical setup. It shall be patient and treatment (Medicine) oriented, like drug

utilization reviews, Pharmacoepidemiology, pharmacovigilance or pharmacoeconomics;

(iv)project work shall be approved by the institutional ethics committee;

(v) student shall present at least three seminars, one in the beginning, one at middle and one at the end of the project work; and

(vi)two-page write-up of the project indicating title, objectives, methodology anticipated benefits and references shall be submitted to the Head of the Department or Head of the Institution.

5.**Reporting**― (1) Student working on the project shall submit jointly to the Head of the Department or Head of the Institution a project report of about 40-50 pages. Project report should include a certificate issued by the RGUHS recognized teacher, Head of the Department as well as by the Head of the Institution

(2)Project report shall be computer typed in double space using Times Roman font on A4 paper. The title shall be in bold with font size 18, subtitles in bold with font size 14 and the text with font size 12. The cover page of the project report shall contain details about the name of the student and the name of the authorized teacher with font size 14.

(3)Submission of the project report shall be done at least one month prior to the commencement of annual or supplementary examination.

6.**Evaluation**― The following methodology shall be adopted for evaluating the project work―

(i) Project work shall be evaluated by internal and external examiners.

(ii) Students shall be evaluated in groups for four hours (i.e., about half an hour for a group of four students).

(iii)Three seminars presented by students shall be evaluated for twenty marks each and the average of best two shall be forwarded to the university with marks of other subjects.

|  |  |
| --- | --- |
| (iv)Evaluation shall be done on the following items: | **Marks** |
| a) Write up of the seminar | (7.5) |
| b) Presentation of work | (7.5) |
| c) Communication skills | (7.5) |
| d) Question and answer skills | (7.5) |
| **Total** | (30 marks) |

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(v) Final evaluation of project work shall be done on the following items: **Marks**

|  |  |
| --- | --- |
| a) Write up of the seminar | (17.5) |
| b) Presentation of work | (17.5) |
| c) Communication skills | (17.5) |
| d) Question and answer skills | (17.5) |
| **Total** | (70 marks) |

*Explanation*.― For the purposes of differentiation in the evaluation in case of topic being the same for the group of students, the same shall be done based on item numbers b, c and d mentioned above.

**16. No. of Admissions**

Pharm. D: 30 students