Rajasthan Para-medical Council Regulations, 2014

RAJASTHAN
India

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Rule
RAJASTHAN-PARA-MEDICAL-COUNCIL-REGULATIONS-2014 of 2014

- Published on 5 December 2014
- Commenced on 5 December 2014
- [This is the version of this document from 5 December 2014.]
- [Note: The original publication document is not available and this content could not be verified.]

Rajasthan Para-medical Council Regulations, 2014Published vide Notification No. G.S.R. 43, dated 5.12.2014G.S.R. 43. - In exercise of the powers conferred by sub-section (3) of section 42 of the Rajasthan Para-medical Council Act, 2008 (Act No. 25 of 2008), the Rajasthan Para-medical Council, with the approval of the State Government hereby makes the following regulations, namely: -

Part I – Preliminary

1. Short title and commencement.

(1)These regulations may be called the Rajasthan Para-medical Council Regulations, 2014.(2)They shall come into force with immediate effect.

2. Definitions.

(1)In these regulations unless the context otherwise requires, -(a)'Act' means the Rajasthan Para-medical Council Act, 2008 (Act No. 25 of 2008);(b)'Form' means form appended these regulations;(c)'Member' means Member of the Rajasthan Para-medical Council elected or nominated under section 4 of the Act;(d)'President' means the President of the Rajasthan Paramedical Council;(e)'Registrar' means the.Registrar of the Rajasthan Para-medical Council appointed under section 15 of the Act;(f)'Vice President' means the Vice President of the Rajasthan Para-medical Council; and(g)'Schedule' means schedule appended to, these regulations.(2)Words and expressions used but not defined in these regulations but defined in the Act or rules made there under shall have the same meaning as assigned to them in the Act or rules, as the case may be.

3. Office of the Council.

- The Office of the Council shall be situated in Jaipur.

Part II – Time and place of, and preparation of business for meetings of the Council

4. Time and Place of meetings of the Council.

(1)The meetings of the Council shall ordinarily be held at Jaipur on such dates as may be fixed by the Council:Provided that the President may call special meeting at any time after giving three days notice -(a)to deal with any urgent matter requiring the attention of the Council;(b)on a requisition signed by not less than one third of the effective members of the Council for a purpose which is within the scope of the Council's functions.Provided further that meetings of the Council may be held at any other place as may be decided by the Council.(2)The first meeting of the Council, not being a special meeting, held in any financial year shall be the annual meeting of the Council for that Year.(3)The President may, at any time, adjourn any meeting to any future day or to any hour of the same day.(4)Whenever a meeting is adjourned to a future day, the Registrar shall, if possible, send notice of the adjournment to every member, who was not present at such meeting.(5)When a meeting has been adjourned to a future day the President may change such day to any other day and the Registrar shall send written notice of the change to each member.(6)At a meeting adjourned to a future day any motion standing over from the previous day shall, unless the President otherwise directs, takes precedence of other matter on the agenda.(7)Either at the beginning of the meeting or after the conclusion of the debate on a particular item during the meeting, the President or a member may suggest a change in the order of business on the agenda, if the Council agrees, such a change shall take place.(8)No matter which had not been on the agenda of the original meeting shall be discussed at an adjourned meeting.(9)The same quorum shall be necessary for adjourned meetings as for an ordinary meeting.

5. Agenda for special meetings.

- At a special meeting referred to in the proviso to sub-regulation (1) of regulation 4 the subject or subjects for the consideration of which the meeting has been.called shall only be discussed.

6. Notice of meetings.

(1)Notice of every meeting other than a special meeting called under the proviso to sub-regulation (1) of regulation 4, shall be dispatched by the Register to each member of the Council not less than fifteen days before the date of the meeting.(2)Notice of special meeting shall be dispatched by the Registrar to each member of the Council not less than three days before the date of the meeting.

7. Agenda paper.

(1)The Registrar shall issue with the notice of the meeting, a preliminary agenda paper showing the business to be brought before the meeting ,the terms of all motions to be moved of which notice in writing has previously reached him and the names of the movers.(2)A member, who wishes to move any motion not included in the preliminary agenda paper or an amendment to any motion so included, shall give notice to the Registrar not less than fourteen clear days before the date fixed for the meeting.(3)The Registrar shall, not less than ten clear days before the date fixed for the meeting, or in the case of a special meeting with the notice of the meeting, issue a complete agenda paper showing the business to be brought before the meeting.(4)A member who wishes to move an amendment to any motion included in the agenda paper, but not included in the preliminary agenda paper, shall eve notice thereof to the Registrar not less than three clear days before the date fixed for the meeting.(5)The Registrar shall, if time permits, cause a list of all amendments, of which notice has been given under sub-regulation (4) to be made available for the use of every member:Provided that the President may, if the Council agrees, allow a motion to be discussed at a meeting notwithstanding the fact that notice thereof was received late to admit of compliance with this regulation.

8. Admissibility of motion.

(1)The President shall disallow any motion. -(a)if the matter to which it relates is not within the scope of the Council's functions;(b)if it raises substantially the same questions as a motion or amendment which has been moVed or 'withdrawn with the leave of the Council within one year of the date of the meeting at which it is designed to be moved:Provided that such a motion may be admitted at a special meeting of the Council convened for the purpose on the requisition of not less than one-third of the members of the Council.Provided further that nothing in these regulations shall operate to prohibit the further discussion on any matter referred to the Council by the State Government in exercise of any of their functions under the Act.(c)unless it is clearly and precisely expressed and raises substantially one definite issue; and(d)if it contains arguments, inferences, ironical expressions, imputations or defamatory statements:Provided that if a motion can be rendered admissible by amendment, the President may, in lieu of disallowing the motion, admits it in amended form.(2)When the President disallows or amends a motion, the Registrar shall inform the members who gave notice of the motion, about the order of disallowance or, as the case may be, of the form in which the motion has been admitted.

Part III – Conduct of business at meetings of Council

9. Presiding officer.

(1)Every meeting of the Council shall be presided over by the President, or if he is absent, by the Vice-President, or if both the President and the Vice-President are absent, by a Chairman to be elected by the members present from among themselves.(2)All references in this 'part to the President shall be read as referring to the person, for the tune being, presiding over a meeting.

10. Quorum.

- The quorum for a meeting of the Council shall be one third of the effective membership of the Council on the date of such meeting.

11. Adjournment for want of quorum.

- If, at the time appointed for a meeting a quorum is not present, the meeting shall not commence until a quorum is present, and if a quorum is not present on the expiration of twenty minutes from the time decided for the meeting or during the course of any meeting, the meeting shall stand adjourned to such future time and date as the President may direct.

12. Conduct of business.

(1)Every matter raised by a member shall be determined on a motion moved by a member and put to the Council by the President.(2)Votes shall be taken by show of hands or by division or by ballot, as the President may direct:Provided that votes shall be taken by a ballot if three members so desire and ask for it.Provided further that if voting has been by a show of hands a division shall be taken if a member asks for it.(3)The President shall determine the method of taking votes by division.(4)The result of the votes shall be announced by the President and shall not be challenged.(5)In the event of an equality of votes the President shall have a second or a casting vote.

13. Motions.

(1)Every motion or amendment shall be seconded and if not seconded shall deemed to have been withdrawn.(2)When a motion has been seconded, it shall be stated from the Chair.(3)When a motion has been thus stated, it may be discussed as a question to be resolved either in the affirmative or in the negative or any member may, subject to regulations 14 and 15, move an amendment to the motion:Provided that President shall not allow an amendment to be moved which if it had been a substantive motion and would have been in-admissible under regulations 5.

14. Scope of amendments.

(1)An amendment shall be relevant to, and within the scope of, motion to which it is proposed.(2)An amendment may not be moved which has merely the effect of a negative vote.(3)The President may refuse to put an amendment which in his opinion is frivolous or not relevant to the motion.

15. Form of amendments.

- A motion may be amended by, -(i)the omission, insertion or addition of words; or(ii)the substitution of words for any of the original words.

16. Identical motion.

- When motions identical in purport stand in the names of two or more members, the President shall decide whose motion shall be moved and the other motion or motions shall thereupon be deemed to be withdrawn.

17. Debate.

(1)When a motion or amendment is under debate, no proposal with references thereto shall be made other than, -(a)an amendment of the motion or of the amendment, as the case may be, as proposed in regulation 13;(b)a motion for the adjournment of the debate on the motion or amendment either to a specified date and hour or sine die;(c)a motion for the closure, namely a motion that the question be now put; and(d)a motion that the Council instead of proceeding to deal with the motion do pass to the next item on the programme of business.(2)No motion or amendment shall be moved so as to interrupt a speech:Provided that no motion of the nature referred.to in clauses (b), (c) and (d) shall be moved or seconded by a member who has already spoken to the question then before the meeting:Provided further that a motion referred to in clauses(c) and (d) above shall be moved without any speech.(3)It shall be the discretion of the President to put or refuse to put to the Council a proposal of the nature referred to in clause (b) of sub-regulation (1).(4)Unless the President is of opinion that a motion for closure is an abuse of the right of reasonable debate. he shall forthwith put a motion that the question be now put and if that motion is carried that substantive motion of amendment under debate shall be forthwith:Provided that the President may allow the mover of the substantive motion to exercise his right of reply before the substantive motion under debate is put.(5)Subject to the provisions that it shall not interrupt a speech, a proposal to adjourn the meeting to a specified date and hour may .be made at any time, but it shall be in the discretion of, the President to put or refuse to put such a proposal to the Council.

18. Withdrawal of motion.

- A motion or any amendment which has been moved and seconded shall not be withdrawn save with the leave of the Council which shall not be deemed to be granted, if any member dissents from the granting of leave.

19. Discussion by members.

(1)When a motion has been moved and seconded, members either than the mover and the seconder may speak on the motion in such order as the President may direct:Provided that the seconder of a motion or of an amendment may, with the permission of the President, confine himself /herself to seconding the motion or amendment, as the case may be, and speak thereon at any subsequent stage of the debate.(2)During the meeting, the President may, at any time, make any objections or suggestions or give information to elucidate any point to help the members in the discussion.(3)A member desiring to make any observations on the matter before the Council shall speak from his/her place, shall rise when he/she speaks, and shall address the President.(4)If at any time the

President rises, any member speaking shall immediately resume his/her seat.(5)No member shall be heard except upon the business before the Council.(6)When an amendment to any motion is moved and seconded or when two or more such amendments are moved and seconded, the President shall, before taking the sense of the Council thereon, state or read to the Council the terms or the Original motion and of the amendment or amendments proposed.(7)An amendment to a motion shall be put to the vote first.(8)If there be more than one amendment to a motion, the President shall decide in what order they shall be taken.(9)When any motion involving several points has been discussed, it shall be in the discretion of the President to divide the motion and put each or any point separately to the vote, as he may think fit.(10)The President shall decide all points of order which may arise, and his decision shall be final.(11)If any question arises with reference to procedure in respect of a matter for which these regulations make no provisions, the President shall decide the same and his decision shall be final.(12)No person except members of the Council, Registrar and Council staff required for arrangements, will be allowed to remain in the meeting room. The President at any time may hold the meetings in camera.

20. Right of reply of the mover.

(1)The mover of an original motion, and if permitted by the President, the Mover of any amendment, shall be entitled to a right of final reply and no other member shall speak more than once to any debate except with the permission of the President, for the purpose of making a personal explanation or of putting a question to the member then addressing the Council:Provided that any member may at any stage of the debate may rise to a point of order, but no speech shall be allowed on that point.Provided further that a member who has spoken on a motion may speak again on an amendment subsequently moved to the motion:(2)No member shall, save with the permission of the President, speak for more than five minutes:Provided that the mover of a motion when moving the motion may speak for ten minutes.(3)A speech shall be strictly confined to the subject matter of the motion or amendment, on which it is made.(4)Any motion or amendment standing in the name of a member who is absent from the meeting or unwilling to move it may be brought forward by another member with the permission of the President.

Part IV – Minutes of the Meeting

21. Proceedings to be preserved.

- The proceedings of the meeting of the Council shall be preserved in the form of printed or cyclostyled minutes which shall be authenticated, after confirmation, by the signature of the President.

22. Circulation of minutes.

- A copy of the minutes of each meeting shall be submitted to the President within ten days of the meeting and attested by him and they shall then be sent to each member within thirty days of the meeting. The minutes may be sent by email also.

23. Contents of minutes.

- The minutes of each meeting shall contain such motions and amendments as have been moved and adopted. or negatived, with the names of the mover and the seconder, but without any comments and without any record of observations made by any member at the meeting.

24. Objection to minutes, etc.

- If any objection regarding the correctness of the minutes is received within thirty days of the dispatch of the minutes by the Registrar such objection together with the minutes as recorded and attested shall be put before the next meeting of the Council for confirmation. At this meeting no question shall be raised expect as to the correctness of the records of the meeting:Provided that if no objection regarding a decision taken by the Council at a meeting is received within thirty days of the dispatch by the Registrar of the minutes of that particular meeting such decision may , if expedient, be put into effect before the confirmation of the minutes at the next meeting.Provided further that the President may direct that action be taken on a decision of the Council before the expiry of the period thirty days mentioned above.

25. Circulation of final minutes.

- The minutes of the Council shall, as soon as is practicable, after their confirmation, be made up in sheets and consecutively paged for insertion in a volume, .which shall be permanently preserved. A copy of such volumes shall be circulated to each member of the Council.

Part V – Powers and Duties of Registrar

26. Registrar.

- The Registrar of the Council shall be an officer of State Service and shall be appointed by the State Government. He shall hold office at the pleasure of the State Government.

27. Powers and duties of Registrar.

(1)The Registrar shall exercise in respect of the office of the Council, such powers as are exercised by the "Head of Office" under the Government of Rajasthan.(2)The Registrar shall generally perform such duties as under: -(i)She/he shall be responsible for the safety of the property of the Council and the control and management of the office, accounts and correspondence, and shall see, that the office staff attend punctually, and generally fulfill all such duties as may be required of him/her by the Council for the purpose of the Act.(ii)She/he shall attend and take notes of the proceedings of meeting of the Council.(iii)She/he shall keep and maintain the registers of Para Medical professionals under section 20 of the act.(iv)She/he shall prepare budget for the next ensuing 'financial year and it will be laid before the Council.(v)She/he perform such other functions as may be assigned by the Council.(3)The Registrar shall put a note of decent on the decision taken by the

Council and send it to the State Government, if he feels that the decision taken by the Council is contrary to the financial rules and provisions of the Act and any prevailing law, and State Government shall take a decision on it.

Part VI – Committees

28. Committees.

(1)The Council may, at any time, on the adoption of a motion to this effect, appoint a committee consisting of any member of its members or resolve itself into a committee for the consideration of any business.(2)A member may move a motion that a committee of the Council be appointed or that the Council do resolve itself into a committee.(3)A motion for the appointment of a committee shall define the functions of the committee and the number of members to be appointed.(4)Any member may, without notice, move an amendment to such a motion proposing that the functions or the number of members of the committee be enlarged or reduced.(5)If a motion for the appointment of a committee is adopted the Council shall appoint members to this committee and decide the scope of business of the committee.(6)If the number of member proposed as members of the committee, does not exceed the total number of members to form the committee, the members so proposed shall be appointed as members of the committee. If the number of member so proposed exceeds the total number of members to form the committee, ballot shall be held and the requisite number of member who obtain the largest number of votes shall be appointed.(7)The meetings of committee shall ordinarily be held at Jaipur.

29. Quorum.

- The quorum for the committee shall be one third of the total number of members of the committee.

30. Chairman, etc, of committees.

- If committee consists of the all the members of the Council, the President of the Council shall be the Chairman of the committee and in all other cases, the Chairman of the committee shall be appointed by the Council at the time of appointment of committee.

31. Report of the committee.

- Where the Council do resolve itself into a committee, resolution passed by the such committee shall be prepared by the Registrar and signed by the President and Shall have no effect unless confirmed by the Council at a meeting and in other cases resolution passed by a committee, report shall be prepared by the Chairman of the committee and signed by him and other members of the committee. The registrar shall put it up before the Council and the Council shall take a decision on it in the next meeting.

Part VII – Examination

32. Examination.

- The Council shall conduct examinations of diploma courses only. The examination of degree and post graduation courses shall be conducted by Rajasthan University of Health Science. The examination of first batch of diploma courses shall also be conducted by the Rajasthan University of Health sciences and then examination of subsequent batches shall be conducted by the Council.

33. Time of examination.

(1)The date of all examinations shall be fixed by the Council every year and shall be published in the papers and notice board of the Council and institutions running course. The Council shall not be held responsible in case if any student remains uninformed.(2)The Council shall conduct two examinations in a year i.e. annual and supplementary examination.

34. Appointment of Examiners.

- The Registrar shall appoint examiners for paper setting, practical examination and answer sheet evaluation from time to time, from among the panel of examiners approved by the examination committee.

35. Conduct of Examinations.

(1)The Council shall appoint observer for the theory and practical examinations and shall issue such instructions, as may be necessary for the smooth conduct of the theory and practical examinations.(2)Copies of question papers shall be printed or cyclostyled at such time as may be determined in each case by the Registrar.(3)The Registrar of the Council shall send examination material before the commencement of examinations to the Superintendent of each examination centre.(4)The Registrar shall issue such general instructions, approved in this behalf by the Council, for the guidance of examiners as considered necessary for the proper discharge of their duties and shall prescribe suitable forms for the recording of the marks obtaining by the, examinees.(5)Invigilators at examination centres of the Council shall be appointed by the Superintendent of examination centre with the consent of the council.(6)The Registrar shall appoint a Superintendent for each examination centre.(7)Such other staff, which may be required for the conduct of examination, shall be appointed by the Centre Superintendent and a copy of such appointment order shall be sent to Registrar.

36. Preparation of Results.

(1)An examination committee, consisting of such number as may be approved for the purpose by the Council, shall be appointed from amongst the staff to prepare the result of the examinations for publication.(2)Any attempt made by or on behalf of candidate to secure preferential treatment in

the matter of his or her examination, shall disqualify the candidate.

37. Fixation of Examination Centres.

(1)All Centres for examinations of the Council shall be fixed by the Council each year according to convenience and suitability. Unwanted correspondence in this regard shall not be entertained.(2)The examinations of the Council shall be held at such centres only as are fixed by the Council for the purpose.

38. Question papers and conduct of examination.

(1)Question papers of examination shall be set in English and Hindi and candidates shall be permitted to answer their question in the language of their choice as stated in the application for admissions to the relevant examination.(2)Theory papers in sealed cover shall be sent to the respective examination centres well in time but if for any reason these are not received at any examination centre in time, the Superintendent of such centres shall bring this fact to the notice of the Registrar.(3)All Question papers shall be opened only at the stipulated time and date of the respective examinations, in presence of three responsible persons of the area and the Superintendent of the Centre and two invigilators and one student appearing in the examination shall sign the envelope containing these Question papers, mentioning the date and time the envelope was opened.(4)The answer books shall be collected and enclosed in a cloth cover for the purpose of dispatch to the Registrar and each package shall be duly sealed by the brass seal of the Council and signed by the Superintendent of the Centre and invigilator ,or invigilators, in the presence of each other, immediately after the examination is over.(5)Every Superintendent of an examination centre shall have to arrange a hall with tables chairs, etc. for the written test and all essential equipments which may be needed for the practical examination and the expenditure on the above shall be borne by the individual centre concerned.(6)The authorities of the Council may appoint an Inspector who shall be authorized to inspect any examination centre at any time and to submit an inspection report. Such Inspector shall receive the fullest co-operation of the Superintendent of the Examinations Centre.(7)The responsibility for the successful holding of examinations at all centres shall be that of Superintendent of the examination centres.(8)If in any case the Superintendent of examination centre acts irresponsibility in the opinion of the authorities of the Council, suitable action shall be taken against such Superintendent and the decision of the Council in this respect shall be final and binding on the Superintendent concerned.(9)All complaints regarding the holding of examinations in respect of examination centres shall be made to the Registrar within fifteen days of the commencement of the examination. Each complaint must bear the signature and full address of the complainant. Only those complaints shalt be entertained which are considered justified by the Council, whose decision in this respect shall be final and binding. No anonymous complaint shall be entertained.(10)All Superintendents of examination centre, paper setters, invigilators, answer sheet evaluator, Kactical examiner and other staff deployed for conduct of examination shall be paid remuneration decided by the Council. All bills in connection with T.A. D.A. claims etc. shall be submitted within forty days of the completion of the examination. No bills submitted thereafter shall be entertained. No correspondence in this respect shall be entertained.(11)Normally change of centre is not permitted. In exceptional circumstances the

candidate shall be allowed to change the centre, if intimation in this respect reaches the office of Registrar ten days prior to the commencement of the examination.(12)Where the authorities of the Council have reasons to believe that foul and unfair means have been adopted in the course of conduct of the examination, the examination held at such centre is liable to be cancelled in respect of that examination centre. The decision of the Council in this regard shall be final and binding on all concerned.(13)If it is found that a candidate/ candidates/ has/ have adopted unfair means, such candidate/ candidates is/ are liable to be expelled from the examination hall and he/ she /they may be further debarred from appearing for the examinations of the Council for a specific period as may be determined by the Council. The decision of the Council in this respect shall be final and binding on such candidate/ candidates. Rectified result of any candidate received from the appointed examiner after one month from the declaration of the result shall not be entertained under any circumstances whatsoever.(14)Where the Division of candidate falls short by one mark in the aggregate, he/ she shall be awarded one grace mark provided such candidate passes both in theory and practical examination separately without looking into consideration award of any grace mark.

39. Cancellation of Certificate.

(1)If at any time it is discovered that a candidate has obtained diploma/ certificate wrongly to which he/ she was not entitled by virtue of his/ her result, the Council shall cancel his/ her certificate.(2)If two certificates have been issued to a candidate inadvertently of different division of the same class, subject and session, the Registrar of the Council shall cancel incorrect certificate.

40. Disposal of examination material.

- The examination answer books and details regarding marks obtained by the examinees, except the Examination Register, shall be destroyed after expiry of two years of the declaration of the result.

Part VIII – Courses and syllabus

41. [Courses and Syllabus. [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).]

(1)The Council may allow the recognized institutions to run the courses specified in table given below. The Council may include more courses with the prior permission of the State Government.]

S.No.	Name of Course	Duration	Eligibility
1.	Diploma in Medical Laboratory Technology	2 Years	10 + 2 (Science subject)
2.	Diploma in Radiation Technology	2 Years	10+2 (Science subject)
3.	Diploma in Dental Mechanic Technology	2 Years	10+2 (Science subject)
4.	Diploma in Dental Hygiene Technology	2 Years	10+2 (Science subject)
5.	Diploma in Operation Theater Technology	2 Years	10+2 (Science subject)
6.	Diploma in Dialysis Technology	2 Years	10+2 (Science subject)

7.	Diploma in Orthopedic Technology	2 Years	10+2 (Science subject)
8.	Diploma in ECG Technology	2 Years	10+2 (Science subject)
9.	Diploma in Blood Bank Technology	2 Years	10+2 (Science subject)
10.	Diploma in Endoscopy Technology	2 Years	10+2 (Science subject)
11.	Diploma in EEG Technology	2 Years	10+2 (Science subject)
12.	Diploma in Cath Lab Technology	2 Years	10+2 (Science subject)
13.	Diploma in Emergency and Trauma Care Technology	2 Years	10+2 (Science subject)
14.	Diploma in Opthalmic Technology	2 Years	10+2 (Science subject)
15.	Diploma in Perfusion Technology	2 Years	10+2 (Science subject)

(2)The syllabus for the Diploma Courses mentioned in sub-regulation (1) above, shall be as specified in Schedule-1 to Schedule-15.(3)The Council may, at any time, amend or modify syllabus of any course. Such amended or modified syllabus shall be effective from the next session of the course.

Part IX – Registration

42. Eligibility for registration.

- The following persons shall be eligible for registration, -(i)who has obtained certificate of a Para-medical course from any Government body or private body permitted by the Government for the purpose who has run the course and awarded certificate before the commencement of these regulations.(ii)who has passed the Para-medical course from any institution recognized by the Rajasthan Para-medical Council.(iii)who has passed the Para-medical course from any institution/ Government body, outside the territories of Rajasthan, recognized for the purpose by the concerned State Government or Central Government.(iv)who has paSsed the Para-medical course from any institution, outside the territories of India, recognized for the purpose by the Government of the country concerned and verified by Government of India.

43. Registration.

- Every person who is eligible for registration at the time of commencement of these regulations shall apply for registration within three months of the commencement of these regulations and the person who becomes eligible for registration after commencement of these regulations shall apply for registration within thirty days from the date on which he became eligible for registration.

44. Entry of new titles and qualification.

- If any person after registration obtains any title or qualification other than the title or qualification in respect of which he/she has been registered, shall get registered such title or qualification on payment of fees as specified in [Schedule-16] [Substituted 'Schedule-21' by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).].

45. Application for registration.

(1)Every application for registration under these regulations shall be in the Form-1 and shall be accompanied by such fee and late fee, if any, as specified in [Schedule-16] [Substituted 'Schedule-21' by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).].(2)A separate register of Para-medical professional for each subject shall be maintained in the office of the Council in Form-2. The form of the register may be modified by the resolution passed by the Council.(3)An application for registration shall be addressed to the Registrar and if the Registrar is satisfied that the applicant is entitled to have his name entered in the register, he shall enter thereon the name of the applicant and issue to him a certificate of registration in Form-3. The certificate of registration shall be issued with seal and signature of the Registrar. The Registration shall be valid for a period of five years.(4)If the Registrar is of the opinion that applicant is not eligible for registration, he shall reject the application filed by the applicant.

46. Appeal.

- Appeal under the Act shall be filed by the aggrieved person on plain paper stating therein full particulars of the appellant and brief description of grounds of appeal and shall be accompanied by copy of the impugned order.

47. Renewal of Registration.

(1)Certificate of registration may be renewed on an application filed by the applicant on plain paper along with original certificate of registration and shall be accompanied by such fee as specified in [Schedule-16] [Substituted 'Schedule-21' by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).]. The application for renewal shall be made three months before the expiry of period of registration.(2)Where the renewal is not made three months before the expiry of period of registration, the Registrar shall remove the name of the defaulter from the register:Provided that the name, so removed, may be restored on payment of the renewal fee, together with such fine, as may be decided by the Council, from time to time.(3)On payment of the renewal fee and the fine, if any, the Registrar shall make an entry of renewal on the Certificate of Registration.

48. Removal from the Register.

(1)Subject to the provisions of the Act, where the Registrar is satisfied after giving a reasonable opportunity of being heard and after making such further enquiry, as he may think fit, he may order that the name of any person shall be removed from the register if, -(a)the person dies;(b)his name has been entered in the register by error,, or on account of misrepresentation or suppression of any material fact; or(c)he has been convicted of any offence under this Act or has been guilty of the infamous conduct in the profession which, in the opinion of the Registrar, render him unfit to be on the rolls of the register.(2)The Registrar may direct that any person whose name is ordered to be removed from a register shall be ineligible for registration under this Act either permanently or for such period as may be specified.(3)A person aggrieved by an order may, within thirty days from the

date of order, file an appeal to the Council and the decision of the Council thereon shall be final.(4)A person whose name has been removed from the register under this regulation shall forthwith surrender his Certificate of Registration to the Registrar.

Part X – Code of Ethics of Para-medical Professionals

49. Code of Ethics.

- A Registered Para-medical Professional shall, -(i)be dedicated to provide competent medical care, with compassion and respect for human dignity and rights;(ii)uphold the standards of professionalism, be honest in all professional interactions;(iii)respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the interests of patient;(iv)respect the rights of patients, colleagues and other health professional, and shall safeguard patient confidence and privacy within the constraints of the law;(v)continue to study, apply, and advance scientific knowledge, maintain a commitment to medical education, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated;(vi)recognize the responsibility to participate in activities contributing to the improvement of the community and the betterment of public health;(vii)while caring for a patient, regard responsibility to the patient as paramount; and(viii)support access to medical care of all people.

Part XI – Staff, Salaries, Allowances and Perks

50. Staff, Salaries, Allowances and Perks.

(1)The Council shall appoint such number of officer and servants as may be determined by it, with the approval of the State Government.(2)The salary and other conditions of service of the officers and servants of the Council shall be such as may be determined by it With the prior approval of the State Government.(3)The qualifications of the persons appointed in the Council shall be such as may be determined by it with the prior approval of the State Government.

Part XII – Eligibility criteria for admission

51. Eligibility criteria for admission.

- [(1) The minimum qualification for admission to the Para-medical Diploma Courses shall be Senior Secondary (10+2) Science (including any sub category of science subject) with minimum 45 percent marks in aggregate. Minimum aggregate marks for the Candidates belonging to Scheduled Castes, Scheduled Tribes, Backward Class or Special Backward Class shall be 40 percent. Allotment of students shall be made on the basis of marks obtained in 10+2 examination. Preference in admission shall be given to bonafide residents of Rajasthan.] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).](2)The minimum age for admission shall be 17

years on or before 31st December of the year in which admission is sought.

Part XV – Recognition of Institutions

52. Procedure for recognition.

- [(1) Every Para-medical institutions seeking recognition must have infrastructure facilities as specified in Regulation 53.] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).](2)Every Para-medical institution who is eligible for recognition at the time of commencement of these regulations shall apply for recognition within three months of the commencement of these regulations and the organization who is willing to set up Paramedical institution after commencement of these regulations shall apply for recognition to the Registrar by 31st July every year. The application for recognition shall be made to the Registrar in. Form-4 and shall be accompanied by such fees as specified in [Schedule-16] [Substituted 'Schedule-21' by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).].(3)On receipt of an application in Form-4, application shall be scrutinized by the Council and if found complete, the Council shall organize inspection of the institute.(4)A panel of Inspectors shall be prepared by the Council who shall inspect the institutions. A member of the Council shall not be eligible to be included in the panel of Inspectors.(5)The Registrar shall appoint two inspectors for the inspection, from the panel of Inspectors, at random. The Inspectors, so appointed, shall submit inspection report to the Registrar in Form-5 separately within 15 days of the appointment. If any Inspector fails to submit his inspection report within time specified above, the Registrar may appoint another Inspector.(6)If Registrar is not satisfied with the inspection report or the institution has any disagreement with the inspection report, the Registrar may appoint third Inspector and such Inspector shall submit his inspection report within 15 days of his appointment. The Registrar may also inspect himself. The inspection report of Registrar or third Inspector shall be final. If third inspection is done on the request of the institution, the institution will have to pay fees specified in [Schedule-16] [Substituted 'Schedule-21' by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).].(7)The Council after considering inspection report/reports, may either issue letter of recognition or reject the application within 90 days from the last date fixed for receipt of the application under sub-regulation (2) above.(8)Any institution who has continuously run any Para-medical course successfully for five years and fulfills all the standards fixed by the Council and if there is no complaint against that institution, permanent recognition may be granted by the Council to such institution on the payment of the fees decided by the Council.

53. [Infrastructure in Institutions. [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).]

(1)For recognition of a Para-medical institution under these regulations, the institute must have the following infrastructure facilities, namely: -A. Physical Facility: -(i)Building. - Institute shall have preferably its own building. Whereas to start institute with a rented building, permission may be granted for a period of maximum 5 years on submission of registered rent agreement. But for permanent recognition own building shall be essential. Standard minimum requirement for one

course with 25 students shall be as under: -

S.No.	Description	Area
1.	Principal Office (1)	200 sq. ft
2.	Office Facilities	300 sq. ft
3.	Number of Class Rooms (2)	450 sq. ft each
4.	Number of Labs (1)	450 sq. ft each
5.	Library (1)	700 sq. ft
6.	Common facilities	450 sq. ft• Toilet for girls in minimum 50 sq.ft.• Toilet for boys in minimum 50 sq.ft.• Common room for girls in 300 sq.ft.
7.	Transportation Facilities	Sufficient number of vehicles required as per sanctioned seats
8.	Boys Girls Hostel	Desirable
9.	Sports Facilities	Desirable

(ii)Dedicated space of 4000 Sq. ft. area per Diploma course for 25 seats is essential.(iii)If sanctioned seats are above 25 (up to 50), -(a)Number of class room required will be two but the area of each class room should be minimum 600 Sq. feat.(b)Number of Lab required will be one only but the area of Lab should be minimum 600 Sq. feat.(iv)If sanctioned seats are above 50, the number of class rooms and Labs will increase proportionately.B. Library Facilities:(i)Two State level Hindi and one State level English newspaper and Journals related to course are essential.(ii)Reference and text books in sufficient number is requiredC. Teaching Faculty:

S.No.	Designation	Qualification	Full Time/Part time visiting
1.	Principal	MD/MS/MBBS or MSC with 5 Years experience as faculty	Full Time/Part time Vesting
2.	Assistant Professor/ Lecturer	MD/MS/MBBS or MSC with Para Medical subject or BSC in Para Medical Subject with 4 year experience	Full time/Part time Vesting
3.	Technician	Qualified in the speciality	Full Time

Note. - (i) Students Teachers Ratio should be - 10:1(ii)Principal and technicians will be counted in teaching faculty(iii)Minimum required faculty for each course will be 03D. Clinical Facility:(i)The Institute should have own Hospital/ Lab.(ii)The Hospital/Lab should have Pollution Control Board certificate. Clinical Establishment Act registration and other essential licenses required from various departments under prevalent Act, Rules and Regulations.(iii)Required clinical facilities are as under: -

	Name of course	Required Clinical Facilities
1.	Diploma in Medical Laboratory Technology	Applicants own labwith minimum : -50 Pathological Examinations conducted per day50 Biochemistry Examinations conducted per

		day50 MicrobiologyExaminations conducted per day
2.	Diploma in Radiation Technology	Applicants own diagnostic centre in whichminimum 50 x-ray per day are conducted.
3.	Diploma in Dental Mechanic Technology	Applicants own centre where 50 patients aretreated daily
4.	Diploma in Dental Hygiene Technology	Applicants own centre where 50 patients aretreated daily
5.	Diploma in Operation Theater Technology	Applicants own minimum 50 Bed Hospital withfacility of General Surgery
6.	Diploma in Dialysis Technology	Applicants own minimum 50 Bed Hospital withNafrogoly Department
7.	Diploma in Orthopedic Technology	Applicants own minimum 50 Bed Hospital withOrthopedic Department
8.	Diploma in ECG Technology	Applicants own minimum 50 Bed Hospital withGeneral Medicine Department
9.	Diploma in Blood Bank Technology	Applicants own Blood Bank
10.	Diploma in Endoscopy Technology	Applicants own minimum 50 Bed Hospital withGastroenterology Department
11.	Diploma in EEG Technology	Applicants own minimum 50 Bed Hospital withNeurology Department
12.	Diploma in Cath Lab Technology	Applicants own minimum 50 Bed Hospital withCardiology Department
13.	Diploma in Emergency and Trauma Care Technology	Applications own minimum 50 Bed Hospital withTrauma Department
14.	Diploma in Opthalmic Technology	Applicants own minimum 50 Bed Hospital with EyeDepartment
15.	Diploma in Perfusion Technology	Applicants own minimum 50 Bed Hospital with C.T.Surgery Facility

(iv)Hospital/Lab should have modern machine and equipments.(v)Distance of Institute from Hospital/Lab shall be, -maximum 25 Km, from city with population above 10 lakh, and maximum 10 Km. from city with population up to 10 Lakh.E. Equipments and Instruments. - (1) Equipments and instruments required for various Diploma courses shall be as specified in Schedule-17 to Schedule-31.(2)Infrastructure facilities should be made available at the time of inspection for physical verification.]

Part XVI – Miscellaneous

54. [Fees. [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).]

- The fees payable in respect of all matters and proceedings provided for in these regulations shall be such as specified in Schedule-16.]

55. Remuneration for inspection.

- The Inspector appointed for inspection of the institutions shall be paid actual travelling expenses up to the limit of third AC plus Rs. 1000/- as honorarium per inspection.

56. Accounts.

- The Accounts Officer/ Assistant Account Officer shall be responsible for proper maintenance of accounts and the Cash Book. He shall ensure day-to-day accounting of all moneys received and spent by the Council are entered in Cash Book.

Form-1[See regulation 45 (1)]ToThe registerRajasthan Para Medical CouncilJaipur|	Paste a PassportSize applicantattested by aGazetted officeror Head of theinstitution Studiedlast

Sub. - Application for Registration as Para Medical Personnel

1. Name of the Applicant (In block letters):

2. Father's Name (in block letters):

3. Mother's Name (in block letters):

4. Date of Birth in figures (in Christian era):

5. Date of Birth in words:

6. Address to which communications are to be sent:

Phone No. with STD code:Mobile No.:Email:Fax:

7. Permanent Address:

8. Name of State according Bona-fide residence certificate:

9. Nationality:

10. Sex:

11. Official Address of the applicant:

12. Educational qualification: -

S. No.	Name of the course	Name Address of the Institute/College	Period of study	Year of Passing	Percentage of marks	Name of University/Board under which thecourse was conducted
1						
2						
3						
4						
5						
6						

13. Experience: -

S.No.	Name of Hospital/Institute/Collage	Period of work	Total experience	Name address of the Head of institute withphone/mob. No.
1				
2				
3				
4				

14. State the category to which the registration is applied (See the instruction)

15. State the medium of instruction of training

16. Details of remittance of registration fee (DD Number and Date/transaction number and ID if paid through online) :

Signature of applicant with nameDeclarationI ..... (Name) hereby declare that the above statement are true to the best of my knowledge and belief and that I am free from the disqualification mentioned in the Rajasthan Para-medical Council Act, 2008, rules and regulations. I promise in the event of being registered and in consideration thereof to be bound by and to conform in all respects to the rules, regulation etc. framed by Council from time to time in force.Signature of applicant with namePlace : Date :Instructions(1)Applicant shall enclose a D.D. of Rs. 2000/- (for each Course) drawn in favour of Registrar, Rajasthan Para Medical Council, payable

at Jaipur or transaction number and ID if paid through online, as registration fee. Applicant registered with other State Councils will pay 3000/- as registration fee and applicant qualified from other countries will pay Rs. 10000/- as registration fee. A fees of Rs. 1500/- will be payable for registration of extra qualification.(2)Registration fee will not be refunded for any reason.(3)Three recent and identical passport size colour photographs are to be used. One should be pasted on the space provided on the application form and that should be attested by a gazetted officer/Head of the Institution where the candidate is studying/has studied for the qualifying examination/or Head of Institution where he is working. The other copies of photograph (unattested) should be enclosed with the application and his/her name and date of birth should be printed/written on its bottom.(4)The following documents should be enclosed with the duly filled application form in the order below.(i)Demand draft in favour of Registrar, Rajasthan Para Medical council, Jaipur or transaction number and ID if paid through online.(ii)Copy of the letter of the recognition of the institution/ college/ university from any state Government or central Government for the purpose.(iii)Attested copy of Secondary School Marks Sheet to prove the date of birth.(iv)Attested copy of 10+2 mark list (both sides).(v)Attested copy of qualifying examination (both sides) for which registration is sought (2 copies).(vi)Attested copy of all additional qualification for which registration is sought (2 copies)(vii)Attested copy of Certificate of Bona-fide Residence.Form -2[See regulation 45 (2)]

S. No.	Date of Registration	Name of Candidate	Father's Name	Date of birth	Address	Name of Institute providing diploma/ degree	Name of University or council	Year of passing	Qualification	Renewe Up to
1	2	3	4	5	6	7	8	9	10	11

Form-3[See regulation 45 (3)]Certificate of Registration as paramedical professionalRajasthan Para-Medical CouncilCertificate of Registration

Photo ofCandidate

This is to certify that Mr./Ms./Mrs. ..... S/o,D/o,W/o trained in ..... (name of course) has been registered as a under the provisions of section 17 or section 32 of the Rajasthan Para-Medical Council Act, 2008 by the Rajasthan Para-Medical Council.Registration No. .....Date .....This certifiCate will be valid for 5 years from the date of registration.

{|

Logo of Council

| Registrar|}[Form-4] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See regulation 52 (2) (3)]ToThe RegistrarThe Rajasthan paramedical council Jaipur (Rajasthan)Subject - Application for permission to start Para Medical Course ..... (Name of the Course).Herewith we are submitting our application for permission to start ..... (name of the course). Details of information required are -

1. Name of the Institution .....

2. Name of the Chairperson/ Secretary .....

3. Name of the Society/Trust/ Company/Partnership Firm/Individual (Copy of relevant documents attested by the notary to be attached).....

4. Address of the Institution where Para medical course will run .....

District ..... State ..... Pin Code ..... Tel. No ..... Fax ..... (M) ..... E-Mail ..... website .....

5. Name of the Principal/Dean/HOD ..... Qualification ..... Reg. No. ..... Tel. No (Office) ..... Mobile No .....

6. Institution is under (Please √ mark)

1. Government
2. University
3. Society
4. Trust
5. Company
6. Partnership
7. Individual

7. Year of establishment .....

8. Separate budget allocated to Paramedical Courses (Last year audited expenditure statement enclosed).

Annexure

9. Paramedical Course applied for (Please mention names of the courses) .....

10. Number of seats applied (course wise) .....

11. Other Educational Institutions run by the management .....

12. Name of the Courses already running in the college .....

13. Physical Facilities: - Separate building with 4000 Sq. ft. area wise distribution is given below: -

1.	Land available for the said Institution(relevant documents to be enclosed)	Annexure
2.	Whether the institution has own Building.	Yes ..... No .....
3.	(i) Blue Print ofbuilding(ii) If rented then rent deed registered by sub-register for 05years should be attached.	Annexure
4.	Principal Office	Area in sq. feet
5.	Office Facilities	Area in sq. feet
6.	Number of Class Rooms Area in sq. feet	
7.	Number of Labs Area in sq. feet	
8.	Library Area in sq. feet	
9.	Common facilities in sq. feet	
10.	Transportation Facilities (as per requirement)	
11.	Boys and Girls hostel (desirable)	
12.	Sports Facilities (desirable)	

14. Library Facilities: -

S. No. Specialty Subjects No. of Books No. of Journals Amount Bills enclosed

15. Clinical Facilities: -

Name of the own Hospital/Lab	Annexure
No. of Beds distribution	Annexure
Proof of the Hospital/Lab being own Hospital/Lab	Annexure
Pollution Control Board Certificate	Annexure
Clinical Establishment Act registrationcertificate	
Distance of hospital from para medicalinstitution in KM	

16. Teaching Facilities: - Proposed names of teaching personnel (consent letters to be enclosed).

S. No	Name of teaching faculty	Designation	Qualification		Specialty	Year of Passing	Name of the Instt./University	Reg. No.	Teaching Exp.	Date of Joining
			UG	PG	Total					

Required Teaching Staff documents : -

1. Appointment letter.

2. Joining report / consent letter

3. Educational qualification Certificate.

4. Past Experience letter, Appointment letter Reliving letter.

5. ID Proof

17. List of Non- Teching Staff: -

S. No.	Name of Staff	Designation	Qualification	Board/university	Date of Joining

18. Instructional (instruments) facilities available .....(Institute must have own equipment)

19. D. D. of Rs. 30000/- in favour of Registrar, Rajasthan Paramedical Council payable at Jaipur of any nationalized bank or challan or transaction number and ID if paid through online, for recognition fee per course.

20. D.D. of Rs. 5000/- in favour of Registrar, Rajasthan Paramedical Council, payable at Jaipur of- any nationalized bank or challan or transaction number and ID if paid through online, for Application Fee.

21. Any Other information.

We request you kindly to arrange for Inspection at your earliest.Thanking YouYours faithfullyDate:Authorised Signatory With name, complete address, Mobile No. and email.List of

AnnexuresDeclaration(On 20 rupees non judicial stamp)I ..... S/o, D/o or W/o ..... declare that all the documents information submitted in this application form are true to the best of my knowledge. I understand that if any, of the information is found wrong, my application will stand cancelled. I will abide by the rules regulations in force in Rajasthan Paramedical Council and as amended from time to time.Date :Place:(Signature of the Applicant)Name of the ApplicantSeal of the Institution[Form-5] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See regulation 52 (5)]Inspection ReportToThe RegistrarRajasthan Para medical councilJaipur, RajasthanSubject. - Inspection reportReference. - Your letter number ..... Dated.....In reference to the above sighted letter I have inspected the institution and my report is as under -

1. Date of the Inspection

2. Name of the Institution

3. Name of the Chairperson/Secretary

4. Name of the society/Trust/Company

5. Complete address where para medical course will run.

6. Name of the Principal/Dean/HOD with qualification

7. Name of the course applied for and requested annual admissions.

S. No Name of the course Number of seats

8. Other courses running in the same premises

9. Physical Facilities are available as per norms (please sign in Yes or No column only): -

S. No.	Description	Area	Yes	No
1.	Principal Office (1)	200 sq. ft		
2.	Office Facilities	300 sq. ft		
3.	Number of Class Rooms (2)	450 sq. ft each		
4.	Number of Labs (1)	450 sq. ft		
5.	Library (1)	700 sq. ft		

6.	Common Facilities	450 sq. ft• Toilet for girls in minimum 50 sq.ft. • Toilet for boys in minimum 50 sq.ft. • Common room for girls in 300 sq.ft.
7.	Transportation Facilities	Sufficient number of vehicles required as persanctioned seats
8.	Boys Girls Hostel	Desirable
9.	Sports Facilities	Desirable

10. Library Facilities are available as per norms (mention Yes or No)

11. Clinical Facilities are available as per norms (please sign in Yes or No column only): -

S. No.	Particulars
1.	Name of the own Hospital/Lab
2.	Proof of the Hospital/Lab being own Hospital/Lab
3.	Beds distribution
4.	Pollution Control Board Certificate
5.	Clinical Establishment Registration
6.	Distance of Institute from Hospital/Lab in K.M.
7.	Course wise clinical facilities

Name of course	Details of clinical facilities available	facilities are as per Norms Yes/No

12. Teaching Facilities available: -

S.No.	Name of the faculty	Qualification	Teaching Experience	Date of Joining	Part time / full time

Teaching Facilities is as per Norms Yes No

13. Required Equipments as per norms are available (Right only Yes or No)(Purchase bills of the equipments should be verified by the inspector)

14. Videography of required infrastructure facility done in my presence and Video CD is enclosed.

15. Any other information (No recommendation to be given)

Signature and Name of the inspectorDate:Place:[Schedule - 1] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 41(2)]Syllabus of Diploma in Medical Laboratory TechnologyFirst YearSubject- 1. Communication skills in English.

2. Computer application.

3. Anatomy and Physiology.

4. Hematology and blood banking

5. Clinical pathology.

6. Clinical practical training.

7. MLT Instruments Practice Lab - 1.

Hospital. - Industrial training (4 Weeks) in summer vacationTheory Classes. - Monday to Friday - 1 hrs/day - Total 5hrs/weekRest of the time students do practical in their respective sections according to posting scheduleExamination Pattern Internal/ Seasonal exam - Taken on completion of course CPT-1 (MLI6)-200 MarksPractical - 200 marks, 3hrs, Practical exercises and related theory question

Exercises are -	Hb- gm%
	TLC/TRBC
	PBF - Preparation, staining
	DLC
	ESR
	Reticulocyte count
	H E staining
	MGG Staining
	Specimen mounting
	Records - Prepared by students

200. marks are distributed among the given exercises. Practicals are taken according to the provided syllabus

Time for CPT and MLT not specified for sessional examination MLT - 1 (ML 17) -100 Marks• It is Viva on instruments from different section• Viva to be taken at 2 places in board examination

Pattern -	A - Histopathology Cytology - 50 Marks B - Hematology Blood Banking - 50 Marks

Theory - Theory exam of 100 marks

Practical -

CPT - 1 (ML 16) - 400Marks (For 3 hrs) Practical exercise and related theory questions

Exercises are - Hb- gm%
TLC/TRBC
PBF - Preparation, staining
DLC
ESR
Reticulocyte count
H E staining
MGG Staining
Specimen mounting
Records - Prepared by students

400. marks are distributed among the given exercises.

MLT-1 (ML 17) - 50 Marks• It is Viva on instruments from different section• Viva to be taken at 2 placesA - Histopathology Cytology - 25 MarksB - Hematology Blood Banking - 25 MarksHospital Industrial Training• Duration - 4 weeks in summer vacation• Marks are given out of 100 at the end of trainingMarks distribution is as follow

OPD(25)	Blood Bank(25)	Record(25)	Viva(25)	Total(100)	RatingExcellent -75%Good - 60-75%Average -45-60%Poor - 45%

Ranting is grading - Done on % of total marks obtained out of - 100Second Year

Subject- 1. EntrepreneurshipProfessional management.2. EnvironmentalStudies.3. Microbiologyincluding parasitology and immunology.4. Pathology.5. Biochemistry.6. Clinical practicaltraining - II7. MLT Instruments Practice Lab - II.

Hospital/Industrial training (4 Weeks) in summer vacationTheory Classes. - Monday to Friday - lhrs/ day-Total 5hrs/weekRest of the time students do practical in their respective sections according to posting scheduleExamination Pattern. - Internal/ Sessional exam - Taken on completion of course CPT-II (ML26) -200 Marks

CPT-200	66 - Pathology67- Microbiology67 Biochemistry
MLT-100 (ML27)	34 - Pathology(it is viva on instrument sameas taken for 1st year DMLT)33 - Microbiology33 - Biochemistry

Exercises are -Histopathology -- Tissue processing block making, section cutting and routine- HE staining- Different types of special staining in histopathology- Preparation of fixatives- Preparation

of stains for sections and smears Paraffin embedding of tissues- Preparation of paraffin blocks- Honing of microtome razors- Microtomy - Preparation of sections- Frozen section techniques - Demonstration- Preparation and fixation of smears for cytology- Hematoxylin and cosin staining.- Papanicuolu's staining- Some of the special stains- Mounting museum specimen- Records keepingHematology -- Hb-gm%- TLC/TRBC- PBF - Preparation, staining- DLC- Urine examination- Bleeding and clotting time- Interpretation of clot retraction- Prothrombin time, APTT and TT- Fibrinogen degradation product (FDP)- Substitution tests for factor identification- Records - Prepared by studentsPractical examination is taken according to provided syllabus.Time for examination for internal CPT and MLT not specified.Theory examination of Pathology taken by - 100 MarksPractical

CPT-II (ML-26)-400 marks	134 - Pathology (Only practical)133 -Microbiology133 - Biochemistry

MLT-II (ML27) - Same as sessional

CPT-II (ML-27)-50 marks	16 - Pathology (Only viva on instrument)17 -Microbiology17 - Biochemistry

Hospital Industrial Training• Duration - 4 weeks in summer vacation• Marks are given out of 100 at the end of training

OPD(25)	Blood Bank(25)	Record(25)	Viva(25)	Total(100)	RatingExcellent -75%Good - 60-75%Average -45-60%Poor - 45%

• Ranting is grading - Done on % of total marks obtained out of - 100

1st. Year Syllabus

Blood Banking:- Introduction to blood banking, screening and selection of donor.- Collection and storage of blood.- Blood grouping ABO, RH and other system of grouping , subgroup A , Bombay blood group and their antibodies.- Antibodies to ABO system, Anti 'AB' and Anti 'H' antibody.- ABO Testing - slide tube test. Reverse grouping, discrepancies between cells and serum results , sources of error, rouleux formation.- RH Grouping - Slide or rapid tube test, false positive , false negative , Du system- Cross matching , reasons of cross match saline albumin , coombs and enzymes in testing- Coombs test- direct and indirect, principle procedure , sources of errors, control, interpretation and clinical application.- Organization of blood bank, preparation and uses of various components of blood.- Transfusion reactions.Hematoloev:- Introduction to clinical hematology.- Instruments and glassware's used in hematology.- Preparation of various stains., buffers and solution used in hematology.- Methods of collection of blood and anticoagulants used in hematology.- Various methods of Hb estimation.- Preparation and staining of PBF,- RBC counting , WBC counting , Absolute eosinophill count.- Platelet and Reticulocyte counting.- Morphology of normal and abnormal forms of RBC's.- Morphology of normal and abnormal forms of WBC's.- DLC- ESR- PCV, Blood indices.- Osmotic fragility test.- Haemoglobin electrophoresis, estimation of foetal Hb.- G6PD estimation.- Sickling test.- LE cell test. Test for cold agglutination.- Bone marrow examination - Different sites and needle used- Automation in hematology- Basic principles.Clinical Pathology:- Introduction to clinical pathology safety measures in lab.- Quality control - External and Internal.- Complete urine examination.- CSF examination.- Examination of other body fluids.- Semen analysis.- Norms of biomedical wastes and discarding of infected blood.

2nd. Year Syllabus

Topics:- General principles of histopathology works; collection of specimen, numbering and giving tissue bits.- Equipments used in histopathology, their merits, demerits and care to be taken- Fixatives used in histopathology - Preparation, advantages and disadvantages- Frozen section and cryostat technique staining and mounting, morbid anatomy- Decalcification - Methods, advantages and disadvantages of each method- Introduction of cytopathology, methods of collection of materials, making smears and preparations of fixatives used- Different stains used in cytology, their preparation and staining the smears- Exfoliative cytology of barr bodies (Six Chromatin) and pap staining- Histopathology techniques. Morbid anatomy tissue processing, fixation, dehydration, clearing and impregnation in paraffin.- Making of blocks and section cutting. Errors in section cutting and their correlation- HE staining including staining technique for rapid diagnosis and different types of mountants used- Preparation of different type of hematoxylin and eosin- Preparation of different types of special stains and special staining techniques- Immunohistochemical immunocytochemical staining- Histochemical and cytochemical techniques- Normal coagulation cascade- Investigation of bleeding disorders- Bleeding time and clotting time - methods and interpretation- Clot retraction time- Prothrombin Time- APTT- Thrombin time- Fibrin degradation products- Preparation of specimen for mounting- Preparation of fixations for mounting- Techniques of mounting- Organization of medical laboratory and museum and their maintenance.- Equipments used in Histopathology- Instruments of stains used in hematology- Instrument used in cytology- Lab diagnosis of Jaundice- Lab diagnosis of Diabetes Mellitus- Renal function tests[Schedule-2] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See regulation 41(2)]Syllabus of Diploma in Radiation Technology

S. No.	Subject	Distribution of time		Distribution of Marks				
Hours per week	Exam							
Th	PR	T	Th	PR	Viva-voce	Total		
RT-1	Radiological Anatomy Physiology Pathology	1	-	1	100	-	-	100
RT-2	Radiological Physics	1	-	1	100	-	-	100
RT-3	Radiography-1 (GEN)	1	-	1	100	-	-	100
RT-4	Dark Room Procedures	1	-	1	100	-	-	100
RT-5	Clinical Instrumental Skill Lab-1	-	32	32		75	25	100
RT- PRS	Sessional Assessment (PRS)	-	-	-	100	-	-	100
	Total	4	32	36				600

For Diploma II Year Radiation Technology

S. No.	Subject	Distribution of time	Distribution of Marks

Hours per week	Exam							
Th	PR	T	Th	PR	Viva-voce	Total		
RT-6	Radiography 2nd Special	1	-	1	100	-	-	100
RT-7	Basic Principles of Radiotherapy, Radiation Hazards Protection	1	-	1	100	-	-	100
RT-8	Recent Advances	1	-	1	100	-	-	100
RT-9	Patient Care Hospital Management	1	-	1	100	-	-	100
RT-10	Clinical Instrumental Practice Lab II	-	32	32		75	25	100
RT-PRS	Sessional Assessment (PRS)	-	-	-	100	-	-	100
	Total	4	32	36				600

Radiological Anatomy, Physiology Pathology RationaleThe study of anatomy physiology and pathology is essential because it will help in understanding the basic structure of the organs, their functions and changes due to various diseases affecting the organs of the human body.ContentsGross Radiological surface anatomy of human body. The Human Skeleton bones and joints, formation of bones, growth of skeleton, centers of Ossification, types of bones, type of joints, thoracic contents and general location of organs and vessels, abdominal viscera and location of the major organs, types of cells, composition and development, Cell function and tissue differentiation.

2. Anatomy, Physiology and Pathology of Body system-Genes reproductive organs, embryological development. The nature and appearance of Bacteria Common

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4. Salivary gland, pharynx and oesophagus, stomach, small intestine, large intestine [colon], liver and biliary tract, and pancreas Functions of alimentary system digestion absorption of food, metabolism, urinary tract-Kidney Ureters and bladder urethra Urinary secretion. Reproductive system male genitalia, female genitalia, mammary glands. Menstruations, pregnancy and lactation.

Nerve system and common terms used in this system Main subdivisions organs of sense. Structure and the functions of eye, ear, Surface landmarks and topography in relation to organs of the body for radiography positioning. Inflamation. Pyrexia. Ulcer, bacteria and the specific granulomatous, disorders, endocrine, nutrition and metabolism.Ref Books: 1. Foundation of Anatomy physiology -Ross Wilson

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For Diploma II Year Radiation Technology

S.No	Subject	Distribution of time		Distribution of Marks					
Hours per week	Exam								
Th	PR	T	Th	PR	Viva-voce	Sessional Assessment (PRS)	Total		
RT-6	RADIOGRAPHY 2nd Special	1	-	1	100	-	-	-	100
RT-7	Basic Principles of Radiotherapy , RadiationHazards Protection	1		1	100				100
RT-8	Recent Advances	1	-	1	100	-	-	-	100
RT-9	Patient Care Hospital Management	1	-	1	100	-	-	-	100
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Recent Advances RationaleEvery electric current is accompaniend by magnetic effects

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Image intensifiers Rapid serial changers pressure syringe x-ray tube and complete knowledge of x-ray units along with all accessories, mobile and portable x-ray units.Recent advance in imaging technology. - Knowledge of Ultra sonograhy. Color Doppler, different types of transducers.(i)CT Scan, conventional, spiral (Helical), Multi slice(ii)Magnetic resonance imaging (MRI)(iii)Spectroscopy (MRS)(iv)Computerized radiography(v)Digital Radiography(vi)DSA(vii)Picture Archiving communication system (PACS)(viii)Mammography(ix)Orthopantography(x)Positron emission Tomography (PET)(xi)Different type of cameras e.g. laser, photography etc.

2. Reference Book:

1.	Radiation Physics	Satish Bharghav
2.	The Fundamentals of X-ray and Radiation	Josaphy Selman
3.	Diagnostic Ultrasound	Rumack
4.	Computed Tomography MagneticResonance Imaging of the Whole Body	Haaga
5.	Foundation of Computing	P.K Sinha P Sinha BPB Publication

Patient Care Hospital ManagementContentsCleaning and care of enamel, stainless steel and glass instruments/cleaning ofrubber and polythene goods, care of linen, woolen blankets, mattress and other sheets, bed making, giving bedpan, urinal and removing them.Lifting of patients and first aid procedures. Transferring patients from wheel chairs, trolley or stretcher to the bed and x-ray couch and vice versa. Temperature, pulse, respiration and blood pressure, enema water and soap water enema. Explanation of hospital charts, sterilization and sterile technique of handling the sterile instruments.Injection Technique. - Intra Muscular, Intra Venous, setting up of drip, supply of oxygen, dignity of patient. Psychology of the sick. Preparation of the patient for any major investigation. Use of X-ray and radiation hazards. Preparation of the trays for special investigation and care of cancer patients. Maintaining up to date medico legal case (MLC) Radiographic record and verification of patient's marks of identity. Storage and distribution of reported films, storage of waste films and used solutions.Hospital managementRules Regulations. - Licensing registration procedure, Shop Commercial Establishment act. Municipal bye laws insurance coverage.Management Techniques. - Leadership authority responsibility , Functions of Hospital ManagementQuality Control Quality Acceptance. - Meaning importance of keeping standard. Factors responsible for deviation from standards. ISO and ISO 9000 to 9006, Total quality management.Human Relations Personality Development. - Motivating the employees, Inter personnel relations. Grievances and their handling. Staff requirement, training and monitoring.Bio

Medical Waste Management. - Environmental impact of radiation. Introduction to bio-medicinal waste. Types of bio-medical waste. Collection of biomedical waste, treatment and safe disposal of bio-medical waste

Reference Book:

1. Who - A Guide to X-Ray Department
2. Who - Manual of Radiographic Technique.
3. Radiographic for Technicians.
4. Hand Book on entrepreneurship Development O.P. Harkut.
5. Environmental Impact Assessment Mc Graw Hill,New Yark, 1977

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S. No.	Subject	Distribution of time		Distribution of Marks				
Hours per week	Exam							
Th	PR	T		Th	PR	Viva-voce	Total	
RT-1	Radiological Anatomy Physiology Pathology	1		-	1	100	-	- 100
RT-2	Radiological Physics	1		-	1	100	-	- 100
RT-3	Radiography-1 (GEN)	1		-	1	100	-	- 100
RT-4	Dark Room Procedures	1		-	1	100	-	- 100
RT-5	Clinical Instrumental Skill Lab-1	-		32	32		75	25 100
RT- PRS	Sessional Assessment (PRS)	-		-	-	100	-	- 100
	Total	4		32	36			600

For Diploma II Year Radiation Technology

S. No.	Subject	Distribution of time		Distribution of Marks		
Hours per week	Exam					
Th	PR	T		Th	PR	Total

					Viva-voce			
RT-6	Radiography 2nd Special	1	-	1	100	-	-	100
RT-7	Basic Principles of Radiotherapy, Radiation Hazards Protection	1	-	1	100	-	-	100
RT-8	Recent Advances	1	-	1	100	-	-	100
RT-9	Patient Care Hospital Management	1	-	1	100	-	-	100
RT-10	Clinical Instrumental Practice Lab II	-	32	32		75	25	100
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4.	Computed Tomography MagneticResonance Imaging of the Whole Body	Haaga
5.	Foundation of Computing P.K Sinha P Sinha	BPB Publication

Patient Care Hospital ManagementContentsCleaning and care of enamel, stainless steel and glass instruments/cleaning of rubber and polythene goods, care of linen, woolen blankets, mattress and other sheets, bed making, giving bedpan, urinal and removing them.Lifting of patients and first aid procedures. Transferring patients from wheel chairs, trolley or stretcher to the bed and x-ray couch and vice versa. Temperature, pulse, respiration and blood pressure, enema water and soap water enema. Explanation of hospital charts, sterilization and sterile technique of handing the sterile instruments.Injection Technique. - Intra Muscular, Intra Venous, setting up of drip, supply of oxygen, dignity of patient. Psychology of the sick. Preparation of the patient for air major investigation. Use of X-ray and radiation hazards. Preparation of the trays for special investigation and care of cancer patients. Maintaining up to date medico legal case (MLC) Radiographic record and verification of patient's marks of identity. Storage and distribution of reported films, storage of waste films and used solutions.Hospital ManagementRules Regulations. - Licensing registration procedure, Shop Commercial Establishment Act. Municipal bye laws insurance coverage.Management Techniques. - Leadership authority responsibility , Functions of Hospital

ManagementQuality Control Quality Acceptance. - Meaning importance of keeping standard. Factors responsible for deviation from standards. ISO and ISO 9000 to 9006, Total quality management.Human Relations Personality Development. - Motivating the employees, Inter personnel relations. Grievances and their handing. Staff requirement, training and monitoring.Bio Medical Waste Management. - Environmental impact of radiation. Introduction to bio-medicinal waste. Types of bio-medical waste. Collection of bio-medical waste, treatment and safe disposal of biomedical waste

Reference Book:

6	Who - A Guide to X-Ray Department	
7	Who - Manual of Radiographic Technique.	
8	Radiographic for Technicians.	
9	Hand Book on entrepreneurship Development	O.P. Harkut.
10	Environmental Impact Assessment	Mc Graw Hill, New Yark, 1977

Clinical Instrumental Skill Lab Training - II RationaleIt is very important for an X-ray trainee to have practical knowledge of various laboratory tests. The student will be able to interpret correctly the test results and correct diagnosis of a disease.PracticalsPractical training related to theory papers - Radiography -II (Special). Radiotherapy Radiation Hazards Protection, Physics of Recent Advances, Patient care Hospital Management.Since the trainee has to work on various medical instruments equipments, he must have the basic knowledge and practical training about the different machines so that in case of any trouble during work. He/She will be able to correct and repair the faults.Praticals:- Introduction to equipments- Simple usage- Indication contraindication use- Repair maintenance of instruments.Note. - The Essential Theory should be taught during the practicals,Reference Books:Who - A Guide to X-Ray Department.[Schedule-3] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See regulation 41(2)]Syllabus of Diploma in Dental Mechanics TechnologyPart - 1Applied Physics, Chemistry Mechanics.Dental Mechanics.Applied Oral Anatomy.Part - 2Dental Mechanics (Final)Dental Materials Metallurgy.Basic Knowledge of Computer Records ManagementTeaching Examination Scheme

S. No.	Subject	Distribution of time	Distribution of marks					
Hours per week	Exam							
Th	PR	T	TH	PR	Viva-voce	Total		
DM-1	Applied Physics, Chemistry Mechanics	1	-	1	100	-	-	100
DM-2	Dental Mechanics	1	-	1	100	75	25	200
DM-3	Applied Oral Anatomy	1	-	1	100	75	25	200
DM-PRS	Sessional Assessment (PRS)	-	33	-	-	100	-	100
	Total	3	33	36	300	250	50	600

Teaching Examination Scheme

S. No.	Subject	Distribution of time		Distribution of marks				
Hours per week	Exam							
Th	PR	T	TH	PR	Viva-voce	Total		
DM-4	Dental Mechanics (Final)	1	-	1	100	75	25	200
DM-5	Dental Materials Metallurgy	1	-	1	100	-	-	100
DM-6	Basic Knowledge of Computers RecordsManagement	1	-	1	100	-	-	100
DM-PRS	Sessional Assessment (PRS)	-	33	-	-	100	-	100
	Total	3	33	36	300	175	25	500

Syllabus For Diploma In Dental MechanicsPart-1 Applied Physics, Chemistry Mechanics

1. Applied Physics. - Specific gravity density, properties of matter, including cohesion, capillarity, surface tension viscosity, elasticity, diffusion and osmosis. Heat: temperature and its measurements thermometers and Pyrometers. General account of expansion by heat of solids, liquids and gases, thermostats, pressure gas and hydraulic. Boyle's and Charles Laws, Unit of heat, thermal capacity and specific Heat, Change of stage: Latent heat: melting Point. Properties of vapors, conduction, convection and radiation. Principles of electrotechnology applied to dental work room.

Exercises/ Demonstrations: -• Balance- weighing correct to a milligram• Determination of specific gravity by the principle of Archimedes (Solids and Liquids).• Determination of Surface tension of liquid by capillary rise.• Determination of Linear expansion of solids (level methods).• Determination of the specific heats of solids and liquids by the method of mixtures.• Small motors-constructional features and characteristics (Demonstration only)• Determination of the electro-chemical equivalent of copper.Applied Mechanics. - Parallelogram and triangle of forces. Moments, Couples, Centre of gravity. Principles of lever and cantilever work, Energy, Power, Friction, Inclined plane, Screw Strees, heating Strain, Torsion, Bending movements. Strength and stiffness of materials.Exercises/ Demonstrations. - Verification of the parallelogram and triangle laws of forces.Inclined plane Determination of mechanical advantageDetermination of Young's Modulus by bending of beams.Applied Chemistry. - Distinction between physical and chemical change; elements, mixtures and compounds: position of the atmosphere; oxygen oxides; burning and rusting; water solvent properties and rusting, water solvent properties crystnillization; action of water on metals; composition of water hydrogen; laws of chemical ; meaning of chemical symbols valency; simple chemical equations; acids, bases andElectrolysis, The ionic theory of solution. The electro potential series, electroplating, general characteristics of the metals including an elementary study of the common metals and alloys with special reference alloys with special reference to those used in the dental work room.Alcohol, ethers adlehydes and ketones, futty acids and their more

important derivatives, Simple treatment of carbohydrates, fats and proteins, benzens and its homologues characteristics of aromatic substances. Synthetic resins and plastics used in Dentistry.Exercises/ Demonstrations:Tests for acids and alkalis radicals.Acid- base titration-Neutralisation of acids with. Titration of N/10 NaOH with N/10 H2SO4 Phenolphthalein or methyl red as indicator 24Total Nitrogen determination in in-oragnic nitrogenous materials, digestion anddistillation.Total Nitrogen determination in in-organic (ammonical) solutions (or salts) by direct distillation with Mg.Determination of Phosphorus in in- oraganic materials by prexipitation.Determination of Potassium in aqueous solution by per chlorate method.Electrolytic deposition (electrolysis and electroplating of metals).(c)Deposition of Copper by electrolysis of copper sulphate solution.(d)Calculation of E. C. E.Dental Mechanics

1. Dental mechanics (Primery):

Bite blocks. - base plates and wax rims.Articulators. - classification, daily uses, and care of articulators.Adjustments, mounting of casts.Articulation, occlusal plan, protrusive balance, working bite, balancing bite, curve of space, compensating curve, lateral curve.Principles of selection of teeth.Setting of teeth and wax finishing.Flasking, dewaxing, packing, curing and deflasking.Finishing and polishing of dentures.Additions, repairs, relining and revasing of dentures.Immediate denture construction.Making of acrylic teeth.Kennedy's classification of partial dentures.Principles of partial denture, clasp surveyor, surveying, path of insertion and removal. Establishment of clasp seat.Clasp's parts, classification, function and reciprocation.Principles of wire bending, preparation of wrought clasps, occlusal rests and lingual bars.Applied Oral AnatomyApplied Oral Anatomy:Elementary anatomy and structure of denture/ bearing area.Human dentition and occlusionFunctions of teeth and morphology of crowns of teethMuscles of mastication and facial expressionMovements of tempera- mandibular jointExercise/ DemonstrationsTooth Carving in wax and plaster. (Crown and root, scale and enlarged models).Syllabus For Diploma In Dental MechanicsPart- 2Dental Mechanics (Final)

2. Dental mechanics (Final) :

Casting machines. - Centrifugal and pressure casting machines, furnaces, principles of casting.Casting techniques of partial denture (Skeletal) clasps, bars, occlusion rest. Setting of teeth and completion of dentures on metal skeletons.Mechanical principles of orthodontic appliances, anchorage, force, tissue changes and retention.Stainless steel wire-preparation of clasps, springs and arch wires for orthodontic appliances.Use of various types of expansion screws.Designing - implant supported prosthesis (if facilities available for dental implants.Ceramic, laminates and veneers.Fabricating. - Maxillofacial prosthesis such as eye, nose ear, cheek, obturater and splint.Indirect resin restoration preparation techniques. Porcelain firing techniques:Preparation of removable orthodontic appliances, activators. Retention appliances and oral screen.Construction of fixed orthodontic appliances, bands, tubed and arches.Soldering and spot welding- soldering of claps, tags, strengtheners and lingual bars.Inlays and Crowns-classification and construction facing backings.Casting proceduresPrinciples of bridge work-types of abutments - abutments and pontics-construction of bridges using porcelain and acrylic pontics.Dental Materials Metallurgy

3. Dental Materials and Metalluurgy

Dental Materials. - Composition, properties, uses, advantages disadvantages of the following materials: -Plaster of paris: dental stone, die stone, Investment materials. Tray materials, Denture base materials, both foe cold curing, tooth materials waxes, base plates, zinc oxide, dental luting cements, dental ceramics and indirect resin restoration materials.Dental Metallurgy:Metallurgical terms.GeneralStudy of:(a)Metals used in dentistry particularly gold, so;ver, copper, aluminium.(b)Alloys used in dentistry particularly, casting gold wrought gold Heat treatment-annealing and tempering.Solders, fluces, anti fluxes.Tarnish and corrosion.Elcctic deposition.Dental implant materialsBasic Knowledge of Computers Records Management

4. Basic Knowledge of computers

General office routine economics, record-keeping services, professional referrals and computing skill;Record keeping of materials indented and audit of use.Receipt and dispatch of work from clinicians.IV. Practical ExaminationsThe practical examination shell includes, but not necessarily limited to the followingI. Primary examinationa. Model preparation, beading, boxing of modelsb. Class I ideal denture setup and wax upc. RPD - surveying of models and wax pattern preparationd. Spotting of dental materialse. Manipulation of lab dental materialsII. Final examination

1. Three units FPD

Model poringDie-preparationSpecer applicationWax patternCasting pf a;; meta; brodge

2. Ceramic application on single unit crown (Casted before)

[Schedule-4] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 41(2)]Syllabus of Diploma in Dental Hygiene TechnologyPart - 1Anatomy, Physiology Histology.Pharmacology, Pathology Microbiology.Food Nutrition RadiologyPart-2Dental Hygiene Oral Prophylaxis.Dental Education, Community/public Health Dentistry, Preventive Dentistry.Dental Materials,Dental Ethics Jurisprudence, Orientation In Dentistry.Teaching Examination Scheme

S. No.	Subject	Distribution of time		Distribution of marks				
Hours per week	Exam							
Th	PR	T	TH	PR	Viva-voce	Total		
DH-1	Anatomy, Physiology Histology	1	-	1	100	75	25	200
DH-2	Pharmacology, Pathology	1	-	1	100	75	25	200

	Microbiology							
DH-3	Food Nutrition Radiology	1	-	1	100	75	25	200
DH-PRS	Sessional Assessment (PRS)	-	33	-	-	100	-	100
	Total	3	33	36	300	400	-	600

Teaching Examination Scheme

S.No.	Subject	Distribution of time	Distribution of marks					
Hours per week	Exam							
Th	PR	T	TH	PR	Viva-voce	Total		
DH-4	Dental Hygiene Oral Prophylaxis	1	-	1	100	75	25	200
DH-5	Dental Education, Community/public HealthDentistry, Preventive Dentistry	1	-	1	100	75	25	200
DH-6	Dental Materials, Dental EthicsJurisprudence, Orientation In Dentistry	1	-	1	100	75	25	200
DH-PRS	Sessional Assessment (PRS)	-	33	-	-	100	-	100
	Total	3	33	36	300	400	-	600

Syllabus For The Diploma In Dental HygienistsPart- 1Anatomy, Physiology Histology(1)Anatomy, General and Dental:Lectures:General structure of mucosa membrane (tongue, pharynx, lips), bones, muscles, blood vessels, lymphatic, glands nerves. Blood and nerve supply in relation to face in general and teeth and associated structure in particular.Elementary knowledge of development of the jaws and teeth.Structure nomenclature and morphology of human teeth.Eruption, resorption occlusion of teeth.Relationship of teeth with investing tissues.Muscles of mastication and facial expression.Tempro mandibular Articulation.Course and distribution of Vth and VIIth cranial nerves.Practical:Osteology of head and neck in general and face, including jaws in particular Morphology of teeth.Alveolar process of jaw bones.Section of tooth in situ.(2)Physiology Histology, General Dental:Lectures.Cell structure of the human body.Salivary glands, ducts and their function.Composition and function of Saliva.Blood : Compositions function.Mastication deglutition Phonation.General outlines of the physiological processes of the human body-particularly circulatory.Practical:Study of prepared histological slides of oral and dental tissue, sections of a tooth.Routine blood examination.Pharmacology, Pathology Microbiology.(3)Pharmacology, General Dental:Lectures:Brief description, nomenclature, derivation, dosage, pharmacological action and therapeutic uses of drugs commonly used in dentistry (Obtundent, astringent, mouth wash, antiseptics)Practical:Preparation of gum paints, mouth washes and dentifrices.(4)Pathology Microbiology, General and Dental:Lectures:General principles of Pathology-Inflammation degeneration and repair Application of general principles of pathology to tooth and surrounding tissues.Dental Anomalies.Attrition, Abrasion and Erosion.Oral manifestation of systemic diseases

like diabetes, syphilis, anemia, vitamin deficiencies and infectious diseases like AIDS Hepatitis BInfection Control in Dental Operatory and Bio- Medical waste Management and Handling Neoplasm with reference to oral cavity.Elementary knowledge of Bacteriology, Asepsis, infection, Immunity, brief description of Pathology and Bacteriology of Dental caries ad gingival infections.Practical:Study of prepared pathological and bacteriological slides relating to oral and dental conditions.Clinical demonstration of oral and dental manifestation of systemic disorders.Food Nutrition Radiology(5)Dental Radiology:Lectures:Fundamental and elementarprinciple of Dental radiology including X- Ray machine, its components and maintenance.Basic knowledge of Radio Visio Grapy technique extra oral radiograph including Panoramic (Ortho- pantographs and cephalostats).Automatic film processingCataloging Indexing of 10PA films.Knowledge of occlusal, bitewing and digital radiography.Technical aspects of Dental Radiographs i. e. the taking, processing and mounting of Dental Radiographs.Characteristics of acceptable image, factors that influence finished radiographs, rules of radiation protection.Radiation Hazards.Practical:Taking processing and mounting of Intra Extra oral Radiographs.(6)Food And Nutrition:Lectures:Basic food chemistry in relation to general and Oral Health. Physical nature of diet in prevention of dental diseases.Carbohydrates, fats, proteins, vitamins, minerals and water in relation to dental and oral health.General food requirements for growth, maintenance and repair of the body.Assessments charting of individual diet' counseling.Effect of malnutrition on oral health.Special diet and its administration in maxillofacial injury cases.Syllabus For The Dental Hygienists Course Final (II Year)Dental Hygiene Oral Prophylaxis.(7)Dental Hygiene and Oral Prophylaxis (Primary and Final):Lectures:Definition of HygieneObjective of Dental HygieneOral Prophylaxis- Various methodsOn teeth- extrinsic, intrinsic and their managementDental PlaqueFlossing techniqueDental calculusTechnical knowledge of ultrasonic scalingBrief description and the role of Oral Prophylaxis in Gingivitis, Periodontitis, Periodontal and Alveolar abscess.Clinical:Instruments, technique of Oral ProphylaxisDistaining and polishing of teethCopical application of fluoridesCare of oral cavity and appliances during treatment of maxillofacial cases.Dental Education, Community/public Health Dentistry, Preventive Dentistry(1)Dental Health Education Community Public Health Dentistry Preventive Dentistry:Lectures:Definition of Health and dental healthAims and objectives of Denta; health educationDental Health and ChildrenSteps in preventive program, patient counselingDental Health Education- Parents, mothers (anti and postnatal), infants pre-choolChildren and grownup Handicapped childrenDental caries-Prevalence and PreventionPrevention by fluoridationPeriodontal diseases.Saliva in relation to dental health and disease.Dietary habits and Dental HealthHabits and MalocclusionOral CancerBrief outline of historical background of Public Health,History of dentistry and Public Health Services.Dental Health Team in relation to community health.Technical knowledge of Topical fluoride Application.Practical:Preparation of models of jaws and teeth- normal and pathological dental conditions.Designing drawing and painting of posters on dental heath education.Procedure for arranging short talks, skits and features on dental and oral health, visual aids.Collection of Oral Health related statistics by conducting a small survey of an area.Dental Materials,Dental Ethics Jurisprudence, Orientation In Dentistry(2)Dental Ethics, Jurisprudence and Orientation in Dentistry:Lectures Practical:Difference between ethics and law, types of law.Legal impositions in relation to dental practice code of ethicsUnlicensed practice of dentistryRegulatory and professional organizationPlace and function of dental profession in the society discussion of economic problems involved there in.Social factors in

Dental progress, income and living standard of people.Objective and scope of dentistry.Dental specialties.(3)Basic Knowledge of ComputerGeneral office routine economics, record- keeping services, professional referrals and computing skill;Dental MaterialsLectures Practical:General knowledge of various material used in Dentistry such as impression material, gypsum products, waxes, investing materials and various filling materials, temporary and Permanent cements, orthodontic material and implant materials used in maxillofacial and surgical prosthesis.Recognition and knowledge of various dental equipment and stores Used in dental establishment. Organization of dental stores, storage and accounting, handing and maintenance of dental items, assembly and minor repair of dental equipment.[Schedule-5] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 41(2)]Syllabus of Diploma in Operation Theater TechnologyFirst Year

1. Anatomy Physiology

2. Computer Communication Skills

3. Basic Bio Chemistry Pathology Micro Biology

4. Basic obstetrics and Gynecology

5. General Principal of Hospital Practice and Patient Care

Practical:• Anatomy Physiology• Basic Bio Chemistry, Pathology Micro Biology• Basic obstetrics and Gynecology• O.T. Instruments Technique• Hospital Training 45 Days after final examinationSecond Year

1. Entrepreneurship Professional Management

2. Environmental Bio Medical Waste Management

3. Patients Care education and Intensive Care unit

4. Introduction to Anesthesia Technology

5. Basic Anesthesia Technology

6. Applied Anesthesia Technology

Practical:• Patients Care education and Intensive Care unit• Introduction to Anesthesia Technology• Basic Anesthesia Technology• Applied Anesthesia Technology• O.T. Instruments Technique• Hospital Training 45 Days after final examinationExamination Scheme for (1st Year)Diploma in Medical Operation Theater Technology

Subjects	Hrs. Per Week	Theory Paper	Exam Hrs.	Maximum Marks								
D.O.T.T. First Year	L	T	P			I. A.	Exam	Total				
Anatomy Physiology	5	1	-	T	3	A	B	Total	A	B	Total	100
15	15	30	35	35	70							
Computer Communication Skills	2	1		T	3	15	15	30	35	35	70	100
Bio Chemistry Pathology, Micro Biology	5	1		T	3	15	15	30	35	35	70	100
Basic obstetrics and Gynecology	4	2	-	T	3	30	70	100				
General Principal of Hospital Practice andPatient Care	4	2		T	3	30	70	100				

Practical:

	Hrs Per Week	Practical Paper	Exam Hrs.	Maximum Marks						
IA	Exam	Total								
Anatomy Physiology	3	P	3	A		B	Total	A	B	Total	50
				8		7	15	18	17	35	
Bio-Chemistry, Pathology, Micro Biology	3	P	3	8		7	15	18	17	35	50
Basic obstetrics and Gynecology	3	P	3	15		35	50				
O.T. Instruments Technique	2	P	3	15		35	50				
Hospital Training 45 Days after finalexamination	Operation Theatre Departments, CSSD	100	100							
			800							

All theory paper carries a maximum of 100 marks out of which 30 marks are forinternal Assessment and 70 is for Council Exam. All practical paper carries a maximum of 50 marks out of which 15 is for internal Assessment and 35 is for Council Exam. And hospital training each 100 hundred marks.Paper-1A (Anatomy), B (Physiology)I. The human body as a whole. - Definitions, Subdivisions of Anatomy, Terms of locations and position, Fundamental Planes, Vertebrate structure of man, organization of the Body Cells and Tissues.II. Locomotion and support. The Skeletal system. - Types of bones, structures and growth of bones. Divisions of the skeleton. Appendicular skeleton. Axial skeleton. Bones of Upper Limb -Clavicle, Scapula, Humerus, Radius,

Ulna Lower Limb - Femur, Hipbone, Sacrum Tibia, Fibula Vertebral Column, Ribs, Sternum, joint-classification, types of movements with examples.III. Anatomy of the nervous system. Central nervous system. - Spinal Cord Anatomy, functions, reflex- arc. Meninges, The Brain- Hind Brain, Midbrain, Forebrain: Cerebrum, Cerebellum Brain Stem: Brief structure, location, functions, and Peripheral nervous system (structure of neuron)IV. Anatomy of circulatory system. - Heart size, location, coverings, chambers valves of heart, Blood supply. Nerve Supply, blood vessels, General plan of circulation, pulmonary circulation. Names of major arteries and veins and their positions, lymphatic system: general plan.V. Anatomy of the respiratory system. - Organs of Respiratory System, Conducting portion. Nose: nasal cavity. Para nasal air sinuses. Larynx, trachea, bronchial tree. Respiratory portion: Pleurae and lungs, Brief knowledge of parts and position.VI. Anatomy of the digestive system. - Components of Digestive system, alimentary tube. Anatomy of organs of digestive tube, mouth, salivary glands, stomach, intestine, liver. Biliary apparatus, pancreas, Names and positions and brief functions.VII. Anatomy of excretory system and reproductive system. - Kidneys: location, gross structure function structure of nephron, excretory ducts, ureters. Urinary bladder. Urethra gross structure function, Male Reproductive System:VIII. Anatomy of the endocrine system. - Name of all endocrine glands their positions. Hormones and their functions- Pituitary, Thyriod, parathyroid. Adrenal glands. Gonads Islets of pancreas.IX. Histology-Epithelium, connective tissue, gland.Anatomy Practical:• Demonstration of bones identification and side determination upper limb-clavicle, scapula, humerus, radius, ulna, lower limb-temur. Hip bone, Tibia, Fibula, Vertebral Column, Ribs, Sternum, Sacrum• Demonstration of heart.• Demonstration of different parts of respiratory system and normal X-rays- lungs.• Demonstration of the part of digestive system and normal X-rays- stomach, small intestine, large intestine, liver.• Embalming of human cadavers for teaching purposes social/ funeral embalming.• Surface anatomy on cadaver.• Demonstration of major vessels of the body-Aorta, subclavian, carotid, brachial, radial, ulnar, femoral, renal.• Demonstration of major muscles of the body-limbs• Demonstration of other organs -spleen, testis, uterus.(B)Physiology:General Physiology: Cell: Structure and function of a cell. Transport across the cell membrane Active transport. Passive Transport: Diffusion Osmosis, Tissues: Definition, types, Nerve Body water and body fluids: Distribution and Ionic composition of body fluids The Membrane Potentials: Resting membrane potentials and Action PotentialBlood : Composition and functions of blood. Blood Cells: RBC, WBC, Platelets, Hemoglobin, Coagulation of blood (Clotting factors), Blood groups, Immunity,: Anaemia, Jaundice, HemophiliaGastrointestinal Tract: Structure and Functions Oral Cavity : Composition and functions of saliva. Mastication (chewing). Swallowing Stomach: Structure and Functions, Gastric juice. Gastric motility and emptying Pancreas: Structure and Functions, Composition and functions of pancreatic juice Liver: Structure and Functions Gall Bladder : Functions of gall bladder Bile: Composition and functions Intestine: Intestine juice and movements Balanced diet Applied aspectRespiratory System : Air Passages: Function and structure, Functions of respiratory system, Mechanism of respiration (Inspiration and Expiration), Lung volumes and capacities Alveolar Ventilation, Dead space (Anatomical and Physiological) Transport of gases: Oxygen transport [Carriage of oxygen in blood; Dissolved form combined with hemoglobin], Oxygen hemoglobin dissociation curve, Carbon-di-oxide transport [Carriage of Carbon-di-oxide in blood]. Regulation of respiration: Nervous Regulation [Automatic control via Medullary and Pontine centers. Voluntary control of respiration]. Chemical Regulation of respiration [Peripheral chemoreceptors (Carotid bodies' and Aortic bodies) and Central (Medullary) chemoreceptors]. Hypoxia (Types of hypoxia),

DyspneaCardiovascular System : Properties of Cardiac Muscle Physiological structure and function of CVS (Valves, Pacemaker tissue,Heart sounds) Cardiac Cycle Heart rate Electrocardiography, Cardiac 'Output Arterial blood pressure Regulation of cardiovascular systemExcretory System : Nephrons: Cortical and medullary Urine formation Micturition Functions of kidney: Endocrine functions. Water balance. Acid-base balanceEndocrine System : Definitions and properties of hormones Pituitary Gland Anterior Pituitary - Six Hormones (GH, PRL, TSH, ACTH, LH, FSH) Growth Hormone (GH): Action and control, Applied (Dwarfism and Acromegaly) Prolactin (PRL): Action and control Posterior Pituitary ADH (Anti diuretic hormone): Action and control. Applied Oxytocin: Action and Control Thyroid Gland: Types of hormones (T3 and T4), Regulation of hormone secretion. Actions of thyroid hormone: On carbohydrate metabolism. On lipid metabolism, On growth and development. Effect on. nervous system, Applied (Goiter, Hypothyroidism, Hyperthyroidism) Parathyroid, Calcitonin and Vitamin-D: Role of calcium in physiological processes. Hormones regulating calcium metabohsm (Vitamin-D, PTH, Calcitonin), Applied: Rickets Adrenal Cortex: Actions of glucocorticoids, : Actions of Mineralocorticoids, Applied: Cushing's syndrome, Addison's disease. Sex hormones Adrenal Medulla: Actions of catecholamines, Pancreas: Hormones: Glucagon and Insulin, Applied: Diabetes MellitusReproductive System Sex determination. Sex differentiation and Puberty Male Reproductive System: Testis: Structure and functions. Spermatogenesis, Structure of the sperm. Seminal fluid (semen), Endocrine functions (Testosterone) Female Reproductive System. Structure and functions. Ovary, Ovarian hormones (Estrogen, Progesterone) Menstrual cycle: Menopause Contraceptive measuresCentral Nervous System Organization and functions of nervous system Brain: Cerebrum, Thalamus, Hypothalamus Brain stem: Midbrain, Pons, Medulla, Cerebellum Spinal Cord: Structure and functions Autonomic Nervous system (ANS) Cerebrospinal Fluid Special Senses: The Smell: Olfactory receptors. Olfactory pathway The Taste: Taste Receptors (Taste buds), Taste Pathway The Ear: External ear. Middle Ear, Internal ear (Cochlea), Mechanism of hearing, Applied (deafness) The Eye: Parts of eye: Sclera, Choroid, Retina, Crystalline lens, photoreceptors (Rods and cones). Visual Pathway, Image formation. Accommodation, Lacrimal gland. Applied (Cataract, Glaucoma, Blindness)Skin and Temperature: Structure and function of skin TemperatureRegulationPractical:• Collection of blood• Study of haemocytometer. Haemoglobinometry white blood cell count, red blood cell count,• Determination of blood groups.• Leishman's staining and differentiate WBC counts.• Determination of packed cell value• Calculation of blood indices, fragility test for R.B.C.• Erythrocyte sedimentation rate (ESR)• Determination of bleeding time.• Determination of clotting time• Blood pressure recording auscultation for heart sounds, artificial respiration determination of vital capacity.Recommended Books:

1. Text books of Physiology. Author: Guyton (Arthor C). Prism publishers Bangalore.

2. Human Physiology. Author : Chaterjee (cc). Medical allied agency

3. Concise Medical physiology. Author : Choudhary (Sujit km.). New central books Kolkata.

4. Review Medical physiology. Author : Ganang. Application and Lange.

5. Human physiology. Author : Pro. A.K. Jain. Avichal Publishing Company.

6. Practical Physiology : Author : Prof. A.K. Jain, Arya Publishers.

Paper II - Computer Communications SkillsA-Communication SkillCourse OutlineCourse Description : This course is designed to help the student acquire a Good command and comprehension of the English language through individual Papers and conferences.Behavioural Objectives:The student at the end of training is able to

1. Read and comprehend English language

2. Speak and write grammatically correct English

3. Appreciates the value of English literature in personal and professional life.

Introduction:Study TechniquesOrganization of effective note taking and logical processes of Analysis and synthesis Use of the dictionaryEnlargement of vocabularyEffective dictionUnit-1

1. Parts of Speech (Definition of all the sight parts along with examples and their use in language) Articles : Definite and indefinite Articles (a. an and the) Definition and its uses along with examples and personal, Reflexive, Emphatic Demonstrative, Relative, indefinite. Interrogative and distributive pronouns

2. The Noun (Defining Noun along with types and categories): Gender: Number Case, The Adjective: Comparison, adjective used as nouns, positions of the adjective and its correct use of adjectives. The Verb Definition. Its forms. Verbs of Incomplete Predication.

3. Phrases (Defining it along with examples) : Adjective, Adverb* and Noun Phrase and Clauses (defining it along with examples): Adverb, Adjective and Noun Clauses.

4. The Sentence and its types, Simple, Compound and Complex , Subject and Predicate (Parts of a sentence), Transformation of sentences : Active and Passive Voice, Mood and Narration (Direct and indirect Speeches)

Unit-II

1. Words and Phrases. - Word Formation (Perfix, Suffix), Idioms, Synonyms and Antonyms

2. Phonetics: Speech Sound, the phoneme, the syllable and IPA transcription Business Correspondence:

Unit-1

1. Paragraph Writing: - Introductory Remarks, Principals, The Writing of Single Paragraphs and Precis Writing.

2. Letter Writing, Quotations, Orders and Tenders: Inviting and Sending quotations. Placing orders and inviting tenders.

Unit-II

1. Notices , Agenda and Minutes

2. Application Letter: Importance and function, drafting the application, elements structure, preparing CVs.

Unit-III: Applied Grammar:

3. Correct usage

4. The structure of sentences

5. The structure of paragraphs

6. Enlargements of Vocabulary

Unit-IV: Written Composition:Precise writing and summarizingWriting of bibliographyEnlargement of VocabularySuggested Reading : English Grammar and Composition Wren and Martin. S. Chand Company Ltd.(B)Computer:

1. Computer Application Characteristic of computers.

a. Input, output, storage unites.b. CPU, Computer system.

2. Computers Organization

a. Central Processing Unit.b. Control Unit.c. Arithmetic Unit.d. Instruction Set.e. Register.f. Processor Speed.2.2Memorya. Main Memory.b. Storage Evaluation Criteria.c. Memory Organization.d. Memory Capacitye. Random Access Memories.f. Read Storage Devices.i. Magnetic Diskii. Floppy and Hard Disk.iii. Optical Disks CD-ROMiv. Mass Storage2.3Input Devicesa. Keyboard.b. Mouse.c. Trackball.d. Joysticke. Scannerf. Optical Mark Readerg. Bar-Code Readerh. Magnetic ink character reader.i. Digitizer.ii. Card reader.iii. Voice recognition.iv. Web cam.v. Video Cameras.2.4Output Devicesa. Monitors.b. Printers.i. Dot Matrix Printers.ii. Inkjet Printers.iii. Laser Printers.c. Plotters.d. Computers Output Micro Files (Com).e. Multimedia Projector.

3. Operating System

a. Microsoft.i. An overview of different version of windows.ii. Basic windows elements.iii. File management through windows.iv. Using essential accessories : System took Disk cleanup. Disk defragmenter, Entertainment, Games, Calculator. Imaging - Fax, Notepad, paint, WordPad. Recycle Bin, Windows Explorer, Creating Folders, Icons.

4. Word Processing:

a. Word processing concepts.b. Saving, closing, opening an existing document.c. Selecting text, editing text.d. Finding and replacing text.e. Printing documents.f. Creating and printing merged documents. Mail merge.g. Character and paragraph formatting, page design and layout.h. Editing and proofing tools; checking and correcting spelling.i. Handing graphics,j. Creating tables and charts,k. Documents templates and wizards.

5. Presentation Package:

a. Creating opening and saving presentations.b. Creating the look of your presentation.c. Working in different views, working with slides.d. Adding and formatting text, formatting paragraphs.e. Checking spelling and correcting typing mistakes,f. Making notes pages and handouts.g. Drawing and working with objects.h. Adding clip art and other pictures.i. Designing slides shows.j. Running and controlling a slide shows,k. Printing Presentations.Unit-1: Use at Internet and E-mail:

1. Internet.

2. Websites (Internet sites).

3. The Mail Protocol site.

Unit-2 : Hospital Management System : Types and Uses.

1. Hospital Management and System Package.

Reference Books:

1. Foundations of computing first edition. 2002. Author : P.K. Sinha and P. Sinha.

2. Microsoft office 2000 for windows, second Indian pint, person education. Author : S. Sagman.

Paper 3 (A) Biochemistry (B) Pathology, Microbiology 1st year:(1)Acids and Bases. Definition, definition of pH and its interpretation.(2)Water and Solutions. Osmosis, Molarity, Molality, Normality. Buffer solution and their importance. pKa of buffer solution.(3)Chemistry of Carbohydrates: Definition, Classification, Structural Isomerism, Optical isomerism, reactions.(4)Chemistry of Proteins and Amino Acids: Definition, Structure and classification of Amino Acids. Essential amino acids. Definition, Structure of proteins. Functional classification of proteins.(5)Chemistry of Lipids: Definition of lipids, Classification of lipids, Phospholipids, Gangliosides, Cerebrosides, Glycolipids, Lipoproteins (definition, classification and functions) Chemical reactions of Lipids.(6)Chemistry of Nucleic acids: Structure of DNA, RNA classification and structure of the various types of RNA.(7)Nutrition and Basal metabolism: BMI and its calculation. Specific dynamic action (SDA), Nutritional requirements and their calculations. Protein energy malnutrition,(8)Vitamins: definition. Classification, Uses in the body and deficiency diseases.(9)Clinical biochemistry: (for MLT course only)(a)Photometry: Laws of Photometry, absorbance, transmittance. Structure and components of a photometer. Types of photometry: colorimetry, spectrophotometry, flurometry. Choice of filters etc.(b)Electrophoresis Principal types and applications.Practical:• Introduction to apparatus, instruments and uses of chemical balance.• Preparation of solutions, calculation of molecular weights and Equivalent weights preparation of normal solution, molar solutions, percent solution and reagents Dilution techniques.• Measurements of hydrogen ion concentration qualitative Analysis. Identification of carbohydrates, proteins and substances of biochemical Importance.• Demonstration of colorimeter, spectrophotometer, perimeter, single pan balance.• Disposal regulations, workplace hazardous.• Specimen collection, identification, transport, delivery and preservation.• Patient preparation for tests.• Anticoagulants and preservatives• Regulations and precautions regarding transport of biological specimens• Preparation of high quality water• pH determination• Preparation of buffers and determination of pH• Measurement of radioactivity• Practical related to solvent extraction. Partition coefficient. Dialysis, Concentration,• Desalting and U1tracentrifugation.• Calibration of equipments and laboratory wares.• Familiarization and usage of Colorimetry, spectrophotometry, fluorimetry,• flame photometry, atomic absorption spectroscopy, nephelometry, osmometry,• Chemiluminescence ,ion selective electrodes, flow cytometry.• Chromatography : - Paper, Thin layer. Gel filtration, Ion exchange, HPLC, GLC,• Separation of various sugars, amino acids, lipids, drugs toxins etc. Urine aminogram.(B)Pathology, Microbiology:

1. Year 70 Hrs

Unit 1 The Cell in health and disease 10 Hrsa. Introduction of pathologyb. Cellular structure and metabolismc. Inflammation - Acute and Chronicd. Derangement of Body Fluids and Electrolytes• Types of shocks• Ischaemia• InfectionUnit 2 Body Fluid 20 Hrs(a)Urine :• Method of Collection• Normal Constituents• Physical Examination• Chemical Examination(b)Stool Examination :• Method of Collection• Normal Constituents and appearance• Abnormal Constituents (Ova, Cyst)(c)C.S.F. Examination• Physical Examination• Chemical Examination• Microscopy• Cell Count• Staining(d)Semen Analysis• Collection• Examination• Special TestsHuman blood group antigens and antibodies(b)ABO Blood group systems• Sub. - group• Source of antigens and types of antibodies(c)Rh Blood group System• Types of Antigen• Mode of Inheritance• Types of Antibodies(d)Other Blood group Antigens(e)Blood Collection• Selection and screening of donor• Collection of blood• Various anticoagulants• Storage of Blood• Changes in Blood on StorageUnit 3 Histopathology 25 Hrs(a)Fixation of tissues• Classification of Fixatives(b)Tissue Processing• Collection• Steps of fixation(c)Section Cutting• Microtome and Knives• Techniques of Section Cutting• Mounting of Sections• Frozen Sections(d)Decalcification• Fixation• Decalcification• End Point(e)Staining Dyes and their properties, H E Stain, Special Stains Histo Pathology .Clinical Pathology, Haematology and Blood Banking Histo Pathology - Theory- Introduction to Histo Pathology- Receiving of Specimen in the laboratory- Grossing Techniques- Mounting Techniques - various Mountants- Maintenance of records and filing of the slides.- Use care of Microscope- Various Fixatives, Mode of action, Preparation and Indication.- Bio-Medical waste management- Section Cutting- Tissue processing for routine paraffin sections- Decalcification of Tissues.- Staining of tissues - H E Staining- Bio-Medical waste management- Clinical Pathology - Theory- Introduction to Clinical Pathology- Collection, Transport, Preservation, and Processing of various clinical specimens- Urine Examination - Collection and Preservation of urine.w- Physical, chemical, Microscopic Examination- Examination of body fluids.w- Examination of cerebro spinal fluid (CSF)- Sputum Examination.- Examination of feces- Haematology - Theory- Introduction to Haematology- Normal constituents of Blood, their structure and function.- Collection of Blood samples- Various Anticoagulants used in Haematology- Various instruments and glassware used in Haematology, Preparation and use of glassware- Laboratory safety guidelines- SI units and conventional units in Hospital Laboratory- Hb, PCV - ESR- Normal HaemostasisBleeding Time, Clotting Time, Prothrombin Time, Activated Partial ThromboplastinTime.Blood BankIntroductionBlood grouping and Rh TypesCross matchingPractical:

7. Introduction: Aim, basis, interpretation, safety in clinical pathology laboratory.

8. 2. Laboratory organisation : Instruments, glassware's, sample collection and specimen labeling, routine test, anticoagulants, reagents, cleaning of glassware, isotonic solution, standardization of methods, preparation of solution and interpretation of result, normal values.

1. Basic requirements for hematology laboratory.

2. Complete Blood Counts.

3. Determination of Hemoglobin.

4. TRBC Count by Hemocytometers.

5. TLC by Hemocytometer.

6. Differential Leukocyte count.

7. Determination of Platelet count.

8. Determination of ESR by wintrobes.

9. Determination of ESR by Westergerent's method.

10. Determination of PCV by Wintrobes.

11. Erythrocyte Indices - MCV, MCH, MCHC.

12. Reticulocyte count.

13. Absolute Eosinophil count.

14. Morphology of Red Blood Cells.

15. BT and CT, PT (prothrombin) time.

16. Demonstration of (MP), malaria parasite.

17. Bone marrow smears preparation and staining procedure Demonstration.

18. ABO Blood grouping, RH typing and cross match

19. Performance of direct and indirect combs test, red cell agglutination test (screening Paul bunnel test).

20. Blood donor selection and screening.

21. Blood collection and preservation, principal of clearing and preparing transfusion bottle and tubing sets - preparation and Transfusion reaction and their investigations.

Practical Blood Bank:

1. Blood Bank Administration

(a)Record Keeping(b)Computerization in blood transfusion services.(c)Blood grouping ABO(d)PH typing various techniques.

2. Cross Matching

(a)Tube test(b)Slide Test(c)DU Test(d)Sub Grouping Test

3. Comb's Test

(a)Direct comb's test(b)Indirect comb's test

4. Compatibility Testing for blood transfusion cross matching test.

(a)5% cell suspension and 10% cell suspensions.(b)HIV and AIDS demonstration.Clinical Pathology:• Introduction: Aim, basis, interpretation, safety in clinical pathology laboratory.• Laboratory organization : Instruments, glassware, sample collection and specimen labeling, routine test, anticoagulants, reagents, cleaning of glassware, isotonic solution, standardization of methods, preparation of solution and interpretation of result, normal values.• Urine routine examination normal / abnormal constituents of urine.• C.S.F. and other body fluid examination.• Semen Analysis.• Sputum test.• Different types blood test.• Stool routine examination.Recommended text books and reference books (Latest Edition)

1. Hand book of Blood Transfusion Therapy. Author : J.A.F. Napier. Publisher : John Wiley Sons, Chichester, England

2. Blood Banking and Transfusion Medicine Basic Principles practice. Author : Christopher D., Hill Yeretal. Publishers : Churchile Livingstone, Philadelphia.

3. Test book of Blood Transfusion Banking and Transfusion Medicine. Author : Sallyv. Rhdman. Publisher : W.B. Sauders Company, Philadelphia.

4. Practical Haematology. Author : Sir John Dalie. Publisher : Churevill, London.

5. Test Book of Medical Laboratory Technology. Author : Praful Godkar Ramnik Sood. Publisher : Bhaliani Publication House, Mumbai.

6. Test books of laboratory technology. Author : Praful Godkar.

7. Todd and Sanford Clinical diagnosis and management by laboratory methods. Author : Johan Bernard Henry.

8. Practical Pathology. Author : Harsh Mohan.

9. Medical laboratory technology a procedure normal for routine. Author. Ramnik Sood.

(B)Microbiology:TheoryUnit IGeneral microbiology

4. hrs

• Introduction history of microbiology• Morphology and physiology of bacteria• Sterilization and disinfectionUnit IIImmunology

5. hrs

• Antigen and antibodies• Antigen - antibody reactions• Structure and functions of immune system• Immune response• HypersensitivityUnit IIISystemic bacteriology

15. hrs

• Staphylococcus• Streptococcus• Pneumococcus• Corynebacterium• Neisseria• Clostridium• Enterobacteriaceae : Escherechia .Kleibsella, Proteus• Salmonella• ShigellaPseudomonas• Vibrio• Mycobacterium• SpirocheteUnit IVVirology

11. hrs

• Morphology and Replication of viruses• Physiochemical characteristics of the viruses• Classification of virus• Laboratory diagnosis of viral infection• Herpesvirus and adenovirus• Picorna

Virus- Polio• Myxovirus- Influenza• Arbovirus- Chickengunia Dengue• Hepatitis virus• Rhabdovirus• HIVUnit VMycology

6. hrs

• Morphology and structure of fungi• Classification of fungi and Cultivation of fungi• Laboratory diagnosis of fungal infection Fungal infectionsFungal infections• Superficial mycosis• Subcutaneous mycosis• Systemic mycosis• Opportunistic fungal infectionUnit VIParasitology

9. hrs

• Introduction to parasitology with their classification ProtozoaProtozoa• Entamoeba histolytica• Giardia lamblia• Leishmania donovani (kala azar)HelminthesCestodes• Tenia solium Tenia saginata• Echhinococcus granulosusNematodes• Ascaris lumbricoides• Ancylostoma duodenale• Wucheria bancrofti• Enterobius vermicularis Trichuris trichuriaPracticalBacteriology

17. hrs

• Universal precautions• Collection and transport of clinical specimen• Compound microscope (care and operation)• Demonstration of sterilization of equipments- Hot air oven, bacterial filters• Preparation of bacterial smear and staining- Gram's, Acid- fast, Staining of bacterial spores, flagella capsule, Albert stain, spirochaetes• Preparation of commonly used culture media, nutrient broth, nutrient agar, blood agar, Chocolate agar, Mac conkey medium, LJ medium, SDA, Robertson cooked meat media,• Study of clony charecters , biochemical test for identification of bacteria, preservation of stock culture of bacteria• Antibiotic susceptibility test - different in vitro methods for antibiotic sensitivity testing• Visit to hospital for demonstration of biomedical waste management• Anaerobic culture methods,• Quality control of media and reagents etc.ParasitologyPractical parasitology

4. hrs

• Examination of stool for parasites• Examination of blood bone marrow for parasites Serological diagnostic methods. Skin test.Immunology practical

6. hrs

• Collection of blood by venepuncture, separation of serum and preservation of serum for short and long periods.• Performances of serological tests(a)Bacterial slide agglutination(b)WIDAL,VDRL, CRP(c)Pregnancy test(d)ASLO, CRP and RF(e)ELISA• Skin test(a)MT TestMycology practical:

3. hrs

• KOH and LPCB preparation• Staining techniques• Culture of fungi• Slide cultureTotal practical hours

50. hrs

Total theory hours

40. hrs

Paper 4 - Basic Obstetric and GynaecologyTo work as Operation Theatre Technician the introductory knowledge of Obstetrics Gynaecology is essential hence this subject is introduced to give brief on introductory knowledge ; which helps the technician to take some precautionary measures to keep required operation tools ready accordingly in advance,Objective : Student should be able to :

1. Understand the type of delivery and disorder

2. Keep the instruments and tools required ready well in advance

Syllabus:

1. Pregnancy

2. Normal delivery forceps delivery twin pregnancy

3. Episiotomy caesarian delivery

4. Birth control methods and contraception

5. Medical termination of pregnancy

6. Anatomy of female sex organs

7. Gynaecological examination and diagnosis

8. Disease of vulve disease of vagina STD in female

9. Disorders of menstruation

10. Prolapsed uterus Fibromyomas of uterus endometriosis various ovarian tumors

11. Gynae examination instruments speculum dialator

12. Instrument of common gynecological and obstetrics procedures or surgery

Practical:• Identification of instrument and their specific use in the surgery• Surgical assistance in the Obstetrics Gynaecological operationsInstrument for normal delivery caesarian section MTPHysterctomy preparation of Physiological changes of pregnancy• Anesthesia in early pregnancy• Antenatal assessment of the pregnant woman• Medical diseases complicating pregnancy• Pain relief in labour• Anesthesia for operative obstetrics• Emergencies in obstetrics• Neonatal resuscitationPaper 6 General Principal of Hospital Practice and Patient CareSuggested number of teaching hours 100 including tutorial and demonstrations. - This section is intended to emphasis to the student technologist the importance of patient welfare. Many of the points included in this section may be considered during the teaching of other subjects also but it is strongly urged specific teaching and as much practical demonstrating and instruction as possible should be given in this section.Modern hospital treatment is based on team work, it is essential that the student should appreciate the technologist role and that the importance of co-operation with wards and other departments.The students should be attached to wards or the accident and emergency department for a definite training period the length of time being suited to the individual hospital.Hospital procedure. - Hospital staffing and organization records relating to patients and departmental statistic professional attitude of the technologist to patient and other members of the staff medico legal aspects accident in the department appointment organization minimizing waiting time out patient and follow up clinics stock taking and stock keeping.Care of the patient First contact with patients in the department management of chair and stretcher patients and aids for this management for the unconscious patient elementary hygiene personal cleanliness hygiene in relation to patient (for example clean linen and receptacles nursing care temperature pulse and respiration essential care of the patient who has a tracheotomy essential care of the patient who has a colostomy bedpans and urinals simple application of a sterile dressing.First aid. - Aims and objective of first aids wounds and bleeding dressing and bandages pressure and splints supports etc Shock insensibility asphyxia convulsions resuscitation use of suction apparatus drug reactions prophylactic measure administration of oxygen electric shock burns scalds hemorrhage pressure points compression band Fracture splints bandaging dressing foreign bodies poisons.Infection. - Bacteria their nature and appearance spread of infections auto infection or cross infection the inflammatory process local tissue reaction general body reaction ulceration aspects and antisepsis.Principles of asepsis Sterilization methods of sterilization use of central sterile supply department care of identification of instruments surgical dressings in common use including filament swabs, elementary operating theatre procedure setting of trays and trolleys in the radiotherapy department (for study by radiotherapy students only)Departmental procedures. - Department staffing and organization records relating to patients and departmental statistic professional attitude of the technologist to patient and other members of the staff medico legal aspects accident in the department appointment organization minimizing waiting time out patient and follow up clinic stock taking and stock keeping.Drugs in the department. - Storage classification labeling and checking regulations regarding dangerous and other drugs units of measurement special drugs ant depressive antihypertensive etc.Book For Study:Deeley-A guide to Radiotherapy

nursing Living stoneCare of patient in diagnostic Radiography Chesney ChesneyChesney's Care of the patient in Diagnostic Radiography Pauline J.Culmer.Aid to Tray and Trolley Setting Marjorie Hougton First Aid-Haugher GardnerA guide to Oncology nursing (Livingstone) DeeleyO.T. Instrument Technique:Armamentarium: Cox and storing in O.T, Sterlization and disinfectionsGeneral Surgical Principles and InstrumentsThe surgical patient, operation room technique.Instruments Used For Prepairing SurgicalCheatles forceps, rampely, s sponge holding forceps mayo's towel chip, esmach's bandage.Simple tourniquet, pneumatic tourniquet;Incision Making Method and Instruments. - Bard parker knife handle, major abdominal incision, artery forceps and their types instruments used in homeostasis, Kocher's forceps, electric cautery.Retractors. - Single hook retractors, Czerny's retractor, s, nerve hook retractors, Morris retractors, deaver's, retractors.Wound Management Scissors and its types sucking material and techniques, disinfectants and irritants, dressing procedures .different types of bandages, surgical needle needle holders, various types of suture material, Identification Demonstration of working of the equipmentAnesthesia Equipment

1. Boyle's Machine it's functioning

2. Boyle's vaporizer

3. Magill's breathing circuit. Bains breathing circuit, pediatrics anesthesia circuit

4. Gas cylinders and flow meters

5. Carbon dioxide absorption contester

6. Suction apparatus-foot operated, electrically operated

7. Ambubag laryngoscope hndotracheatubes

8. Catheters,face masks, venti mask

9. Pre-anesthetic mediation

10. Local Anesthetic agents

11. Spinal Anesthetic agents

12. General Anesthetic agents

Identification demonstration of the working of equipmentsSecond YearExamination Scheme

Subjects	Hrs. Per Week		Theory Paper	Exam Hrs.	Maximum Marks			
L	T	P			IA.	Exam	Total	
Entrepreneurship Professional Management	2	1		T	3	15	35	50
Environmental Bio Medical Waste Management	2	1	-	T	3	15	35	50
Patients Care education and Intensive Care unit	4	3	-	T	3	30	70	100
Introduction to Anesthesia Technology	3	2	-	T	3	30	70	100
Basic Anesthesia Technology	3	2	-	T	3	30	70	100
Applied Anesthesia Technology	3	2	-	T	3	30	70	100

Practical:

Subjects	Hrs. Per Week	Pratical Paper	Exam Hrs	Maximum Marks		
IA.	Exam	Total				
Patients Care education and Intensive Care unit	4	P	3	15	35	50
Introduction to Anesthesia Technology	4	P	3	15	35	50
Basic Anesthesia Technology	3	P	3	15	35	50
Applied Anesthesia Technology	1	P	3	15	35	50
O.T. Instruments Technique	2	P	3	15	35	50
Hospital Training 45 Days after finalexamination	Operation Theatre Departments, CSSD	100	100			
G. Total						850

Paper I Entrepreneurship Professional Management Common to All Branches of Para medical Programmers. - As the opportunities for wage employment are reducing day by day, Govt, of India and State Govt, directed to develop entrepreneurship among the student. Entrepreneurship training is essential to make aware the student of different, branches of diploma courses about the scope of employment outside the Govt. Sector. It will equip them the necessary skills and training for setting up a small scale enterprises in their own area of study. This course includes the procedure how to select proceed and start the small scale enterprises. To achieve the target and goal in a organization it is essential to ordinate the entire system. For this the knowledge of principles of management personnel management and financial management is required

1. Entrepreneurship

Definition basic concept need, scope and characteristics of entrepreneurship.Women entrepreneurshipAssistance to small scale enterprises from national level organizafion like SI DO,

NSIC NRDC KVICAssistance to small scale enterprises from State level organization like DOI , DIG RFC RHDC Pollution Control Board Rajasthan Khadi Facilities to women entrepreneurs.[Schedule-6] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See regulation 41(2)]Syllabus of Diploma in Dialysis TechnologyThe Course shall include the respective subject as given in the table below, the minimum number of hours to be devoted to each subject-lectures and practical shall not be than those noted against them

Sl. No.	Subject	Allotment of Marks in Theory	Oral Practical
(Including Clinical Assessment)			
1	Paper I: Normal Renal Function and itsderangement	100	25 + 75
2	Paper II: Fundamentals of Dialysis Technique	100	25 + 75
3	Paper III: Managing Dialysis Procedure	100	25 + 75
4	Paper IV: Advances in Dialysis	100	25 + 75
Total		400	400

all written examinations shall be of three hours duration

3. Examinations:

Sl. No.	Subject	Allotment of Marks in Theory	Oral Practical
(Including Clinical Assessment)			
1	Paper I: Normal Renal Function and itsderangement	100	25 + 75
2	Paper II: Fundamentals of Dialysis Technique	100	25 + 75
3	Paper III: Managing Dialysis Procedure	100	25 + 75
4	Paper IV: Advances in Dialysis	100	25 + 75
Total		400	400

First YearTheory : 60 Teaching Hours:Anatomy Physiology(Normal kidney structure and functions): 4 hoursDerangement of kidney functions(aetiology, clinical manifestation, diagnosis of acute and chronic renal failure) : 8 hoursDialysis - the concept(Brief history, definition mechanism): 4 hoursComponents of Dialysis(Access, blood flow, anticoagulant, dialsate): 4 hoursHemodialysis - Basics(Blood circuit tubing pump, dialyzer, flow rate, dialysate circuit, concentrates, delivery systems, flow rate): 12 hoursAnticoagulation (Heparin, alternatives to

Heparin, regional no anticoagulation):

8. hours

Vascular access (Temporary, Permanent): 8 hoursDialysis water and water treatment: 4 hoursDialysis and Dialyzer (including reuse): 4 hoursHemodialysis machine : 4 hoursPractical: 180 Teaching Hours:A. Demonstration : (20 x 30 = 60 Teaching Hours)Demonstration of• A Hemodialysis unit• Demineralisation plant• Machine• Intiation of Dialysis• Conduction of Dialysis• Dialysis - closure• Washing, cleaning, reuse• Maintenance of Hygiene in Dialysis unit• Access - core• AnticoagulationB. Actual participation in Dialysis Procedure : 120 Teaching Hours including clinical evaluation of patientSecond YearA. Complications of Hemodialysis : 12 hours• Access related complication• Access related complication• Dialyzer related complication• Dialysate related complication• Anticoagulant related complication• Machine/Blood Pump associated complication• Special type of complication• Maintenance of Hygiene in Dialysis unit• Access - core• AnticoagulationB. Doses of Hemodialysis : 8 hours• Duration, index, clearance• Middle colecules Ura reduction ration• Urea kinetic modeling. Dialysis adeqacyC. Doses of Hemodialysis : 8 hours• Continuous Dialysis : 10 hours• Continuous venovenous hemofiltration• Continuous hemoduafiltration• Continuous slow hemodialysis• Component access, tubing, filter, replacement, fluid, Antigoagulation, flow rateD. Peritoneal Dialysis : 30 hours• History, Perotioneal physiology, kinetics technique, catheter, dialysate fulid, insertion procedure, drainage, complication.• Continuous peritoneal dialysis procedure, dose.Practical: 160 Teaching Hours :• Actual conduction of Hemodialysis : 140 hours• Actual conduction of peritoneal Dialysis : 120 hours• Clinical assessment of patientsList of Books Prescribed• Handbook of DialysisBy John T. Daugirdas (Editor), Peter G. Blalke (Editor), Todd S. Ing (Editor)• Actual conduction of peritoneal Dialysis : 120 hoursBy Judith Z. Kallenbach MSN RN CNN (Author)• Peritoneal Dialysis : From basic concepts to clinical excellenceBy C. Ronco, Carlo Crepaldi, Dinna N, Cruz• Basic Clinical DialysisBy David Harris, Grahame Elder, Lukas Kairaitis, Gopala Rangan• Replacement of Renal Function by DialysisBy John P Meher• Nutritional Considerations in Indian Patients on PDBy Aditi Nayak, Akash Nayak, Mayoor Prabhu and K S Nayak• Chronic Kidney Disease, Dialysis, and TransplantationBY: Mohamed H. Sayegh (Author), Jonathan Himmelfarb (Author), Mohamed Sayegh (Author), Jonathan, M. D. Himmelfarb (Author), Mohamed H., M.D. Sayegh (Author) Publisher : W.B. Saunders Company[Schedule-7] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 41(2)]Syllabus of Diploma in Orthopedic Technology

Paper Code	Subjects
1st Year	
Paper I	Human Anatomy and Physiology
Paper II	Pathology of Muscle Bones
Paper III	Orthopedics and traumatology
Paper IV	Physics of Orthopedic Instrument itsMaintenance
Paper V	Practical Viva Voce

2nd Year

Paper VI	Orthopedic Procedure Implant Technology
Paper VII	Operation room techniques its Management
Paper VIII	Patient Care
Paper IX	Biomechanics Physiotherapy
Paper X	Practical Viva Voce

1st. Year

Paper I - Human Anatomy and PhysiologyIntroduction to the body as a wholeThe ceils, tissues of the bodyThe cell: Structure, multiplication.Tissue: Types, structure, characteristics, functions Epithelium: Simple,CompoundConnective. - Areolar, adipose, fibrous, elastic. Cartilage, blood and boneMuscle. - Striated (Voluntary), Smooth (Involuntary, Cardiac) Nervous tissue Fibrous tissueCell regenerationMembranes: Mucous, Serous, SynovialOsteology (including whole skelton, bones and joints)Development of bone (ostogenesis): Cells invTypes and functions of bone, Types of joints and various movements.AXIAL Skelton:a. Skull: Cranium, face, air sinusesb. Vertebral column: regions, movements and characteristicsc. Sternumd. RibsAppendicular skelton: Bones involving -Shoulder girdle and Upper limb, Pelvic girdle and lower limb, Healing of bones: cellular activity. Factors that delay healing. Diseases of bones and joints. Musculoskeletal System, Anatomy of Joints its function.The Respiratory System:a. Organs: Position and structureb. Nose and nasal cavitiesc. Functions: respiratory. Olfactoryd. Pharynxe. Larynx: Functions - respiratory, vocalf. Trachea, Bronchi, lungs: lobes, lobules, pleuraRespiratory functions: External and internal respiration, common terms relating to disease and conditions of the system,Paper II-Pathology of Muscle Bones Joint ConditionsBackache and NeckacheOrthopaedic Conditions in ChildhoodMinor Adult DisordersCommon FracturesPaper III-Orthopedics and TraumatologyFractures and Dislocation:definition,fractures healing,types of fractures.General principles of treatment,Common fractures of upper and lower extremities.Skull, SpineRadiology - Basic Interpretation SkillsPaper IV-Physics of Orthopedic Instrument its MaintenanceGeneral principles of Operative procedures and orthopedic appliances.Surgical diathermy,Suction machine,OT table,Various lightening systems, Fumigation. Orthopedic Instruments OT table and attachments. Autoclave instrument Handling and careC-Arm Image Intensifier (Conventional Digital)

2nd. Year

Paper VI-Orthopedic Procedure Implant TechnologyHistory of plaster of Paris,Properties of plaster of Paris,Preparation of plaster of Paris bandages.Different types of slabs and casts,Correct method of Appling slabs and casts.Special plasters - FCB, PTB etc.Plaster removal,Plaster cutter and associated instruments.Casting SplintingBraces and TractionTypes of Plaster its advancementDressing and Dressing room techniques:Introduction: general environment and cleanness.Dressing table and trolley, drums: preparation contents and maintenance,Dressing material: types, preparation, use and sterilization.Different types of solutions used for dressing viz hydrogen peroxide, providing Iodine etc.Medicated dressings viz Sofratulley, collagen etc.Basic principles of bandaging.Principles involved in the design, fabrication and use of orthopedic implants.Orthopedic Implant Mechanics and MaterialsBiocompatibility, strength, lubrication and

interfacing.Hip Joint ReplacementKnee Joint ReplacementAnkle Joint ReplacementFractures, Fracture Healing and Non-Surgical FixationSurgical Fracture FixationPaper VII Operation room techniques its ManagementReception of patients in OT premises.Scrubbing, dressing.Tourniquet and it's application.Growing, painting and draping,OT fumigation and UV lights,Autoclaving.Preparation for Anesthesia.Reception of patient.Shifting, positioning for anesthesia,Check out procedure.Sterilization:Definition,Classification of sterilizing agents,Physical methods of sterilization,Importance of sterilization.Sutures:Absorbable: Surgical catgut, collagen sutures, synthetic absorbable utures etc.Nonabsorbable: Silks, cotton, polyamide, polypropylene, stainless steel etc.Paper VIII: - Patient CareFundamentals of patient careDefinition,Introduction: general environment and cleanliness.Proper disposal of ward waste,Beds : bed making, posturing in bed, special beds viz pneumatic, waterbeds.Hygienic care: care of skin, care of hairs and nails, oral hygiene, care of pressure Points. Exercise and activity: Principles of good posturing and body behavior.Moving and lifting patient, posture changes assisting patient in attaining Ambulatory status.Promoting urinary and intestinal eliminations: offering urinal, bedpan.Observations of urine and faeces. Maintaining nutritionMaintaining fluid and electrolyte balance.Maintenance of input/output records.Oral intake measures.Management of acutely injured:First aid,Transport,Resuscitation methods.Infection Control ProceduresLegal Ethical ResponsibilitiesMedical ErrorsPaper IX Biomechanics PhysiotherapyBiomechanics. - Mechanics of the human musculoskeletal system.Biomechanics of Skeletal. - basic properties and mechanics of bone, articular cartilage, tendons and ligaments. Biomechanics of the Lower Limb, major joints of the lower limb. Including the bio-mechanics of walking.Upper Limb and Spine. - detailed examination of the forces acting on the spine during lifting.Physiotherapy of Spine, Upper Limb (Shoulder Joint, Elbow joint, wrist Joint) ,Lower limbs (Knee Joint, Ankle Joint, Phalynges etc.) Rehabitalation of Patient after recovery from trauma/injury/operative procedure.[Schedule-8] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See regulation 41(2)]Syllabus of Diploma in ECG Technology

1st. Year

S. No.	Course Title	Theory (duration/hours week)	Practical (duration /hours week)
1.	Communication skills in English	2	2
2.	Computer Application	2	2
3.	Human Anatomy Physiology	4	-
4.	Clinical Cardiology	4	-
5.	Pathology Terminology	4	-
6.	ECG instrument Maintenance	-	15
7.	Hospital Training or 45 days (After the finalexam)		

Communication skills in English

Unit	Contents
1.	Narration, voice, basic sentence patterns.

2.	Transformation of sentences. Determiners,preposition.
3.	Tense, Common error, (Noun, Pronoun, Articles,Adverbs, Punctuation, Preposition etc.)
4.	Modals in conversation usage, prefix suffixIdioms Phrasal verbs
5.	Composition -1. Unseen passage, precise writing
6.	Letter writing, paragraph writing, reportwriting.
7.	Easy Writing- Essays on General and load topicsrelated to environmental problems

Practicals:We envisage two successive stages for attaining skills in communication ability:

1. Listening:

For improving listening skills the following steps are recommended.• Listen to prerecorded tapes• Reproduce vocally what has been heard• Reproduce in written from• Summarize the text heard• Suggest substitution of words and sentences• Answer questions related to the taped text• Summarize in writing

2. Speaking:

Introducing English consonant - sounds and vowel-sounds.

3. Vocabulary:

» Synonyms Homonyms Antonyms and Homophones» Words often confused as for example, (I-Me, Your - Yours, its- it's comprehensible- comprehensive, complement-compliment)» Context - based meanings for the words, for example,• (Man (N) Man (vb) step (N), step (vb))• (conflict .....Israel- Palestinian conflict, (Emotional conflict, Idieas conflict)• Learn ..... I learn at this school (I Learn from the morning news)

4. Delivering short discourses :

» About oneself» Describing a place, person, object» Describing a picture, photo

5. Group discussion:

» Developing skill to initiate a discussion (how to open)» Snatching initiative from others (watch for weak points etc.)

6. Expand a topic- sentence into 4-5 sentence narrative:

Computer applications:Fundamentals of Computer Science

Unit	Contents
1.	Computer Application- Characteristics ofcomputer, input, output, storage units CPU Computers system.
2.	Computer organization Central Processing unit,Control unit, Arithmetic unit, Instruction set, register.Processor speed
3.	Memory - Main Memory, Storage evaluationcriteria, memory; organization, memory capacity. Random Accessmemories. Read : Only Memory, Secondary storage devices. MagneticDisk, Floppy and Hard Disk, Optical Disks CD-ROM, Mass storagesdevices.
4.	Input devices- Key Board, Mouse trackball.Joystick, scanner, optical mark reader, barcode reader, magneticink character reader, digitizer, Card reader, voice recognition,Web cam. Video cameras
5.	Output- monitors, printers, dot matrix printers,inkjet printers inkjet printers, laser printers, plotters andcomputers out micro files (Com). Multimedia Projector,.
6.	Operative System-Microsoft Windows, An overviewof different version of windows, Basic windows elements. Filemanagements through windows, using essential accessories: systemtools disk cleanup disk defragmenter. Entertainment Games,Calculator, Imagine-Fax, Notepad, Paint. Word Pad, Recycle bin,windows explorer, creating folders icons.
7.	Word processing - Word processing concepts,saving, closing opening and existing documents. Selecting text,edition text, Finding and replacing text, printing documents.Creating and printing merged documents, Mail merge, character andparagraph formatting, page designs and layout. Editing andproofing tools checking and correcting spelling. Handlinggraphics, Creating tables, and charts. Documents templates andwizards.
8.	Presentation package- creating opening andsaving presentation, creating the look of your presentation,working in different views working with slides, adding andformatting text, formatting paragraphs. Checking spelling andcorrecting typing mistakes, making notes pages and handouts.Drawing and working with objectives, adding clip art and otherpicture. Designing slides shows, Running and controlling a slideshow. Printing presentation
9.	Use of internet and Email, Internet, Websites (Internet sites). The Mail protocol suite.
10.	Hospital Management - Types and Uses, Hospitalmanagement System Package, Advanced Hospital managementSystem X O Hospital management System, LCS Hospital Managementinformation System, NVISH Hospital Management System, CSPM-Hospital Management system.

Human Anatomy Physiology

Unit	Contents
1.	The Human Body- Definitions, Sub-divisions ofAnatomy, Terms of location and position, Fundamental planes,vertebrate structure of man, organization of the body cells,Tissues
2.	The Skeletal System - Types of bones, structureand growth of bones, Division of the skeleton Appendicleskeleton, axial skeleton name of all the bones and their parts,Joints classification, types of movements with examples.
3.	Anatomy of Circulatory System- Hearts Size,position coverings, Chambers, Blood supply, never supply, theblood vessels, general plan of circulation, pulmonarycirculation, names of

arteries and veins and their position -lymphatic system general plan

4. Anatomy of the Respiratory System - organs ofrespiratory, larynx, trachea, bronchial tree. Respiratoryportion, pleurae and lungs, Brief ; knowledge of parts andposition.

5. Anatomy of the Digestive system-Components ofDigestive system, Alimentary tube.' anatomy of organs ofdigestive tube, mouth, tongue, tooth, salivary glands, liver,bleary apparatus, pancreas. Names and position and brieffunctions,

6. Anatomy of the Nervous System - Central nervoussystem, the brain, hind brain, midbrain, forebrain, briefstructure, locations, and peripheral nervous spiral card,anatomy, functions, reflex Arc, menage injuries to spinal carvbrain.

7. Anatomy of the endocrine system - name of allendocrine glands their position, hormones, and their functions -pituitary, thyroid, parathyroid adrenal glands gonads isletsof pancreas.

8. Anatomy of Excretory System and reproductivesystem - Kidneys location, gross structure, excretory ducts,urethras, urinary bladder, urethra male reproductive system.Testis, duct system. Females reproductive system, ovaries ductsystem, accessory organs,

9. Blood - Definition, composition, properties andfunction of blood, haemogram (RBC, WBC, Platelet count, HBconcentrations), function of plasma proteins haemopoiesis, bloodGroup -ABO and RH grouping, coagulation Anticoagulants,Anemia causes effects treatment. Body fluid compartments,composition. Immunity Lymphoid tissue, clotting factors,mechanism of blood clotting. Disorders of white blood cells.Disorders of platelets. Disorders of clotting.

10. Cardio vascular system - function ofcardiovascular system, structure of cardiovascular system.Cardiac cycle, functional tissue of heart their function.Cardiac output, E.C.G. Blood pressure, Heart Rate

11. Respiratory system - Function of respiratorysystem, functional (physiological). Anatomy of Respiratorysystem, mechanism of respiration, lung volumes capacities,transport of respiratory gases

12. Digestive system - function of digestive system,functional anatomy of digestive system, composition and functionof all digestive juices, movements of digestive system(intestine). Digestion absorption of carbohydrate, proteinsfats

13. Function of nervous system - neuron - conductionof impulses, factors effecting, synapse transmission, reception,reflexes, ascending tracts, descending tracts, function ofvarious parts of the Brain, cerebro spinal fluid (CSF),composition, function circulation, lumbar puncture.Autonomic nervous system-and its types function of (ANS)

14. Special Senses - Vision - Structure of Eye,Function of different parts Refractive errors of and correction.Visual pathways, color vision tests for color blindness.Hearing, structure and function of ear, mechanism of hearing,test for hearing (deafness)

15. Muscle Nerve Physiology - Type of muscle,structure of skeletal muscle, sarcomee, neuromuscular junctiontransmission, excitation contraction coupling (mechanism ofcontraction

16. Structure and function of skin - bodytemperature, fever regulation of temperature

17. Excretory system - excretory organs, kidneys,function, nephorn, juxta glomerclar apparatus, renal circulation,mechanism of urine formation, mechanism of maturation,cystomatrogram,

	diuretics, artificial kidney
18.	Structure and function of reproductive - Malereproductive system, spermatogenesis, testosterone, femalereproductive system, ovulation, menstrual cycle, cogenesis, testfor ovulation, estrogen progesterone, pregnancy test,parturition, contraceptive, lactation, composition of milk,advantages of breast feeding.

Clinical Cardiology

Unit	Contents
1.	Introduction History of ECG
2.	Cardiac Electrical Activity - ECG (Electrocardiogram), Anatomy orientation of heart. Cardiac cycle.Cardiac impulse formation Conduction, Recording long axiscardiac electrical activity, recording short axis cardiacelectrical activity.
3.	Recording the Electrocardiogram, evolution offrontal plant leads. Transverse plane leads, correctincorrect lead placement. Electrocardiography lead placement,Display of 12 standard electrocardiogram leads
4.	In perpetration of normal ECG, Electro- cardio-graphic features, Rate regularity, P wave, PR interval, QRScomplex, ST segment, T wave, U wave, QTC interval. Cardiacrhythm.
5.	Interval measurement, horizontal measurement,vertical measurement, ECG wave's interval segments
6.	Heart Rate - Introduction, Measuring of heartrates using caliper
7.	Electrical Axis - Determining electrical axis,normal axis, RAD, LAD, Methods of electrical axis estimation.
8.	Assessment of arrthymias. Supraventricular v/sventricular rhythms, Rhythmic Disorders
9.	CAD (Coronary Artery Deases), effects of MIinjury infraction on ECG, manifestation of Q waveinfarction, manifestation of non-Q wave infarction, anteriordinfarction, Antero-Lateral infarction, inferior infarction.
10.	Chamber Enlargement Hypertrophy,Conduction defect, AV block First degree, AV block second degree,AV block third degree, AV block bundle, Branch Block, RBBB, LBBBchamber enlargement, RAE LAE, Hypertrophy, Right ventricularhypertrophy Left ventricular hypertrophy Biventricularhypertrophy

Clinical Cardiology- (Pratical)

Unit	Contents
1.	Basic Principals of instruments. Recording theelectro cardiogram, Correct incorrect lead placement, chestleads, Lims leads, Display of 12 standard lead ECG, Recognitioninterrelation of ECG, Equipment, usage (Pediatrics/Adults.)
2.	Indication, Contraindication, Repairmaintenance, (operations, calibrations) and servicing, ECGMonitoring in ICCU patient. Recording of holter/stress ECG,Ambulatory BP. Monitory, operation of 2-D Echo/M. mode Dopplerand CFM system to its maintenance, operation of TEE and itsmaintenance, ICCU monitoring, practicable in assisting Temporary-pace-maker/ permanent pace maker, coronary Angiography, CoronaryAngio Plasty, Balloon Plasty, CRT, CRTD etc.

Pathology Terminology

Unit	Contents
1.	Introductory Pathology - Cellular adaptation andcell death, inflammation and repair, infection, circulatorydisorders, immune defense, genetics of disease, neoplasia. Cellinjury and adaptation, Atrophy, hypertrophy, metaphase,hyperplasia, classification of tumors, premalignant lesion. Typeof inflammation system manifestations of inflammation.Disorders of vascular flow shock (Brief introduction).Oedema, hyperemia or congestion, thromboses, embolism, infarctionshock, ischemia. Over hydration, Dehydration, The Response toinfection. Categories of infectious agents, host barriers toinfection, how disease is caused, inflammatory response toinfectious agents. Hematopoietic and Lymphoid System, hemorrhage,various type of Anaemia, leucopenia, leucocytosis, bleedingdisorders coagulation mechanism
2.	Fundamentals of Medical Terminology CommonDisease Procedures, Castro intestinal, Chelecystitis,Cholelithiasis, Appendicitis, Intestinal Obstruction, Hernia.Peritonitis, Gastro copy, Endoscopy, Laparotomy, laparoscopy,Common Disease Procedures, Respiratory Tuberculosis,Bronchial Asthma, Respiratory Failure, Pulmonary Emboli Son,Pneumonia, Bronchoscope, Pulmonary Function test, Cardio-Pulmonary, Resuscitation.
3.	Circulatory - Hiypertension, Coronary ArteryDisease. Arrhythmias, Cardiac Arrest, Shock, Deep Vein thrombosis(DVT), ECG, 2D Echo Cardiogram, Coronary Angiography, CardiacCatheterization, Stress test. Pacemaker, Renal, NephroticSyndrome, Urinary Tract Infection Renal/Bladder Stones,Intravenous Pylography, Cystoscopy, Urinalysis, Hoemodialis,Peritoneal Dialysis, Nervous, Stroke (Cerebro Vascular Accident),Brain Tumor, Brain Injuries, Spinal Cord Injuries, LUmbarPuncture, Myelography, CT Scan. MRI, EEG, EMG Oncology,Investigations, tumor markers, RECIST ; Criteria for responseevolution.
4.	Pathology of the Cardiovascular System -Understands common pathological terms used in the description ofheart disease and where applicable, associatedelectrocardiographic features. Knows the meaning of the terms.Atherosclerosis, atheroma, Ischaemia, Angina pectoris. Unstableangina, Prinzmetals angina, ST-elevation and non-ST elevationmyocardial infraction, Acute coronary syndrome, necrosis,hypertension. Atrial and Ventricular septal defects, Cyanosis,Coarctations of the aorta, Valvular stenosis and regurgitation.Pericarditis.

ECG Instrument and Maintenance (Practical)

Unit	Contents
1	ECG Recording, pediatric/adults patient.Operations calibrations and servicing of ECG, Recording ofHolter/stress ECG Monitoring patient in ICCU, Ambulatory B.P.Monitoring, Operations of 2-D Echo/M.Mode Doppler and CFM systemits maintenance. Operations of TEE and its Maintenance, ICCUMonitoring, Other practical in assisting in TemporaryPacemaker/Permanent pace maker
2	Introduction to equipment, Simple usage,Indication Contraindication use. Repair and Maintenance ofequipments. Operations of 2-D Echo/M.Mode doppler and CFM systemits maintenance, ICCU Monitoring

Hospital Training for 45 days after the final examinationIInd Year

Sl. No.	Course Title	Theory (duration/hours week)	Practical (duration/hours week)
1.	Pharmacology	4	-

2.	Electrocardiography Techniques	2	15
3.	Electricity Electrocardiogram	-	15
4.	General Principal of Hospital Practice andpatient care	-	5
5.	Hospital Training for 45 days(After the finalexam)		

Pharmacology:A knowledge of concern disease and drugs where after the structure and function of the heart is essential for instrument technician.» Cardiac Drugs» Effect of drugs and ECG Changes» Toxicity of Drugs and ECG Changes.Electrocardiography Techniques:

Unit	Contents
1	Introduction to Electrocardiography - Historypsychological basis of E.C.G. conduct Velocity ElectrophysiologyCentral of Wilson Augmentation Esophagea lead Pathway ofActivation Vector Concept
2	Normal Electro gram - Atrial Complexes, P-Rinterval, QRS Complex S.T. Segment T- Wavw U-wave Q-T- interval,Electrical Axis, Heart Position Interpretation of an ECG, How torecord and ECG
3	Abnormal Electrocardiogram - Abnormal P-WaveIntraventricular Conduction Defect, RBBB, LBBB, Incomplete, LBB,LAHB, LPPHB, Non Specific Interventricular Condition, DefectBilateral Bundle, Branch Block, Trifasicular Block, WPW Syndrome,LLawn Ganogn, Levine Syndrome, Mahim by pass hypertrophy, RightVentricular Hypertrophy (RBH), Pulmonary embolism, ChronicObstructive lung Disease (COLD), Biventricular Hypertrophy,Overload Concept, Diastolic Overload
4	Coronary artery disease - Ischemia Injuryinfracting subtle atypical non specific Pattern conductiondefects and infraction localization of infraction wrpm and acutemyocardial infarction atrial infraction, VCG in myocardial,infraction atrial infraction, VCG in myocardial, infractioncoronary insufficiency.
5	Exercise test - Type of exercise test,termination exercise, guanidine effect, phenothiazine,Anthracylines, cerebrovascular accident, hypothermia,pericarditis, myocarditis neuromuscular disease, heart traumamalignancy involving heart electrical alter nana negative values,liquid protein diet, anemia etc.
6	Disorder of cardiac rhythm - Disturbance ofimpulse formation disturbances of impulse conduction secondarydisorders of rhythm, physiology of cardiac rhythm, Automacityconductivity A-V nodes sinus rhythm sinus tachycardia sinusbradycardia sinus arrhythmia sino atrial block partial SA blockcomplete SA block causes of Exit block atrial extraystolesBlocked atrial premature beats cause of Atrial Tachycardia (PAT)Chaotic Atria! Rhythm, Atrial flutter atrial fibrillationSupraventricular tachycardia (SVT) ventricular rhythm ventriculartachy cardia (VT) Ventricular fibrillation proarrhythmia;parasystole, group beatig; AV -Disoocation torsade de points sicksinus syndrome.
7	ECG as a clue to clinical diagnosis. Pulmonarystenoriss tricuspid tatresia atrial spetal defect ventricularsptal defect ebstein anomaly correct trtransporation of greatvassel mirro image dextrocards; manomalous brigin of left cornaroartery Rheumatic fever mitrial value prolapsed athetetes cardiacpacing act.

Electricity Electrocardiogram

Unit	Contents
1	Simple electron theory of conductions,Resistane, The Joule the watt. Properties of electric charge.Capacitor, Electronic potential/ potential difference (PD), Typeof AC / DC, Basic of AC Circuits
2	Magnetism/Electro Magnetism/ElectromagneticInduction, Magnetic Poles/fields/ flux and influx density,magnetic field due to a straight and circular coil wire.Relationship of the electrocardiogram to the electrical events ofthe heart. Relationship of the electrical events to themechanical events of the cardiac cycle. Waveform components (P,Q, R, S, T and U), Definitions and normal ranges of PR intervaland QRS duration. Measurement, of QT Interval and calculation ofcorrected QT Interval (QTc) by Bazett.s formula. Calculation ofthe heart rate from the electrocardiogram.
3	The appearance of the normal restingelectrocardiogram, Recognizes the normal variations of theelectrocardiogram in relation to age. State of activity, bodybuild, ethnic, origin. Recognizes the normal electrocardiogramand some common abnormalities:- Rhythms arising from the sinusnode, normal sinus rhythm, sinus arrhythmia, sinus tachycardia,sinus bradycardia, sinus arrest. Supraventricular tachyarrhythmias. Atrial premature contractions (ectopics).Atrial tachycardia, Atrial flutter, atrial fibrillation.Supraventricular tachycardia. Accelerated AV nodal (Junctionalrhythm), Conduction abnormalities. Ventricular pre excitation.Left and right bundle branch block, 1st degree AV block, 2nddegree AV block: (Wenkebach), Mobitz II and 2:1 block, 3rd degree(complete) AV block
4	Rhythms arising from the ventricles. Ventricularescape beats. Ventricular premature beats (estopics) Ventriculartachycardia, Ventricular flutter, ventricular fibrillation,ventricular standstill (asystole). The electrocardiogramassociated with an artificial cardiac pacemaker. Identificationof pacemaker stimulus on the electrocardiogram, differentiationbetween atrial and ventricular pacing, Interpretation of changesin the electrocardiogram arising from abnormal cardiacconditions. Myocardial ischaemia. Myocardial infarction. Leftventricular hypertrophy. Pericarditis, Dextrocardia, EssentialECG Interpretation.
5	This section will comprise of three 12 - leadECG.s taken from the following list -Complete heart block, Leftbundle branch block. Right bundle branch block, ventricularfibrillation. Atrial fibrillation, Ventricular tachycardia.Narrow complex tachycardia. Acute ST elevation myocardialinfarct.
6	Aims and objective of first aids wounds andbleeding dressing and bandage pressure and splints supports etc,shock insensibility, asphyxia convulsions resuscitation, use ofsuction, apparatus, drug reaction, prophylactic, measureadministration of oxygen, electric shock burns, scalds,hemorrhage, pressure points, compression band. Fracture splints.Bandaging, dressing, foreign bodies poisons
7	Infection - Bacteria their nature andappearance, spread of ; infections, spread of infections, autoinfection or cross infection, the inflammatory process, localtissue reaction, general body reaction, ulceration aspect andantisepsis.
8	Department procedures, Department staffing andorganization records relating to patients and departmentalstatistic professional attitude of the technologist to patientand other members of the staff medico legal aspects accident inthe department appointment organization

	minimizing waiting timeout patient and follow up clinic stock taking and stock keeping.
9	Drugs in the department - Storage classificationlabeling and checking regulations regarding dangerous and otherdrugs units of measurement special drugs and depressiveantihypertensive.

General Principal of Hospital Practice and patient care

Unit	Contents
1.	Hospital Procedure - Hospital staffing andorganization, records relating to patients departmental,statistic professional attitude of the technologist to patientand other members of the staff medico legal aspects, accident inthe department, appointment, organization, minimizing waitingtime, outpatient and follow up clinics, stock taking and stockkeeping.
2.	Care of patient - First contact with patients inthe department management of chair and stretcher patients andaids for this management for the unconscious patients elementaryhygiene personal cleanliness hygiene in relation to patient (forexample clean linen and receptacles nursing care temperaturepulse and respiration essential care of the patient who has atracheotomy essential care of the patient who has a colostomybedpans and urinals simple application of a sterile dressing
3.	Aims and objective of first aids wounds andbleeding dressing and bandages pressure and splints supports etcShock insensibility asphyxia convulsions resuscitation use ofsuction apparatus drug reactions prophylactic measureadministration of oxygen electric shock burns scalds hemorrhagepressure points compression band Fracture splints bandagingdressing foreign bodies poisons.
4.	Infection - Bacteria their nature and appearancespread of infections auto infection or cross infection theinflammatory process local tissue reaction general body reactionulceration aspects and antisepsis.
5.	Principles of asepsis Sterilization methods ofsterilization use of central sterile supply department care ofidentification of instruments surgical dressings in common useincluding filament swabs, elementary operating theatre proceduresetting of trays and trolleys in the radiotherapy department.
6.	Departmental procedures: - Department staffingand organization records relating to patients and departmentalstatistic professional attitude of the technologist to patientand other members of the staff medico legal aspects accident inthe department appointment organization minimizing waiting timeout patient and follow up clinic stock taking and stock keeping.
7.	Drugs in the department: - Storageclassification labeling and checking regulations regardingdangerous and other drugs units of measurement special drugs antdepressive antihypertensive etc

Electricity, Cardiography Technique (Practical)

Unit	Contents
1.	Introduction, Instrumentation, Understandsinstrumentation and the basic principles of lead theory neededfor the effective and safe practice of electrocardiography,understands the function of the controls of the E.C.G. machine,Paper speed. Gain Filters, Lead selector, Manual/automaticoperation, understands care of the equipment, Care of recordingpaper.

2.	Battery maintenance. Care of leads and cables,understands electrodes. Application and connection to Electrodepositions. Understands lead system Unipolar and bipolar leads,Einthoven's theory and its application, Wilson's centralterminal. Has language or communication difficulty, is infectiousor is in isolation.
3.	Evaluation of the recording to assess the needfor re-recording, SCST Certificate of Electrocardiography -Syllabus 2010. Re- recording as appropriate. Recognition andelimination or reduction of artifacts, Labeling of completedrecordings as appropriate, cleaning, preparation and storage ofequipment ready for subsequent, Recordings, including correctsterilization and disposal procedures.

Electricity, Electrocardiogram (Practical)

Unit	Contents
1	Introduction to equipment. Simple usage,indication Contraindication use, Repair and Maintenance ofequipments, ECO Recording pediatric/adults patient. Operationscalibrations and servicing of ECG, Recording of holter/stressECG.
2	ECG Monitoring of patient in ICCU, AmbulatoryB.P. Monitoring, Operation of 2-D Echo /M.Mode doppler and CFMsystem its maintenance, operation of TEE and its Maintenance,ICCU Monitoring.
3	Other practical in assisting in TemporaryPacemaker/Permanent Pacemaker, Operation of 2-D Echo/ M.ModeDoppler and CFM system its maintenance, operation of TEE and itsmaintenance, ICCU Monitoring, Other Practical in assisting inTemporary pacemaker/Permanent Pacemaker.

Hospital Training for 45 days after the final examination[Schedule-9] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 41(2)]Syllabus Diploma in Blood Bank TechnologyCourse Curriculum:

Paper Code	Subjects
1st Year	
Paper I	Microbiology Biochemistry
Paper II	Hematology
Paper III	General Immunology
Paper IV	Blood ComponentsBlood Donation
Paper V	Practical Viva Voce
2nd Year	
Paper VI	Transfusion Therapy
Paper VII	Immunohaematology
Paper VIII	Quality Control In Blood Banking LegalAspects.
Paper IX	Recent Advances In Blood Banking Techniques
Paper X	Practical Viva Voce

First YearPaper -1 - Microbiology Biochemistry

1. Introduction to Microbiology, Fundamentals of microscopy, sterilization and disinfection

2. Groups of Micro organisms. Micro organisms staining techniques

3. Bacteriological media. Pure cultures and cultural characteristics, Bacteria of medical importance

4. Transfusion transmitted infections, HCV, HBV, malaria, syphilis

5. ELISA, rapid and other tests for diagnosis of transfusion transmitted infections

6. Nucleic acid testing

7. Biosafety, Management of Biomedical waste.

8. Instrumentation principles: PH meter, colorimeter, Spectrophotometer,

Electrophoresis equipmentPaper - II - Hematology

1. Collection of blood samples, types of anticoagulants

2. Complete hemogram. Different methods of haemoglobin screening/estimation:

Copper sulphate, haematologyanalysers, Sahli's, Cyanmethhemoglobin and Hemocue methods, Red cell indices

3. Normal erythropoiesis, Leucopoiesis, Formation and function of platelets

4. Classification of anaemia, their laboratory diagnosis, Hemoglobinopathy:

Beta Thalassemia and Sickle cell disease, G6PD deficiency, polycythemia

5. Autoimmune hemolytic anaemia, classification,, diagnosis, specificity of autoantibodies

6. Coagulation Mechanism, Hemostasis, laboratory tests for coagulation. Platelet Disorders

7. Haematological malignancies

8. Bone marrow transplantation, peripheral stem cells, cord blood stem cells, cord blood banking

Paper-III General Immunology

1. Introduction to Immunology, History, Immunity

2. Antigens :Immunogen, allo-antigen, soluble antigen. Red cell antigen. Epitopes

3. Antibodies: Polyclonal antibodies, development of antibodies, structure of immunoglobulins, characteristics of immunoglobulins

4. Monoclonal antibodies: Hybridoma technology, Human monoclonal antibodies. Applications of MAb

5. Antigen antibody reaction: Antigen concentration, antibody concentration, enhancing media, other factors influencing antigen antibody reaction. Immunoassays: ELISA,

6. Cells of immune system: Phagocytic cells. Antigen presenting cells, T cells, T cell subsets, B cells, CD Markers, Flow cytometry for counting T B cells

7. Autoimmune disorders

8. Complement System

9. HLA antigens, HLA antibodies, HLA Serology, Histocompatibility matching: Molecular methods

10. Molecular methods in Immunology

Paper - IV- Blood Components Blood Donation

1. Selection of blood bags for component preparation, preparation of red cell concentrate. Fresh Frozen plasma, platelet concentrate, cryoprecipitate, washed red cells. Frozen red cells

2. Plasma Fractionation: Principles, manufacturing of different plasma derivatives

3. Component Testing, Labeling,

4. Transportation and storage of blood components.

5. Prepation of leukoreduced blood products, Leukocyte filters, component extractors.

6. Metabolic changes in blood components during storage, release of cytokine during storage.

7. Inventory management and maintenance of blood stock.

8. Irradiated blood components

9. Blood substitutes

10. Measurement of factor VIII level in FFP

11. Measurement of fibrinogen level in FFP

12. Sterility test on platelet concentrates.

13. Sterility test on Whole blood

14. Measurement of pH and other platelet parameters.

1. Donor Motivation, Motivational Techniques, Social Marketing, Preparation of IEC Materials

2. Donor recruitment Retention: Types of blood donors. Donor selection, medical interview and medical examination, screening for haemoglobin estimation. Managing rejected blood donors, technique for conversion of

first time donor into regular voluntary donor, donor felicitation

3. Blood collection room equipment, their principles, and use, emergency medicines. Pre donation counselling. Bleeding of the donor, post donation care, post donation counselling

4. Screening of blood units for mandatory tests. Discarding infected units,

5. Blood Donation drive: Awareness programs prior to blood donation drive, Camp site, staff requirement, management of camp, transportation of blood units from camp site to blood bank

6. Preservation of donated blood, blood preservation solutions. Additive solutions

7. Apheresis procedures, Apheresis products, preparation of multiple products on cell separators. Maintenance of cell separator equipment

8. Autologous blood donation

Paper -VI - Transfusion Therapy

1. Management of Blood Bank Issue Counter, Criteria for acceptance of requisition form, inspection of blood component prior to issue.

2. Blood administration, transfusion filters, post transfusion care. Therapeutic plasma exchange

3. Judicious use of blood; management of different types of anemia, management of bleeding patient. Neonatal transfusion, Transfusion practices in surgery. Transfusion therapy for oncology and transplantation patents.

4. Hemolytic transfusion reaction immediate and delayed; immune and non immune reaction path physiology; Clinical signs and symptoms Laboratory invigilation for HTR Tests to defect bacterial Contamination in blood,

5. Non-hemolytic transfusion reactions Immediate and delayed, febrile reaction, allergic reaction, clinical signs and symptoms.

6. Acute transfusion related lung injury, alloimmunization. Iron overload. Graft versus host disease.

7. Strategies to prevent transfusion reactions

Paper - VII - Immunohaematology

1. Basic Principles of immunohaematology. Application of Blood groups: Population Genetics, Forensic medicine. Transfusion medicine

2. ABO Blood of Group Systems: History, Genetics, ABH antigens, Biochemical Synthesis of blood group antigens. Antigenic sites, weaker variants, Bombay Phenotype, ABO antibodies,

3. Rh Blood Group System: History, Genetics, Molecular Genetics, Nature of Rh Antigens, Partial D, Week D, other variants of Rh, Rh Null, Rh antibodies,factors influencing Rh immunization. Functional role of Rh antigens

4. Other Blood Group Systems: Lewis, P, Ii, MNSs, Kell, Duffy, Celano, In, Private antigens, Public antigens.

5. Antenatal Serology, Hemolytic disease of the newborn due to ABO, Incompatibility, Rh Incompatibility and other allo-antibodies

6. Red cell serology techniques, their advantages and disadvantages. Cell and serum grouping, detection of weak A and B antigens and weak D/Partial D cases, Trouble shooting in red cell serology

7. Pre transfusion testing. Different methods of cross matching, cross matching in special circumstances, emergency cross matching, electronic cross matching

8. Principles of Direct and indirect antiglobulin test, enzyme technique, albumins technique. Detection of blood group antibodies, identification of their Specificity, clinical significance of antibody detection, differentiation between auto and allow-antibodies

9. Gel Technology, Micro plate technique

Paper - VIII - Quality Control In Blood Banking And Legal Aspects

1. Quality control of blood grouping reagents, QC of anti-human globulin reagent, bovine albumin, Normal saline

2. Quality control of blood bags

3. Quality control of different blood bank Components, sterility test on component.

4. Automation in blood banking

5. Calibration, validation and maintenance of blood bank equipment, QC of blood bank techniques, internal and external QC.

6. Organization of blood bank services. Blood Bank premises and infrastructure, Regional blood transfusion centre and blood storage centres. Blood bank management system

7. Regulations for blood bank operation: Drugs and cosmetics Law, National blood policy, standards in Blood Banking, licensing procedures.

8. Recruitment and training of blood bank personnel. Proficiency testing.

9. Blood Bank Accreditation.

Paper - IX - Recent Advances In Blood Banking Techniques

1. Automation in Blood Banking

2. Nucleic Acid Testing

3. Apheresis

4. Stem Cells

Reference Books:

1. Modern Blood Banking and Transfusion practices by Denise M Harmening, 5th edi

2. Transfusion Medicine technical manual-DGHS, Ministry of Health and Family Welfare, Govt, of India, Second edition, 2003

3. Blood transfusion in clinical medicine by PL Mollison

4. AABB Technical Manual, 17th ed, AABB

5. Compendium of transfusion medicine, RN Makroo

6. Practical Hematology, J A Dacie and S M Lewis

7. Basic Immunology, A k Abbas and A H Lichtman. Second ed, Saunders Elsevier.

8. Essential Immunology. I Roitt, 8th ed, Blackwell scientific publications

9. Basic molecular and cell biology. David Latchman. BMJ Publishing group, 1997.

10. Voluntary blood donation program NACO, Ministry of Health and Family Welfare, Govt, of India, New Delhi, 2007.

11. National guide book in blood donor motivation. NACO, Ministry of Health and Family Welfare, Govt, of India.

12. Standards for blood banks and blood transfusion services, NACO, Ministry of Health and Family Welfare, Govt, of India, New Delhi 2007.

[Schedule-10] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 41(2)]Syllabus of Diploma in Endoscopy Technology

Paper Code	Subjects
1st Year	
Paper I	Anatomy Physiology
Paper II	Pathology And Microbiology Git
Paper III	Physics of Endoscopic Instruments ItsMaintenance

Paper IV	Preparation For Endoscopic Procedure
Paper V	Practical Viva Voce
2nd Year	
Paper VI	Patient Care
Paper VII	Basic Endoscopic Procedure
Paper VIII	Advanced Endoscopic Procedure
Paper IX	Endoscopy OT administration, design,documentation, medico legal, record keeping, IT
Paper X	Practical Viva Voce

Paper I Anatomy Physiology:Introduction to the body as a wholeThe cells, tissues of the bodyThe cell: Structure, multiplication.Tissue: Types, structure, characteristics, functionsEpithelium: Simple, CompoundConnective: Areolar, adipose, fibrous, elastic. Cartilage, blood and boneMuscle: Striated (Voluntary), Smooth (Involuntary, Cardiac)Nervous tissueFibrous tissueCell regenerationMembranes: Mucous. Serous, SynovialMusculoskeletal SystemThe Respiratory System:a. Organs: Position and structureb. Nose and nasal cavitiesc. Functions: respiratory, Olfactoryd. Pharynxe. Larynx: Functions - respiratory, vocalf. Trachea, Bronchi, lungs: lobes, lobules, pleuraRespiratory functions : External and internal respiration, common terms relating to disease and conditions of the system.Anatomy of the esophagus, stomach, duodenum, small bowel.Anatomy of abdomen, omentum, colon, rectum and anal canal.Physiology Mechanism of stomach and intestinal secretion. Function of stomach, duodenum and gallbladder.Physiology function of liver, spleen, colon and rectum. Physiology of defecation.Paper II Pathology and Microbiology For Git:General lectures on micro-organisms- Classification/shapes/ Sterilisation and asepsis.Infection- source of infection, , spread of infection, various pathogenic bacteria, viruses and diseases caused by them (gastritis, enteritis, enterocolitis,colitis, etc)Pathology - General- Cell injury and adaptation, inflammation and repair, fluid and hemodynamic derangement in vomiting and diarrhoea.Pathology of the gastrointestinal tract and genital system. IBS, IBD, koch's abdomen.Common Diseases of Upper GI Tract, Dysphagia, Achalasia, Cancer of the esophagus, Diverticulae, T-O Fistulas, Bleeding lesions of the esophagus (Varices, Mallorie Weis Tears)Polyps of stomach, gastric cancer, duodenal ulcers, Bleedinglesions, Helicobacter Pylorie infection and Antral GastritisCommon diseases of the colon, cancer colon, polyps, diverticulae, granulomatous colitis, Ulcerative colitis,Crohn's Disease, Functional diseases, bening stricturres of the colon.Diseases of Billiary tract, Stones Tumors, Gall Bladder stone and Cancer sequelaePancreatic diseases needing the ERCP procedurePaper III-Physics of Endoscopic Instruments Its Maintenance:Layout of Endoscopy theatrePrinciple Working of GI Scope,Principle Working of Colonoscopy.Principle Working of Bronchoscope,Principle Working of esophagoscopePrinciple Working of Fibre optic laryngoscope, sinoscope, basic laparoscopeUse, care, maintenance of the common types of Instruments, needles, suture and ligatures used in operation theatreBasic endoscopy unit - forward viewing, single channel and double channel endoscopy and Specific instruments used in endoscopic and colonoscopy proceduresBio hazards and safety in medical devicesBasics of Video endoscopy Instrumentation, Mechanics,Mechanics, Magnification etc.C-Arm Image IntensifierPaper IV Prepration For Endoscopic Procedure:Cleanliness and sterilization of ER/ operation theatre and annexes Fumigation, Asepsis in endoscopy rooms Fumigation continuedPrinciples of sterilization, modes of sterilization including autoclaving.Pressure sterilization, boiling, dry heat, gas chemical sterilization, Gamma raysterilization.Lighting in E.T. including emergency lightingHelping

endoscopist and others to wash up and drape for operation.holding out cap, mask, gown and gloves for endoscopist and others and handlingof sterilized articles.Washing, cleaning, testing and repairing of gloves and sorting -themout for packing and sterilizationPreparation of dressings, swabs and packs packing of drums and sterilization.Use, care, and sterilisation of the common types ofinstruments, needles, suture and ligatures used in operation theatre.Procedure for sending specimen for biopsy and fluid for culture.Identification of instruments for common Endoscopic procedures operations and examinations, such as: - GI Scopy, Colonoscopy, Bronchoscopy, esophagoscopy.Fibre optic laryngoscopy, sinoscopy, basic laparoscopy.Setting up of tray/ trolleys for various endoscopic procedures /surgeries.Assisting the scrub surgeonScrubbing, gloving gowningLaying tables for endoscopicEndoscopy OT Stores - Indenting, storekeeping, accounting and audit.Inventory Management.Setting up of table for various diagnostic and therapeutic proceduresPatient Care:Patient Preparation for different endoscopic examinationSpecial Precaution in handlings patients with sepsis, blood borne infection -Hep.B, HCV, HIV etc - Cleaning and disinfection of the articles and endoscopy room (with special reference to HIV, HBV HCV) Terminal disinfection of endoscopy roomPreparation of patient including transfer positioning of the patientElective and emergency procedures.Observation monitoring the patient in recovery roomPaper VII Basic Endoscopic Procedure :Assisting the endoscopist in various endoscopic and colonoscopic procedure Like : - Herniorrhapy: inguinal, epigastric, femoral, paraumbilical Abdominal LaparotomyLaparoscopy: cholecystectomy, appendicectomyVagotomy and Pyloroplasty, Gastrostomy, Ileostomy, Colostomy AppendicectomyColonoscopy - EndoscopyDiagnostic endocopic procedure- giving oral anaesthetic agent, Diagnostic colonoscopic procedure-Assisting the anesthesiologist for induction of anaesthesia and positioning the patient Biopsy, Injection Sclerotherapy, Gastric Biopsy, Basics of Laparoscopy, Instrumentation, Technique Introduction to rigid scope, mechanics EtcCommon Laparoscopic procedures, Appendix, Cholecystectomy EtcPaper VIII- Advanced Endoscopic Procedure :Assisting the endoscopist in various endoscopic and colonoscopic procedures like Introduction to ERCP suiteManagement: Organisation of Hospital - Organisation of ERCF rooms - Single and Multiple units - Elective and emergency procedures.Principles of Surgical Asepsis and ERCP Room: - Preparation of tables, equipments, instruments for the procedure - Care of ERCP room - before, during after the procedure -Special Precaution in handlings patients with sepsis, blood borne infection - Hep.B, HCV, HIV etc - Cleaning and disinfection of the articles and ERC? room (with special reference to HIV. HBV HCV).ERCP Room equipments,Instruments and Maintenance: Basic ERCP unit - side viewing scope. C-arm facility- recording and documentation of interesting procedure. Specific instruments used diagnostic and therapeutic procedures- various sphincterotomes, guide wires, balloon dilators, baskets, lithotripsy handling,- various types of stents- plastic and metal.Diagnostic ERCP procedures- preparation of patient including transfer positioning of the patient. Assisting the anesthesiologist for induction of anaesthesia and positioning the patient.Assisting the endoscopist in various diagnostic ERCP procedures.Therapeutic ERCP procedures-Assisting endoscopist for CBD stone removal, CBD and CHD stricture management, plastic and metal stent placement, getting tissue biopsy and brush cytology. Pancreatic stent placement.Maintaining Patient Safety and Comfort in ERCP room: Prevention of physical, electrical, chemical injuries/hazards to patient - Maintenance of interpersonal relationship.Pancreatectomy, Drainage of pancreatic Cyst(pseudocyst), Resections of Small Bowel, Sigmoid Colon andrectum; Hemi total Colectomy; Colostomy: Closureof colostomy, Rectopexy abdominoperineal resection. Drainage of abscess (es) in

the region of the liver, Hepatic Resection, liver transplant,Splenectomy; L-R Shunt,Esophageal Varices, Gastric Varices,Indications of Treatement of Bleeding lesions in the esophagus.GlueInjection and EVLGastric Polyp resection. Percutaneous Endoscopic Gastrostomy, Percuataneous JejunostomyDilatation of strictures of esophagus. Balloon, bougies, CRE Balloons ETCBasic ERCP Procedure, Premedication, position, stone retrieval andPlacement of stent, removal of stones form PD and CBDGastroduodental stentingDouble balloon enteroscopy, capsule endoscopy, Differnet types of capsulesColonoscopic Polypectomy Colonic dilatation of strictures by BalloonPlacement of Expansile stents in colo-rectumEmergency de-rotation of colon in sigmoid volvulusAdvanced lap Surgery, Lap Liver resections etc.Therapeutic endoscopic and colonoscopic procedure- initial resustation of the patient- knowing about EVL and EST and assisting the endoscopist assisting the endoscopist in endoscopic and colonoscopicpolypectomy, APC and FB removal.Maintaining Patient Safety and Comfort in ER: Prevention of physical, electrical, chemical injuries/hazards to patient - Maintenance of interpersonal relationship. Orientation to legal ethical issues involved in endoscopic room technique.Paper IX - Endoscopy OT administration, design,documentation, medico legal, record keeping, ITOrganization of Hospital - Organization of Endoscopy rooms -Single and Multiple theatre units - Elective and emergency endoscopies, ambulatory surgeryAdmission Transfer procedure; maintenance of Operative RecordsCommunication and health care provider - patient relationship. Methods of Effective Communication, Attending skills, Rapport building skills, Empathy skills. Barriers to effective communicationManagement, need for scientific managements, delegation, decision makingSupervision -techniquesAssignments-Individual and team functionHuman relations, public relations, planning of courses blockEthical and legal issues in Operation theatre and anesthesiaReference Books:

1. Williams PL, Warwick R, Dyson M, Bannister LH (eds) Gray's Anatomy. 36th edition. Churchill Living stone, New York, 1980.

2. Human anatomy Regional and applied Volume - 1 - B.D Chaurasia's, 3rd CBS Publishers and distributions New Delhi, 1995.

3. Text book of Medical Physiology - Arthur C. Guyton, John E. Hall, 9th edition W.B.

4. Saunders Company U.S.A 1996.

5. Essentials of Medical physiology - Anil Baransinghamahapatra, 1st edition current Books international Mumbai. 1998.

6. Clinical Anatomy for Medical students - Richard s. Snell, 5th edition Little, Brown and

7. Company. U.S.A 1992.

Pathology:

1. Fletcher: Diagnostic Histopathology of Tumours - Christopher DM Fletcher 2007 (3rd edition)

2. Lakhani: Basic Pathology: An Introduction to the Mechanisms of Disease - Sunil R

3. Lakhani, Susan A Dilly, Caroline J Finalyson and AhmetDogen 2003 (3rd ed),

4. Appleton Lange's Review of Microbiology Immunology -Dr William W Yotis,

5. Tadayo Hashimoto, Harnold J. Blumenthal - 1997.

6. Medical Microbiology - Michael A. P Faller, Patrick R.Murray, Ken S. Rosenthal

7. Practical gastrointestinal endoscopy the fundamentals - Peter B . Cotton

8. Introduction to Operating room Technique - Kandaswami

9. Theatre Technique - Dixon Eileen

10. Fundamentals of Operation Theatre Service - T.K.Datta

11. Sages manual perioperative care in minimally invasive surgery. Richard 1. Whelan, James w. fleshman, Dennis L. fowler. Springer edition

[Schedule-11] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 41(2)]Syllabus of Diploma in E.E.G. TechnologyFirst YearPaper First

1. Study of General Anatomy and Physiology of Human Body

Paper Second

1. Clinical:

(A)Seizure disorder and its differential diagnosis(B)(i)Normal EEG pattern in children and adult, awake and sleep.(ii)Neonantal EEG(iii)Normal variants(iv)Artifacts : Eye movements, muscle pulse(v)Activation methods: Hyperventilation, photic stimulation, sleep deprivation, others(vi)Abnormal EEG records, definition-spike, sharp, slow waves, other abnormalities(vii)Abnormal EEG in neurological diseasesviii) Brain death

2. Technical Aspects:

(i)Different parts of EEG machine and its functions, i.e. montage, electrodes, filter, calibration, sphenoidal electrode, depth electrodes.(ii)Electroencephalographic monitoring (in patients and ambulatory). Video Electroencephalography, Intraoperative records. Quantitative electroencephalography. Brain mapping and others (in brief).(iii)Electroencephalographer's reporting(iv)Record keeping.Second YearPaper First

1. Neuro-Anatomy:

Muscle : Origin, insertion, nerve supply, structureNerve : Course-cranial and peripheral, structure

2. Neuro-Physiology:

Muscle :(i)Functions of muscles(ii)Muscle contractions(iii)Electrical properties of musclesNurve:(i)Functions of nerve(ii)Electrical properties of nerve.Near filed potential and Far field potential(iii)Nerve conduction(iv)Neuromuscular junction and neurotransmitters

3. Neuro-Pathology:

Muscle : Pathological changes in muscles(i)Primary muscle disease(ii)Injury(iii)Metabolic(iv)Inflammatory(v)Others(vi)Neurogenic muscle involvement(vii)Neuromuscular junction abnormalitiesNurve:(i)Demyelination(ii)AxonopathyPaper SecondClinical:

1. Nerve:

(a)Disease affecting cranial and peripherals(i)Bells play(ii)Peripheral neuropathy(iii)Entrapment neuropathy(b)Basic principles of nerve conduction study (NCS)(i)Motor NCS(ii)Sensory NCS(iii)F-ware(iv)H-reflex(v)Blink reflex and others(vi)Repetitive nerve stimulation(vii)Abnormalities in disease(viii)Central motor conduction

2. Muscle:

(a)Disease of muscle and neuromuscular junctions(b)Normal EMG recording-Resting/Insertional activity/Volitional recruitmentpattern, Interference pattern.(c)Abnormal EMG -(i)Myopathies(ii)Neurogenic muscle involvement(iii)Involuntary muscle contractions(iv)Neuromuscular transmission disorder(d)Needle EMG - Conventional, Macro EMG. Surface EMG, single fibre EMG

3. Evoked potential studies:

(i)Visual evoked potential(ii)Brainstem auditory evoked potential(iii)Somatosensory evoked potential

4. Instruments:

(i)Basic knowledge about the machines(ii)Electrodes(iii)Electrode impedance(iv)Identification of wave pattern(v)Artifacts(vi)Normal laboratory values(vii)Electromyography reporting(viii)Record keeping

5. Polysomnographic studies - Normal sleep and sleep disorder (in brief)

[Schedule-12] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 41(2)]Syllabus of Diploma in Cath Lab Technology

1st. Year

SI. No.	Subject to be taught	No. of lecturers including demonstration
1.	Basic Anatomv	20
2.	Physiology Pathology	15
3.	Pharmacology	10
4.	Preventive Cardiology	05
5.	Microbiology	10
Total	60	
Practical Training	150	

IInd Year

SI. No.	Subject to be taught	No. of lecturers including demonstration
1.	Radiology	20
2.	ECG	30
3.	Defibrillation	15
4.	Diseasee of Heart	25
5.	Catheters and Instruments	20

Total	110
Practical Training	150

1st. year examination: -

The examination will be conducted according to the following table.

SI. No.	Subject of Examination	Total marks for Theory	Total marks for Oral	Total marks for Practical
1.	Anatomy	100	25	75
2.	Physiology	100	25	75
3.	Pharmacology	100	25	75
4.	Preventive Cardiology	100	25	75
5.	Microbiology	100	25	75

3. All written examinations shall be of three hours duration and the number of papers each subject shall be as mentioned above

4. IInd year examination: -

SI. No.	Subject of Examination	Total marks for Theory	Total marks for Oral	Total marks for Practical
1.	Radiology	100	25	75
2.	ECG	100	25	75
3.	Defibrillation	100	25	75
4.	Diseasee of Heart	100	25	75
5.	Catheters and Instruments	100	25	75

Syllabus

1st. year

Anatomy:

01. Basic cells and tissues

02. Heart: Pericardium, chambers, valves, conduction systems great vessels

03. Circulation: Major arteries and veins

04. Lungs and pleura, diaphragm

05. Liver, Spleen, Kidney, Brain

Physiology:

01. Circulatory systems

02. Autonomic nervous system

03. Action potential muscles contraction

04. Gas exchange

05. Thrombosis, platelet function

06. Renin angiotensin system

07. Kidney: Physiology

Pharmacology:

01. General Pharmacology

02. Sedatives

03. Anaesthetics agents

04. Analgesics

05. Drugs used for heart disease: Antianginal, Antiarrhythmic, anti failure, vessopressor, vasodilators, cardiac imaging agents, anti thrombotics

Preventive Cardiology (Patient care Hospital Practice):

01. Diat and Nutrition

02. Smoking

03. Exercise and heart

Microbiology:

01. Specimen collection: Blood, urine sputum, etc.

02. Bacteria and viruses in CVS

03. Serology and immunology

SyllabusIInd yearRadiology (Basic phy of radiology)

01. Principles of X-ray

02. Protection form radiation

03. Description and recognition of Chest X-Rays

04. Different Views of chest for identification of cardiopulmonary structures

05. Ultrasonography: Principles

06. Basic of Echocardiography

ECG:

01. ECG machine: Parts

02. Technical of taking an ECG

03. Pitfalls in taking ECGs

04. Recognition of normal ECG waves

05. Abnormal

ECG Defibrillation:

01. Technique

02. Indication

03. Complications

Diseases of Heart:

01. Congenital

02. Rheumatic

03. Myocardial and pericardial

04. Coronary artery diseases

05. Hypertension

06. Pulmonary thromboembolism and pulmonary hypertension

07. Respiratory failure

Catheters and Instruments:

01. Arterial Blood Gases: Technique and interpretation

02. Haemodynamic monitoring Technique, recognition, indication, complications.

03. Fluid and electrolytes

04. X-ray imaging in lab

05. Intra Aortic Ballon Pulsation: Indication, Technique and complications

06. Artificial ventilation

07. Extra corporeal Membrane Oxygenator

08. afferent views of cardiac catheterization

09. transducer, outline of C-arm, cineangio machine oxymetry

List of Books prescribed• Invasive Cardiology: A Manual for Cath Lab Personnel - Jones Bartlett• Invasive Cardiology: A Manual for Cath Lab Personnel -Watson• The Cardiac Catheterization Handbook- Morton J. Kern• The Interventional Cardiac Catheterization Handbook- Morton J. Kern• Complications in the Cath Lab: Risk Factors, Management and Bailout Techniques - Mauro Moscucci• Cardiac Catheterization in Congenital Heart Disease: Pediatric and Adult - Charles E. Mullins[Schedule-13] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 41(2)1]Syllabus of Diploma in Emergency and Trauma Care TechnologyTeaching and ExaminationScheme - 1st Year

S.No.	Subject:	Distribution of time		Distribution of marks				
Hours per week	Exam							
Th	PR	T	Th	PR	Viva voce	Total		
1.	Anatomy, Physiology, PathologyPharmacology	1	-	1	100	-	-	100
2.	Medical Emergencies I	1	-	1	100	-	-	100
3.	EMS Environment I	1	-	1	100	-	-	100
4.	Emergency in body systems I	1	-	1	100	-	-	100
5.	Ambulance Simulator I	-	32	32		75	25	100
6.	Clinical Rotations I (Sessional)	-	-	-	100	-	-	100
	Total	4	32	36				600

Teaching and ExaminationScheme - IInd year

S.No.	Subject:	Distribution of time		Distribution of marks				
Hours per week	Exam							
Th	PR	T	Th	PR	Viva voce	Total		
1.	EMS Environment II	1		1	100			100
2.	Medical Emergencies I	1	-	1	100	-	-	100
3.	Management of Medical Emergencies	1	-	1	100	-	-	100
4.	Awareness in Medical Emergencies	1		1	100	-	-	100

5.	Ambulance Internship and Ambulance Simulator II	-	32	32	75	25		100
6.	Clinical Rotations II	-	-	-	100	-	-	100
	Total	4	32	36				600

Course Components-First Year (Cognitive and Psychomotor)Preparatory:- EMT Core Trainin- EMS Systems, Roles and Responsibilities (EMT and Paramedic)-The Well-Being of the Paramedi- Illness and Injury Prevention-Medical and Legal Issues- Ethical Issues- Pathophysiology-Pharmacology-Vascular Access and Medication Administration-Human Development- Patient Communication-Airway- Airway Management and Ventilation Patient- Assessment:- Patient History- Physical Examination-Patient Assessment- Critical Thinking and Clinical Decision making-Communications and Documentation Trauma:- Trauma Systems and Mechanism of Injury-Bleeding and Shock-Burns- Head and Face Injuries-Spine Injuries- Thoracic Injuries-Abdomen Injuries- Musculo-Skeletal- Injuries- Medical:- Respiratory Emergencies- Cardiovascular Emergencies-Neurologic Emergencies- Endocrine Emergencies- Gastrointestinal Emergencies- Renal and Urologic Emergencies-Allergic Reactions- Toxicology (Substance Abuse and Poisoning)-Hematologic Emergencies- Environmental Emergencies- Infectious and Communicable Disease-Behavioral Emergencies.- Gynecologic Emergencies - Obstetrics- Clinical Rotations 1- Ambulance Simulator 1Course Components-Second Year (Cognitive and Psychomotor)Special Considerations:-Neonatology-Pediatrics- Geriatrics- Abuse, Neglect and Assault-Patients With Special Needs- Acute Interventions for the Chronic Care PatientsOperations:- Ambulance Operations- Medical Incident Command- Terrorism and Weapons of Mass Destruction-Rescue]- Awareness and Operations-Hazardous Materials Incidents-Crime Scene AwarenessSurgical Knots and Suturing Techniques:-Basic Sterile Technique- Two-Handed Square Knot- Instrument Tie Square Knot-Suture materials-Surgical Needles- Suturing Methods-Suture Patterns- Removing SuturesSonography Ultrasound-Basic Operation and Interpretation AHA Basic Life SupportAHA Advanced Cardiac Life SupportAHA Pediatric Advanced Life SupportPre-Hospital Trauma Life Support/Combat and Tactical Medicine ConceptsCEVO-Coaching Emergency Vehicle Operator (Ambulance)Hazardous Materials AwarenessVehicle Extrication ConceptsTechnical Rescue AwarenessClinical Rotations 2-Ambulance Ride Along/Internship Part I and Part II- Ambulance Simulator 2Skills proficiency assessments:EMT/Basic Core Proficiency Skills:Baseline Vital Signs with Samplehistory radio report BVMventilation-adult, child, infantOral suctioning-adult, child, infantCPR-one rescuer with atleast 90% proficiency in ventilations/compressions Oxygen administration-NC, NRB, pulse oximetry (SpO2 monitoring), and capnography (etCO2 monitoring)Bleeding/Hemorrhage management (Quik Clot and CAT) LSB, KED, Traction SplintPatient Assessment: Medical Assessment Trauma AssessmentAirway Management Skills:ETT-adult, pediatric (child and infant) King Airway-adultLMA-adultI Gel-adult and pediatric Tracheal suctioning Surgical cricothyrotomy Transport ventilator Needle chest decompressionIV/Medication Shills:Blood draw with vaccutainerdevice Blood draw with butter flyneedle Blood draw withsyringe/OTN catheterIV start-peripheralIV medication administration-piggy back in fusion IVmedication administration-3ways to peacockMedication administration -subcutaneous, intramuscular, IVbolus, nebulizerAdvanced/Specialized Shills:Sutures UltrasoundAccident Vehicle Patient Extrication (Avet/phtls)First Year-Subjects Division

1. Human Systems Assessment P-I Anatomy, Physiology,

			pathologypharmacology
2.	Pharmacology		
3.	EMT Core Training (incl. AHABLS, CEVO, andPHTLS) EMS Environment I	P-II	EMS Environment I
4.	Shock and Fluid Therapy	P-III	Emergency in body systems
5.	Emergency Cardiac Care		
6.	Emergency Respiratory Care		
7.	Traumatology	P-IV	Medical Emergencies 1
8.	Medical Emergencies I		
9.	Ambulance Simulator I	PRS	
10.	Clinical Rotations I		

Second Year Subjects Division:

1.	EMS Environment 11	P-I	EMS Environment II
2.	ACLS, PALS, AMLS, EPC, and PHTLS (Review)		
3.	Medical Emergencies II	P-II	Medical Emergencies I
4.	Wilderness and Rescue Medicine		
5.	Assessment Based Management	P-III	Management of Medical Emergencies
6.	Suture Techniques		
7.	Ultrasound (Basic)		
8.	Hazardous Materials Awareness	P-IV	Awareness in medical emergencies
9.	Technical Rescue Awareness		
10.	Clinical Rotations II	PRS	
11.	Ambulance Internship		
12.	Ambulance Simulator II		

Manuals/books:"Emergency Care and Transportation of the Sick and Injured", Tenth Edition, AAOS Emergency Medical Technician Transition Manual, AAOSNancy Caroline'sEmergency Care in the Streets, AAOS, Sixth Edition Hole's Human Anatomy Physiology, Thirteen EditionAhabls for the Health care Provider Wilderness and Rescue Medicine,Sixth Edition, Jones Bartlett Learning"Basic Ultrasound" by Hylton B 'Meire and Pat Farrant"Surgical Knots and Suturing Techniques", F.D. Giddings, Second EditionFirst Year-Subjects Division:EMT Core Training (including AHABLS, CEVO, and PHTLS) Basic Emergency Medical Technician Course based on "Emergency-Care and Transportation of the Sick and Injured", Tenth Edition, AAOSEMS Environment IAn overview of Emergency Medical Systems in the US and around the world; focusing on professionalism, responsibility, development, improvement and community involvement; and also emphasizing the ethical and legal aspects of Emergency Medical Systems including mal practice, consent, and contracts.Human Systems AssessmentPatient history, charting, and physical examination skills, with emphasis on directing, defining, and describing normal and pathological human body conditions.Shock and Fluid TherapyUnderstanding and management of the body system's reaction to decre as edcellularoxy generation. Body fluids, osmosis, and pathophysiology of in adequate tissue perfusion. Shock therapy and intravenous/intraoseous techniques are emphasized.Emergency

Cardiac CareEtiology, pathophysiology, clinical features, cardiac disease processes, and assessment of patients with cardiac disorders (ACLS algorithms, skills, and techniques), with focus on the interpretation of cardiac dysrhythmia, clinical signs and symptoms of cardiac conditions, indications and administration of emergency cardiac therapy along with defibrillation, synchronized cardio version, and transcutaneous pacing skills.PharmacologyClinical pharmacology, classification and use of medications. Emphasis on the proper indications, precautions, dosages, and methods/routes of administration. Includes dosage calculations, metric conversions, and infusioncal culations.Emergency Respiratory CareCare of patients with respiratory disorders; the etiology and pathophysiology of the respiratory system, normal respiratory function and mechanics of respirations. Assessment, pathophysiology of respiratory disease, evaluation and management of respiratory distress due to medical and trauma-related problems, with emphasis on the uses and techniques of supra-glottic, endotracheal, and surgical airways.TraumatologyManagement and treatment of traumatic injuries including of tissues, musculo skeletal structures, neurologic and CNS (Central Nervous System). Anatomy and pathophysiology, assessment, and management of traumatic injuries involving these human systems (including principles of PHTLS).Medical Emergencies IRecognition, management, and pathophysiology of patients with medical emergencies. This module will focus main lyondiabetic emergencies, an aphylaxis and an aphylactic shock, exposure to environmental extremes, alcoholism, poisoning, acute GI problems, genit our in any problems and medical emergencies of the geriatric population.Clinical Rotations ISupervised rotations through hospital clinical areas. Emphasis on airway management, IV therapy, and patient assessment skills.Ambulance Simulator IIntroduction to Sim-Man (mannequin) and to the ambulance simulator; basic and intermediate scenarios, working with ALS (Advanced Life Support).Second Year-Subjects Division:EMS Environment IIGuided practice with emphasis on disaster management, MCI (Multi Casualty Incidents) triage, EMS telemetry and communications, stress management, and emergency rescue extrication techniques (applied concepts of Accident Victim Extrication Techniques and PHTLS).Medical Emergencies IIRecognition, pathophysiology, proper implementation of protocols and management of patients with medical emergencies. This module will include infectious disease, OB- GYN, pediatrics, and behavioral emergencies.ACLS, PALS, AMLS, EPC, and PHTLS (Review) American Heart Association and NAEMT Wilderness and Rescue Medicine "Wilderness and Rescue Medicine" Jeffrey E. Isaac, PA C and David E. Johnson, MD Sixth EditionAssessment Based ManagementIntegrates the principles of assessment- based management. This module will emphasize general approach, assessment, differentials (diagnostics), and management priorities for patients commonly encountered by the paramedic.Suture Techniques"Surgical Knots and Suturing Techniques", F.D, Giddings, Second Edition, Giddings Studio Publishing, Fort Collins Colorado, 2002Ultrasound (Basic)Suggested manual; - "Basic Ultrasound" by HyltonB' Meire and Pat FarrantClinical Rotations IISupervised rotations through clinical settings. Rotations will emphasize the Emergency Department and its correlation to the Emergency Medical Services system. Labor and Delivery, New born Nursery, and ICU/CCU.Ambulance Internship Part ISupervised experience in the pre-hospital care setting that will help the student develop and implement the concepts and principles of the Advanced Life Support system. The student will practice skills as a team member, at Basic and Advanced EMT level, under the direct supervision of a field preceptorAmbulance Internship Part IISupervised experience in the pre-hospital care (ambulance), which will allow the student to apply all principles concepts, and skills learned in the classroom, at the Paramedic level. The student will practice skills

as the team leader under the direct supervision of a field preceptor.Ambulance Simulator IIScenario based training; ALS (Advanced Life Support) performance and leadership.Hazardous Materials AwarenessEight contact hours training: familiarization and identification of common chemical products/hazardous materials transported via roadway, railway, and maritimroutes; hazardous materials classification; personal protective equipment, decontamination process; Haz Mat Team; Emergency Response Guide.Technical Rescue Awareness

8. contact hours of training; Accident Vehicle Extrication; Railroad/Train accidents; High Angle and. Low Angle Rescue; Urban Search and Rescue. Response to Terrorism Incidents Awareness 4 contact hours training Accident Victim Extrication Techniques 12-16 contact hours training

CEVO-Coaching Emergency Vehicle Operator (Ambulance) 10 12 contact hours of training[Schedule-14] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 41(2)]Syllabus of Diploma in Ophthalmic TechnologyDiploma Part 1OP-1 Basic Ocular ScienceOP-2 Ophthalmic InstrumentsOP-3 Basic OpticsOP-4 Community Ophthalmology-IOP-5 Instrumental Handling ApplicationDiploma Part 2OP-6 Common Ocular DisordersOP-7 Ophthalmic TechniquesOP-8 RefractionOP-9 community Ophthalmology-IIOP-10 Clinical Skill TrainingTeaching and Examination SchemeFor Diploma 1st Year Ophthalmic

S. No.	Subject:	Distribution of time	Distribution of marks					
Hours per week	Exam							
Th	PR	T	Th	PR	Viva voce	Total		
OP-1	Basic Ocular Science	1	-	1	100	-	-	100
OP-2	Ophthalmic Instruments	1	-	1	100	-	-	100
OP-3	Basic Optics	1	-	1	100	-	-	100
OP-4	Community Ophthalmology-1	1	-	1	100	-	-	100
OP-5	Instrumental Handling Application	-	32	32	-	75	25	100
OP-PRS	Sessional Assessment (PRS)*	-	-	-	50	25	25	100
	Total	4	32	36				600

Basic Ocular ScienceRationaleThis paper introduces eye as the primary organ of vision its surrounding structures. It gives in detail the anatomy (structure) physiology (functions) of the various parts of visual system.Contents

1. Anatomy of the Eye:

Orbit, its relations vascular communications, Eyelids its glands, Conjunctiva, Lacrimal apparatus, Extra-ocular muscles, Cornea sclera. Iris. Ciliary body Choroid, Lens Vitreous, Retina Optic nerve, Visual pathway. Circulation of the eye, Cr. Nerves, Para-sympathetic sympathetic nerves in relation to eye. Embryology of the eye, Pituitary gland and cavernous sinus.

2. Physiology of The Eye:

Functions of parts of eye, structure and functions of the eyelid, functions of lacrimal apparatus and tear film dynamics, aqueous humour intraocular pressure, pupil and pupillary reflexes, pathways, pupil abnormalities, eye movements, extra and intra-ocular muscles: functions and control, light sense night vision, colour sense (colour vision), visual pathways fields, visual cortex, uni-ocular bin-ocular vision, accommodation convergence, electro-retino-gram adaptation, visual acuity testing.

3. Ocular Microbiology

Normal flora of eye, fungi protozoa, bacteria (aerobic /anaerobic), viruses, Laboratory techniques. Sterilization.

4. Ocular Pharmacology

General routes of drug administration osmotic agents. Miotics. Mydriatics and Cycloplegics. Ocular Hypotensives. Local anaesthetics Analgestcs., Sedatives and tranquilizers. General anaesthetic agents. Antiseptics. Anti-viral Anti-fungal agents. Ocular anti-inflammatory agents., Chemo-therapeutic agents. Misc. drugs used by ophthalmologist.Reference Books

1. Ophthalmic Assistant - Vol. I (Anatomy) - Dr. L.P. Agarwal.

2. Physiology of the eye: Arvind Eye Hospital.

Ophthalmic InstrumentsRationaleOphthalmic instruments are used in diagnosis and treatment of eye diseases. These instruments are delicate and costly; require regular servicing of these equipments. This appendix presents general guidelines for the care of instruments, including special cautions to observe and techniques to employ for their handling, cleaning and maintenance.Contents

1. Ophthalmic Equipments Ophthalmic Techniques

1.1Ophthalmic equipments,1.2Examination of eye1.3Special investigations.1.3.1. Conjunctival smear. Fluorescein Staining and pH testing, colour vision.1.3.2. Various Eye Instruments, their principles and use.Refractomctcr Autorefractor and focimcter, Tension taking; (Schiolz/ Applanation/ Non

contact), keratometry, Pachometry, Anaesthesiometry and dark adaptometry, A B Scan, Field Examination / Charting, Ophthalmic Photography, Fundus Photography Fundus Fluorescein Angiography.

Reference Books:

1. Text book of Ophthalmology Dr. A.K. Khurana
2. Essentials of Ophthalmology Dr. L.P. Agarwal

Basic OpticsRationaleThis paper gives a basic knowledge of Optics, Lenses and the nature of refractive errors.Contents» Physical OpticsGeneral properties of light. Principles of Reflection of light, Principles of Refraction of light, Lenses their combinations.

2. Physiological Optics

General concepts of eye as a refracting apparatus

Reference Books:

1. Principles of optic Refraction 6th Ed — Dr. L.P. Agarwal
2. Theory and Practice of SquintOrthoptics — Dr. A.K. Khurana

Community Ophthalmology-IRationaleHe/she is able to assist in early detection of visual impairment and control of blindness as a part of health man power development.ContentsEye screening programme, school clinics and, surveys; Blind person aid and his problems. Rehabilitation of the blind, Health education in the field of eye care. Functioning of mobile eye health care units, Causes of visual impairment and blindness.Organising Eye Camps: Reach In Reach Out Concept. Permission, site selection, publicity, asepsis, Operative and post-op care, follow-up. Role of authorities and local body funding.

Reference Books:

1. Ophth. Assistant Vol. V (Community Ophth.) — Dr. L.P. Agarwal

Instrumental Handling ApplicationRationaleThe students at the end of training shall be able to render assistance to Ophthalmologists/doctors in eye institutions.Practicals

1. Practical As an Ophthalmic Assistant:

1.1Initial patient contact and reception Ethics1.2Office manners, Secretarial assistance, Record their retrieval.1.3Ophthalmic equipments.1.4Examination of eye

2. Sterilization Theatre:

General Aspects, Sterilization Disinfection, Theatre Setup and preparation, Autoclaving hot air oven. Eye instruments. Operating room equipment supplies

3. Practical Training Programme:

3.1Reception / Record Keeping Rotational duty. Receiving patients phone calls, making appointments, making OPD/Indoor tickets, consent taking, vision (Distance /Near), history taking.

3.2. Refraction:

Vision recording - Distance/Near	250 Cases
Colour Vision (Ishihara) Recording	250 Cases
Identification of Lenses (Spherical,Cylindrical, andPrisms their Neutralization	250 Cases

Teaching and Examination SchemeFor Diploma IInd Year Ophthalmology

S. No.	Subject:	Distribution of time		Distribution of marks				
Hours per week	Exam							
Th	PR	T	Th	PR	Viva voce	Total		
OP-6	Common Ocular Disorders	1	-	1	100	-	-	100
OP-7	Ophthalmic Techniques	1	-	1	100	-	-	100
OP-8	Refraction	1	-	1	100	-	-	100
OP-9	Community Ophthalmology-II	1	-	1	100	-	-	100
OP-10	Clinical Skill Training	-	32	32	-	75	25	100
OP-PRS	Sessional Assessment (PRS)*	-	-	-	50	25	25	100
	Total	4	32	36				600

Common Ocular DisordersRationaleThis paper makes the student aware about the general concepts of disease and the processes by which diseases evolve. He/she will he able to understand the disorders that occur in various parts of the eye and ocular adnexa. He/she learns the causes of these disorders, their effects on vision the procedures used to treat them.ContentsCommon Eye Diseases:Diseases of Eyelids, orbit, adnexa, conjunctiva, cornea, sclera, uvea, lens, retina, injuries of eye, optic nerve. Glaucoma.Reference Books

1. Ophthalmic Assistant - Vol. I (Anatomy) - Dr. L.P. Agarwal.

2. Physiology of the eye: Arvind Eye Hospital.

Ophthalmic TechniquesRationaleThis appendix presents general guidelines for the care of instruments, including special cautions to observe and techniques to employ for their handling, cleaning and maintenance.Contents

1. Ophthalmic Techniques

1.1Examination of eye1.2Special investigations.Conjunctival smear. Fluorescein Staining and pH testing, colour vision.

2. Sterilization Theatre:

General Aspects, Sterilization Disinfection, Theatre Setup and preparation, Autoclaving hot air oven. Eye instruments, Operating room equipment supplies. Surgical scrub, laying operating trolley for surgery. Pre Post operative instructions, care and dressing.

3. Surgical Assistance in Operative Procedures on:

Lids, Lacrimal apparatus. Extra ocular muscles, cornea, lens. Glaucoma, Enucleation, Trauma, Retina Vitreous, Laser applications.

Reference Books:

1. Text book of Ophthalmology Dr. A.K. Khurana
2. Essentials of Ophthalmology Dr. L.P. Agarwal

RefractionRationaleThis paper gives a basic knowledge of the nature of refractive errors. Thus he / she will be able to understand the basic principles and elements of procedures used to discover, measure and correct refractive errors.ContentsPhysiological OpticsGeneral concepts of eye as a refracting apparatus, Corneal and lenticular system, Optical resolution of the eye, Visual Angles, Visual Acuity Axis, Optical Aberrations of the eye, Introduction to refractive errors (myopia, Hypermetropia, Astigmatism, Anisometropia and Anisiekonia, Accommodation, Convergence, Presbyopia, Retinoscopy, Subjective Examination, Ophthalmoscopy, Principles of Eye Procedures: Slit Limp, Tonometry, Contact lenses, LVA.

Reference Books:

1. Principles of optic Refraction 6th Ed. Dr. L.P. Agarwal
2. Duke Elder's Practice of Refraction Abram
3. Theory and Practice of SquintOrthoptics Dr. A.K. Khurana
4. Practical Orthoptic in Treatment of SquintKeith Lyle

Community Ophthalmology-IIRationaleHe/she will be able to assist in implementation of national programme for control of blindness. He/She. should impart health education regarding ophthalmic disorders.Contents

1. Eye screening programme, school clinics and surveys. Causes of visual impairment and blindness. Organising Eye Camps: Reach In Reach Out Concept Permission, site selection, publicity, asepsis, Operative and post-op care, follow-up. Role of authorities and local body funding.

2. Nutrition and Eye Diseases

3. Industrial Hazards and Their Prevention. Industrial injuries, accidents and foreign bodies. U.V., Infrared other radiation injuries. Thermal chemical injuries.

Reference Books:

1. Ophth. Assistant Vol. V (Community Ophth.) Dr. L.P. Agarwal

Clinical Skill TrainingRationaleThe students at the end of training shall be able to assist in the estimation and treatment of errors of refraction and common disorders of eye. He/she shall be able to render, assistance to Ophthalmologist/doctors in eye institutions.Practicals

1. Practical As an Ophthalmic Assistant:

1.1Initial patient contact and reception Ethics1.2Office manners. Secretarial assistance. Record their retrieval.

2. Sterilization Theatre:

General Aspects, Sterilization Disinfection, Theatre Setup and preparation, Autoclaving hot air oven, Eye instruments, Operating room equipment supplies. Surgical scrub, laying operating trolley for surgery, Pre Post operative instructions, care and dressing.

3. Surgical Assistance in Operative Procedures on:

Lids, Lacrimal apparatus. Extra ocular Muscles, Cornea, Lens, Glaucoma, Enucleation / Eye Banking, Trauma, Retina Vitreous, Laser applications.

4. Practical Training Programme:

4.1Reception / Record Keeping Rotational duty. Receiving patients phone calls, making appointments, making OPD/Indoor tickets, consent taking, vision (Distance /Near), history taking.

4.2 Refractiqn:

Vision recording - Distance/Near	250 Cases
Colour Vision (Ishihara) Recording	25 Cases
Identification of Lenses (Spherical,Cylindrical, and Prisms their Neutralization	25 Cases

	Lensometxy and vertex refraction meter	25 Cases
	Retinoscopy prescription of glasses	150 Cases
	Subjective verification P.M.T.	150 Cases
	Auto-Refraction	50 Cases
4.3 Visual Fields:		
	Central	10 Cases
	Applanation Tonometry	5 Cases
4.4 Treatment Room Minor Surgicalprocedures:		
	Instillation of drops	50 Cases
	Sub conjunctival Injection	5 Cases
	Laying the trolley for minor surgery	15 Cases
	Syringing	30 Cases
	Tonometry (Tonometer care)	25 Cases
	Epilation	25 Cases
Eye OPD:		
	History taking	50 Cases
4.5	Indoor Cases (Including record Keeping) Historytaking, Preparation of eye (Pre-op.), Blood pressure, UrineSmear examination. Laying of trolley post-operative careDressing rotational duty	50 Cases
4.6	Operation Theatre:	
	Preparation of Theatre	3 times
	Carbolisation fumigation	3 times
	Autoclaving/Sterilisation of instruments.Swabsticks, pads, drums	3 times
	Laying of trolley for surgery (Cataract,Glaucoma, Sac, Squint)	

25
Cases

Maintenance of O.T. equipments /surgicalinstruments

[Schedule-15] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 41(2)]Syllabus of Diploma in Perfusion TechnologyFirst YearPaper FirstSection-A- Brief and General Knowledge about

1. General Human Anatomy Physiology

2. Anatomy of Heart Lung Blood Vessel, Kidney, liver. Nervous system. Endocrine system, circulation. Physics, factors endology, blood supply of visual organs.

3. Heart as Pump Cardiac cycle

4. Blood, its components and Haemostatic

5. Pharmacology of commonly used medicine e.g. Inotropes, antiarrythmics

6. Conduction system of the Heart.

7. Excretory function and Acid Base Balance (Electrolyte balance)

Paper-II

1. Heart blocks and Pacemaker

2. Respiration, Gas Exchange Diffusion

3. E.C.G and Defibrillation

4. Rheumatic heart disease pathology and surgery

5. Ischemic heart disease -(Pathology and Surgical Management)

6. Acyanotic Congenital Heart Disease-(Pathology and Surgery)

7. Cyanotic Congenital Heart Disease-(Pathology and Surgery)

8. Method of Sterilization -Definitions, Types, Methods, Central Sterilization

9. Asepsis and Theatre techniques

10. Liver function tests.

11. Endocrine system, catecho lamine, adrano cotical Hormones

12. Pharmacology - Intropes +	Vasoprssin
	Vasodilators+ Hypotehsive agents
	Treatment of HT
	Plasma expanders-volume expanders
	Anti-arrgythmic agent
	Anesthetic agent+muscle relaxant
	Anticoagulant
	Drugs affecting coagulation
	Thramobolytics
	Steroids
	Buffers
	Diuretics
	Insulin, Antiboitics

Paper-I

1. Types of Oxygenators and some common Oxygenators.

2. Heat Exchangers, Filters and Resevoirs

3. Aortic and Arterial Cannuae.

4. Venous Cannulae and techniques.

5. Priming fluids, PCV

6. Calculation of BSA. Circulating PCV, SVR.

7. Myocardial preservation + Cardioplegia

8. Safety devices

9. Complication during CPB + management

10. Blood conservation + Perfusion

11. Oxygen Preservation, ECMO

Paper-II

1. Technique of Cardiopulmonary Bypass

2. Cardioplegia, additives techniques.

3. Hypothermia, Circulatory arrest and Homeostatics Management.

4. Body response of extra corporeal circulation and complication of C.P.B.

5. Ultra filtration during Cardiopulmonary Bypass.

6. Emergency during Cardiopulmonary Bypass.

7. Perfusion Technology for Minimally Invasive Cardiac Surgery

8. Perfusion for aortic surgery.

9. Complication during CPB + Management.

Diploma In Perfusion TechnologyPractical

	Maximum Marks -100Minimum Marks -50
Division of MarksLog Books of cases	
(Procedures- Observe, Assist undersupervision)Internal Assessment	- 10 Marks- 30 Marks
Viva -	
a) Internalb) External	- 30 Marks- 30 Marks

Syllabus for practical Cardio Thoracic Perfusionist

1. Handling of sterile components/ Maintenance of sterile environment in OT

2. Priming of circuit

3. Assembly of circuit

4. Leakage detection

5. Air bubble removal

6. Roller pump calibration

7. Wet runs

8. Monitoring parameters

9. Sampling and data recording

10. Drug management during cardiopulmonary Bypass

11. Equipment maintenance

12. Coordination with Surgeon and AnesthetistW

13. Technique of Cardiopulmonary By pass

14. Blood Gas Analyzer

15. Ventilation and Termination of CPB

16. Cardiac Support- 1ABP, Pacemaker, degibrillator. Infusion Pump, Central monitor, ECG machine

17. Sterilization and disinfection of Operation Theatre, ICU, Instruments.

18. Positioning of patients in various Operations

19. Preparation of instruments on trolley for Cardio thoracic Surgery operations.

a) Cardiac Surgeryb) Thoracic Surgeryc) Vasuclar Surgery

20. In order of eligible candidate should

ObserveAssistPerform under supervision 50 procedures20 procedures15 procedures

21. Machines used in Cardio thoracic Operation Theatre- Their uses and maintenance

a) Monitorb) Operation Tablec) Electro Surgical Unit(Cautery)d) Operation Lightse) Bronchoscopef) Esophagoscopeg) Teeh) Fiber optic scopesi) Sterilizers[Schedule-16] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).]Charge and Fees[See Regulation 45, 47, 52 54]Various charge and fees: -

S. No.	Fees for	Charges
1.	Application fees for Recognition (Nonrefundable) (One time only)	5000/-
2.	Recognition Fees per course (Non refundable) forfirst year	30.000/-
3.	Inspection by third Inspector or Registrar	25,000/-
4.	Recognition Fee for subsequent year per course(Non refundable)	25,000/-
5.	Registration fee for Trained Personnel	2,000/-
6.	Registration fee on Reciprocal Basis	
	(i) For all the candidates registered with otherState Councils.	3,000/-
	(ii) For all the candidates qualified from otherCountries	10,000/-
7.	Fee for Renewal after every five years ofRegistration	1,500/-
8.	Tuition Fees (to be charged from students by theinstitution per year)	35,000/-
9.	Enrolment fee per Candidate	500/-
10.	Examination Fees per student (including markssheet)	1,000/-
11.	Revaluation fee per paper	500/-
12.	Re-Totaling for one Subject	200/-
13.	Re-Appearing of failure Candidates	250/-
14.	For documents-	
	(i) Fee for issue of Duplicate Mark Sheet	200/-
	(ii) Issue of Duplicate RegistrationCertificates	500/-
	(iii) Issue of Duplicate Diploma Certificates	500/-
	(iv) Urgent Fees	1,000/-
15.	Late fee for Examination	250/-
16.	Late fee for Registration	1,000/-

17. Late fee for Renewal of Registration 500/- (Per year)

[Schedule-17] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required for Diploma in MedicalLaboratory Technology

Refrigerator	- 01
Centrifuge	- 02
Microscope	- 10
Hand lens	- 02
microtome	- 01
Histokinetic	- 01
Spirit lamps	- 10
Sahli's Hemoblobinometer	- 10
Hot air oven working	- 01
Stabilizers	- 01
Analytical balance	- 01
Chemical balance	- 01
Certified weight box	- 01
pH meter	- 01
Hotplates	- 02
Dessicator	- 01
Incubator (2'x 3')	- 01
Timers	- 01
Thermostatic water bath	- 02
Improved Triple ruled neubauer Counting chamber	- 10
Safety spectacles	- 02
Charts and Models, Chemicals and Stains	- as per standard
Tripod stand and burner	- 05
Autoclave	- 01
VDRL Shaker	- 01
VDRL Slide	- 05
Loviband comparators	- 01
Bacterial loop	- 10
Thermometer up to 200°C	- 02
Candle Filter	- 01
Charts: Models showing regions / parts of humanbody.	
2 sets of Histological slides and which arementioned in the syllabus.	
Skeleton	- 01
Sets of individual bones	- 01

Blood group antigens: anti-A, anti-B, anti-Dlancets	- 01 boxes
Westergrins tubes	- 05
Wintrobe's tubes	- 05
Capillary tubes (Heparinised Plain)	- 03 boxes each
Petridishes (diff. sizes)	- 50
Pauster pipettes	- 50
Adjustable micro pipettes	- 01
Funnels - different sizes	- 10
Beakers - different sizes	- 10
Measuring jars - different sizes	- 10
Conical flasks	- 10
Round bottom flask	- 10
Watch glass	- 50
Volumetric flask	- 10
Test Tube holder ,	- 20
Centrifuge Tubes	- 50
Folin Wu Tubes	- 10
Test tube racks	- 20
Serological Pipettes	- 20
Glass rods (Diff. sizes)	- 20
Rubber gloves	- 01 box
Surgical gloves	- 01 boxes
Rubber teats (diff. sizes)	- 10 Nos.
Dropper bottles	- 20

[Schedule-18] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required for Diploma in Radiation TechnologyMobile X-Ray machine - oneFixed 500 MA X-Ray machine - oneFixed 300 MA X-Ray machine - oneCR/DR system - oneCassettees and Hangers in adequate numberAutomatic file processorUltrasound MachineCT Scan Machine with recording system[Schedule-19] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required for Diploma in Dental Mechanics Technology

1. Mean value articulators

2. Semi-adjustable articulators

3. Dental flasks with clamps

4. Acrylisers

5. Vacuum-mixer

6. Vibrator

7. Cast -drying oven

8. Centre grinder / palatal trimmer

9. Lab hand piece with micro motor

10. Hanging motors

11. High speed lathe

12. Casting machine with crucible

13. Casting furnace

14. Casting rings

15. Sandblaster

16. Model trimmer

17. Electrolytic polishing unit

18. Micro motors

19. Agar conditioner and duplicating flasks

20. Surveyors

21. Ceramic firing unit

22. Pindex die pin attaching unit

23. Die cutting unit

24. Denture finishing kit

25. Metal finishing kit

26. Ceramic restoration finishing kit

27. Dental cliair

[Schedule -20] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required for Dental Hygiene TechnologyA Laboratory / Dental Clinic / Dental Workshop well equipped with Dental Equipments, instruments and Materials used during the course of the study with adequate Patient inflow for training.a. Chairsb. Ultrasonic scalersc. Han instrumentsd. Autoclavee. Details of IOPA Machinef. Panoramic machineg. Extra oral machineh. Automatic processori. Mannual processing facilities[Schedule-21] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required for Diploma in Operation Theater Technology

OT tables -hydraulic / electronic withlithotomy, kidney bridge facilities	- 1
Ceiling mounted O.T. light	- 1
Suction apparatus	- 1
Autoclaves	- 1
Sterilization bin	- 1
Cautery machine	- 1
Fumigation equipment for OT	- 1
Boyles anesthetic machine	- 1
OT instruments for all specialties	- 01 set each
Pulse oximeter	- 1
ECG monitors	- 1
Defibrillators	- 1
Ambo bags Ventilator	- 1

Central oxygen, nitrous oxide from manifold rooms C-arm with image intensifier and necessary protective equipment[Schedule-22] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required for Diploma in Dialysis TechnologyA dialysis unit consisting of a hall to accommodate the 5 HD machines and the following: -

(a) Complete water treatment system comprisingof Pre-filter,Carbon filter, Softener, R.O. unit and storagetank	1 full system to run 5 HD machines

Item	No.		
a)	H.D. Machines	02	for regular patients
b)	H.D. Machines	01	for Isolation patients
c)	CRRT Machine	01	for ICU dialysis

SI. No.	Equipments	QTY
Haemodialysis Unit		
1.	Cardiac Monitor	01
2.	Defibrillator	01
3.	Humidifier	04
4.	Glucometer	02
5.	Weighing Machine	01

[Schedule-23] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required for Diploma in Orthopedic Technology

1. Plaster Cutter

2. Fracture table

3. P.O.P, - Plaster

4. P.O.P. Bandage

5. Fibre Caste

6. Plaster Technique Manual

7. Plaster Spreader

8. Steel Bowel

9. Plaster Bowel Stand

10. View Box

11. X-Ray Machine/C Arm

[Schedule-24] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required Diploma in E.C.G TechnologyECG

machines complete with leads - 2Cardiac defibrillatorPulse MonitorHelter ECG, TMT[Schedule-25] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)Equipments required Diploma in Blook Bank Technology

S.No.	Name of the equipment	Specification	Qty.
1.	Donor Chair	Fully upholstered and cushioned to providecomfortable position, Variable position and heights for eitherarm as well reclining body position, Smooth shifting fromhead-low feet high position to any intermediate position withpush button provision. Mobile on wheels with single break locksystem and foot control. Better model for demonstration andapproval	2
2.	Bedside Locker	405 X 405 X 820 mm. M S body power coated - SSTop. One drawer. One locker box 2 rear twin type casters 50 mmdiameter 2 pedestal Stands in front.	4
3.	Sphygmomanometer	ISI standard 3390 99.9% pure mercury Errortolerance ± 3 mm Hg. Micro filter for long life Precisionair release valve Cuff with 2 tubes, rubber bladder Metal faceplate with easy to read upto 300 mm Hg, Yellow scale Mercury lockfor storage, transport, maintenance, cleaning device for glasstube PVC zipper case.	4
4.	Stethoscope	Multiplicity Adult chest piece Ultra sensitivediaphragm for greater amplification. Color co-ordinate non-chillbell and snap on ring to retain diaphragm for patient comfort.Suitable case for protection with 2 spare diaphragms and airtips. Extra thick tubing wall with ID Tag 3 years warranty	
5.	Recovery bed	Semi fowler bed. 3 Section Mattress. (HDP - 40density, 100 mm thick foam covered with cloth backed Rexene ofsuperior quality). M S powder coated main frame 1 fixed foldablecrank handles. ABS head and foot boards, with Indian Rubbishedcastors, two with brake, without IV Bottle rod	1

[Schedule-26] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required Diploma in Endoscopy TechnologyWell equipped operation theater gastroduodenoscope, colonoscope, bronchoscope , drugs used in these procedures, accessories for various procedures like biopsy forceps , bending instruments, dilators etc.Emergency tray with all medicine and primary emergency equipment.Oxygen Cylinder, cautary machine to prevent massive bleeding from any vessel. C arm IITV[Schedule-27] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required Diploma in E.E.G Technology

1. BEG Machine (Analogue) - 01
2. EEG Machine (digital) - 01
3. EMG/NCV/EP Machine - 01
4. Video EEG - 01

[Schedule-28] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required Diploma in Cath lab TechnologyCath lab machine complete with all accessories installed as per BARC norms in A.C. room.[Schedule-29] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required Diploma in Emergency Trauma Care Technology

S. No.	Name of Equipment
1.	C-Arm Image Intensifier
2.	3 D Ultrasonography
3.	500 MA X-ray
4.	CT Scan
5.	100 MA portable X-ray
6.	O.T. Table
7.	Cautery Machine
8.	O.T. ceiling light
9.	High Vaccum Suction Machine
10.	Anaesthesia Machine with Monitor
11.	Standard Ventilator
12.	Pneumatic tourniquet
13.	General surgical instrument
14.	Spinal surgical instrument
15.	Thoracotomy instrument
16.	Faciomaxillary instrument
17.	Power drill and power saw
18.	Craniotomy instrument
19.	Splints and traction
20.	ABC Machine
21.	Automatic bio-analyser
22.	Defibrillator
23.	Operating Microscope
24.	Operating headlights
25.	Fowler's bed
26.	Rehabilitation equipment
27.	Blood equipment
28.	Ventilator
29.	Monitor
30.	Laminar air flow
31.	Manifold system
32.	Electricity back-up

33. Bed Matress + Linen

34. E.C.G. Machine

35. Well equipped ambulance

[Schedule-30] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required for Diploma in Opthalmic Technology

Snellen's Charts	Refraction units
Torches	Direct Ophthalmoscopes
Indirect Ophthalmoscope	Slit Lamp
Keratometer	O.T. Lights
Sterilization Unit / Autoclaves	O.T. Tables/Trolleys
Boyles apparatus	Dressing Bins
Tonometer schiots	A Scan Biometry
Operating microscopes	Autorefractometer

Furniture for Out-patient room, offices, classrooms. Library. Wards etc.

[Schedule-31] [Substituted by Rajasthan Notification No. G.S.R. 78, dated 25.8.2015 (w.e.f. 5.12.2014).][See Regulation 53(1)(E)]Equipments required Diploma in Perfusion TechnologyHeart lung machine complete with all accessories.

Schedule 32

(see regulation 53)Equipments required Diploma in Ultrasound Technology

11. Color Doppler Machine with 3probes	--1
12. Recording System	--1
13. A.C. Examination Room with couch.etc.	--1

Schedule 33

(see regulation 53)Equipments required Diploma in Blood Bank Technology

S. No.	Name of the Equipment	Specifications	Qty
1	Donor Chair	Fully upholstered and cushioned to provide comfortableposition Variable position and heights for either arm as wellreclining body position Smooth shifting from head-low feet highposition to any intermediate position with push button provision.Mobile on wheels with single break lock system	2

		and foot control.Better model for demonstration and approval.	
2	Bedside Locker	405 X 405 X 820 mm. M S body power coated - S S Top. Onedrawer, One locker box 2 rear twin type casters 50 mm diameter 2pedestal Stands in front.	4
3	Sphygmoma nometer	IS1 standard 3390 99.9% pure mercury Error tolerance ±3 mm Hg. Micro filter for long life Precision air release valveCuff with 2 tubes, rubber bladder Metal face plate with easy toread upto 300 mm Hg, Yellow scale Mercury lock for storage,transport, maintenance. Cleaning device for glass tube PVC zippercase	4
4	Stethoscope	Multiplicity Adult chest piece Ultrasensitive diaphragm forgreater amplification. Color co-ordinated non-chill bell and snapon ring to retain diaphragm for patient comfort. Suitable casefor protection with 2 spare diaphragms and air tips. Extra thicktubing wall with ID Tag 3 years warranty.	4
5	Recovery bed.	Semi fowler bed 3 Section Mattress. (HDP - 40 density,100 mm thick foam covered with cloth backed Rexene of superiorquality). MS powder coated main frame 1 fixed foldable crankhandles. ABS head and foot boards, with Indian Rubbished castors,two with brake, without IV Bottle rod.	1

Schedule 34

(see regulation 53)Equipments required Diploma in CT Scan TechnologyMultisplice C.T. Scan Machine with Recording system --1System Room should be as per BARC norms and air conditioned.

Schedule 35

(see regulation 53)Equipments required Diploma in Endoscopy TechnologyWell equipped operation theatergastroduodenoscope,colonoscope,bronchoscope, drugs used in these procedures,Almirah for keeping these instruments,accessories for various procedures like biopsy forceps, bending instruments , dilators etc.Emergency tray with all medicine and primary emergency equipment.Oxygen Cylindercautary machine to prevent massive bleeding from any vessel.

Schedule 36

(see regulation 53)Equipments required Diploma in E.E.G. Technology

1. EEG Machine (Analogue) - 01
2. EEG Machine (digital) - 01
3. EMG/NCV/EP Machine - 01
4. Video EEG - 01

Schedule 37

(see regulation 53)Equipments required Diploma in TMT TechnologyTMT machinecomputer,bed for the patient,BP instruments,stethoscope,I.V drip sets , I.V fluids.drugs and equipments required in emergency in TMT room,electrodes,ECG jelly.Air conditionerOxygen cylinderCardiac defibrilater

Schedule 38

(see regulation 53)Equipments required Diploma in Cath lab TechnologyCath lab machine complete with all accessories installed as per BARC norms in A.C. room.

Schedule 39

(see regulation 53)Equipments required Diploma in Emergency Trauma Care Technology

S. No.	Name of Equipment
1	C-Arm Image Intensifier
2	3 D Ultrasonography
3	500 MA X-ray
4	CT Scan
5	100 MA portable X-ray
6	O.T. Table

7	Cautery Machine
8	O.T. ceiling light
9	High Vaccum Suction Machine
10	Anaesthesia Machine with Monitor
11	Standard Ventilator
12	Pneumatic tourniquet
13	General surgical instrument
14	Spinal surgical instrument
15	Thoracotomy instrument
16	Faciomaxillary instrument
17	Power drill and power saw
18	Craniotomy instrument
19	Splints and traction
20	ABC Machine
21	Automatic bio-analyser
22	Defibrillator
23	Operating Microscope
24	Operating headlights
25	Fowler's bed
26	Rehabilitation equipment
27	Blood equipment
28	Ventilator
29	Monitor
30	Laminar air flow
31	Manifold system
32	Electricity back-pp
33	Bed Matress + Linen
34	E.C.G. Machine

Schedule 40

(see regulation 53)Equipments required for Diploma In Optometry Technology

Snellen's Charts	Refraction units
Torches	Direct Ophthalmoscope
Indirect Ophthalmoscope	Slit Lamp
Keratometer	O.T. Lights
Sterilization Unit / Autoclaves	O.T. Tables / Trolleys

Boyles apparatus	Dressing Bins
Tonometer schiots	A Scan Biometiy
Operating microscopes	Autorefractometer

Furniture for Out-patient room, offices, class rooms, Library,Wards etc.

Schedule 41

(see regulation 53)Equipments required Diploma in Perfusion TechnologyHeart lung machine complete with all accessories.