



Dr. D. Y. PATIL VIDYAPEETH, PUNE

(Deemed to be University)

**Syllabus for
Diploma in
Dental Mechanics
(Revised upto October 2019)**

NOTIFICATION

Whereas the Dental Council of India had approved the proposal of conversion of **Certificate Course in Dental Mechanics to Diploma Course in Dental Mechanics from the Academic Year 2015-16.**

And whereas in pursuance of the following decisions taken by the Board of Management, it is hereby notified to all concerned that the **"Modified Syllabus for the Diploma in Dental Mechanics"** is revised upto **October 2018** and hereby published.

- Modified Syllabus for the Diploma in Dental Mechanics approved vide **Resolution No. BM-27(i)-15** dated **29th December, 2015.**
- The examination pattern of the first year for Diploma in Dental Mechanics approved vide **Resolution No. BM-12-16** dated **22nd September, 2016.**
- Modifications in the First and Second Year Theory Examination pattern of Diploma in Dental Mechanics approved vide **Resolution No. BM-32(ii)-18** dated **12th October, 2018.**

The syllabus of Diploma in Dental Mechanics consists the syllabus for following courses:

- **Applied Physics, Chemistry and Mechanics**
- **Dental Mechanics**
- **Applied Oral Anatomy**
- **Dental Mechanics (Final)**
- **Dental Materials & Metallurgy**
- **Basic Knowledge of Computer and Medical Records and Management**

The **"Syllabus for the Diploma in Dental Mechanics"** – revised upto **October 2018** will be useful to all the concerned. This will come into force with immediate effect.




(Dr. A. N. Suryakar)
Registrar

Copy to:

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

DENTAL MECHANICS COURSE

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REGULATIONS FOR THE MAINTENANCE OF MINIMUM EDUCATIONAL STANDARD FOR DENTAL MECHANICS

DENTAL MECHANICS COURSE REGULATION

“Dental Mechanic” means a person who makes or repairs denture and dental appliances. The dental mechanic shall restrict his/her activities to purely mechanical laboratory work at the instance of the Registered Dental Surgeon. The dental mechanic shall not do any chair side work. In order to regularize and standardize the conferment of the qualifications for Dental Mechanics, it is prescribed that:

1. The Dental Mechanics Diploma Course can be started by a recognized Dental College or a Dental College, which has received the permission from the Central Government for 3rd year BDS Course onwards with maximum of 20 seats.
2. The course of studies should extend over a period of two academic years and lead to the qualification of Dental Mechanics Diploma.
3. A separate course shall be arranged for the training of Dental Mechanics by the institutions. These shall run under a separate School / Section of Dental Mechanics within the Institution.
4. For the purpose of establishment of uniformity in dental education in this course throughout India it is necessary that the course of instructions to be pursued in all the institutions should be standardized. To achieve this :
 - i) A candidate should be at least 17 years of age at the time of admission or within 3 months of it and should be medically fit to pursue the course.
 - ii) The candidate must have passed 10+2 or two intermediate or equivalent coursed thereof with Science subjects (i.e.) Physics, Chemistry and Biology from a recognized Indian University or Pre-University / Intermediate Board.
5. The medium of instruction shall be in English and the course of studies and regulations for the Diploma Examinations and the syllabus to be followed in each subject has been drawn up and appended.

**Mapping of Programme Outcomes [POs] and
Course Outcomes [COs] of Dental Mechanics**

Course	Course code	Course Outcome. The student is able to demonstrate knowledge and skill in
Applied Physics and Chemistry Applied Mechanics	DM 101.1	Specific gravity, density, properties of matter, including cohesion, capillarity, surface tension viscosity, elasticity, diffusion and osmosis
	DM 101.2	Heat: Temperature and its measurements Thermometers and Pyrometers. General account of expansion by heat of solids, liquids and gases, Thermostats.
	DM 101.3	Pressure gas and hydraulic. Boyle's and Charles Laws. Unit of heat, thermal capacity and specific Heat, Change of State;
	DM 101.4	Latent heat; Melting Point. Properties of vapors, conduction, convection and radiation.
	DM 101.5	Principles of electro-technology applied to dental work room,
	DM 101.6	Small motors, constructional features and characteristics, electric furnaces, heaters, thermostats, pyrometers, spot welders, electroplating, electro-forming, and anodizing, Wiring regulations relating to low voltage supplies.
	DM 101.7	Forces, Parallelogram and triangle of forces. Moments, Couples,
	DM 101.8	Centre of gravity,
	DM 101.9	Principles of lever and cantilever, Work, Energy; Power, Friction, Inclined plane,
	DM 101.10	Screw Stress, Strain, Shearing Strain, Torsion, Bending movements, Strength and stiffness of materials
	DM 101.11	Distinction between physical and chemical change; elements, mixtures, and compounds
	DM 101.12	Composition of the atmosphere;
	DM 101.13	Oxygen and oxides, burning and rusting;

Course	Course code	Course Outcome. The student is able to demonstrate knowledge and skill in
	DM 101.14	Water solvent properties and crystallization; action of water on metals; composition of water.
	DM 101.15	Laws of chemical combination; meaning of chemical symbols valency; simple chemical equations; acids, bases and salts

Course	Course code	Course outcome. The student is able to demonstrate knowledge and skill in
Applied Oral Anatomy	DM 102.1	Elementary knowledge of anatomy and structures
	DM 102.2	Human dentition and occlusion.
	DM 102.3	Functions of teeth and morphology of Crowns of teeth.
	DM 102.4	Muscles of mastication and facial expression. Mastication deglutition and phonation
	DM 102.5	Movements of temporo-mandibular joint.
	DM 102.6	Exercise/Demonstrations Tooth Carving in wax and plaster. (Crown and root, scale and enlarged models

Course	Course code	Course outcome The student is able to demonstrate knowledge and skill in
Primary Dental Mechanics	DM 103.1	Infection control measures for impressions and models
	DM 103.2	Impression Preservation and Boxing-in.
	DM 103.3	Cast: Preparation, Trimming, including Orthodontic casts.
	DM 103.4	Cast duplication - various methods. Construction of special trays
	DM 103.5	Bite blocks- base plates and wax rims.
	DM 103.6	Articulators: Classification, daily uses, and care of articulators. Adjustments, Mounting of casts. Articulation, Occlusal plane, protrusive balance, working bite, balancing bite, curve of Spee, compensating curve, lateral curve.
	DM 103.7	Principles of selection of teeth. - Setting of teeth and wax finishing. -
	DM 103.8	Flasking, Dewaxing, Packing, Curing and Deflasking and Finishing and polishing of dentures.
	DM 103.9	Additions, repairs, relining and rebasing of dentures. - Immediate denture construction.
	DM 103.10	Making of acrylic teeth. Kennedy's classification of partial dentures.
	DM 103.11	Principles of partial denture, design, 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.

Course	Course code	Course outcome The student is able to demonstrate knowledge and skill in
Dental Materials and Metallurgy	DM- 201.1	Composition, Properties, Uses, Advantages & Disadvantages of the following materials:- Plaster of Paris; Dental Stone, Die Stone Investment Materials,
	DM- 201.2	All Impression Materials,
	DM- 202.3	Tray Materials, Denture Base Materials, both for cold curing and heat curing,
	DM- 201.4	Tooth Materials Waxes, Base Plates
	DM- 201.5	Zinc Oxide, Dental Luting Cements
	DM- 201.6	Dental Ceramics and indirect resin restoration materials
	DM- 201.7	Metallurgical Terms
	DM- 201.8	Metals used in Dentistry particularly Gold, Silver, Copper, Zinc, Tin, Lead and Aluminium
	DM- 201.9	Alloys used in Dentistry particularly, Casting Gold Wrought Gold Silver Alloys, Stainless Steel, Chrome Cobalt Alloys.
	DM- 201.10	Heat treatment-annealing and tempering. Solders, Fluxes, Anti Fluxes. Tarnish and Corrosion. Electric Deposition.
	DM- 201.11	Dental implant materials

Course	Course code	Course outcome. The student is able to demonstrate knowledge and skill in
Final Dental Mechanics	DM- 202.1	Casting machines: Centrifugal and pressure casting machines,
	DM- 202.2	Furnaces,
	DM- 202.3	Principles of casting.. Casting techniques of partial denture (Skeletal) Clasps, bars, occlusion rest.
	DM- 202.4	Mechanical principles of Orthodontic appliances, anchorage, force, tissue changes and retention. Stainless steel wire preparation of clasps Use of various types of expansion screws. Preparation of removable Orthodontic appliances, Activators, Retention appliances and Oral screen. Construction of fixed Orthodontic appliances, bands, tubes and arches.
	DM- 202.5	Designing - Implant supported Prosthesis (if facilities available for Dental Implants
	DM- 202.6	Ceramic, laminates and Veneers.
	DM- 202.7	Fabricating—Maxillofacial prosthesis such as eye, nose ear, cheek, obturator and splint -Indirect Resin Restoration preparation techniques.
	DM- 202.8	Porcelain firing techniques
	DM- 202.9	Inlays and Crowns-classification and construction facing & backings. Casting Procedures. Principles of bridge work-types of abutments and pontics construction of bridges using porcelain and acrylic pontics.

Course	Course code	Course outcome The student is able to demonstrate knowledge and skill in
Basic Knowledge of Computers and Medical Records Management	DM 203.1	General office routine economics.
	DM 203.2	Record-keeping services.
	DM 203.3	Professional referrals and computing skill.
	DM 203.4	Record keeping Of materials indented
	DM 203.5	Audit of use - Receipt and dispatch of work from clinicians.

THE SYLLABUS FOR DENTAL MECHANICS COURSE

A) PRE- CLINICAL WORK:-

- a. Preparation of plaster blocks, edentulous models, shellac and auto polymerizing base plate, occlusal rims, Class-I teeth set-up, wax-up and curing
- b. Model and die preparation.
- c. Preparation of inlay/ crown on prepared models.
- d. RPD model duplication and wax pattern preparation followed by casting.
- e. Orthodontic wire exercise straightening / circle / triangle / square
- f. Fabrication of orthodontics clasp and appliances.
- g. Single unit crown on Implant Analogue.

B) PRACTICAL WORK:-

- a) Complete Dentures :
 - i) Acrylic 20
 - ii) Metallic 05
 - iii) Balanced Complete dentures 03
 - iv) Characterized complete dentures 03
(At least 2 Dentures against natural teeth in the opposing jaw)
- b) Partial Dentures
 - i) Acrylic 15
 - ii) Metallic 05
- c) Repairing / Relining of Dentures 20
- d) Inlays :
 - i) Indirect Composite 05
 - ii) Metallic 10
 - iii) Ceramic 05
- e) Crowns :
 - i) Acrylic 05
 - ii) PFM 05
 - iii) Metallic 05
 - iv) Pressable Ceramic 05
 - v) Crowns with cast post 05
 - vi) Provisional Crown Fabrication 10

- f) Bridge work (Various Types)**
 - i) Provisional 10
 - ii) 3 Unit Metal 15
 - iii) 3 Unit PFM 03
 - iv) 3 Unit Resin Bonded 03
 - v) Implant supported fixed Prosthesis 05
 - vi) Mockup of the full mouth rehabilitation cases 05
- g) Splints**
 - i) Acrylic Cap Splint 03
 - ii) Night guard (Vacuum formed) 03
 - iii) Bleaching trays 10
- h) Obturators and other Maxillofacial appliances**
- i) Orthodontic Study Casts 05**
- j) Orthodontic Appliances 12**
- k) Implant Prostheses Fabrication 05 (Over-dentures)**
- l) Laminates and Veneers 05**

In addition to the quota mentioned by DCI, DYPDC had added the following Practical work as part of the Course Completion Requirement-

A) COMPLETE DENTURES:

- i) Balanced Complete dentures 03
- ii) Characterized complete dentures 03

B) CROWNS:

- i) Crowns with cast post 05
- ii) Provisional Crown Fabrication 10

C) BRIDGE WORK (VARIOUS TYPES)

- i) Implant supported fixed Prosthesis 05
- ii) Mockup of the full mouth rehabilitation cases 05

D) IMPLANT PROSTHESES FABRICATION 05
(Over-denture)

A. SYLLABUS FOR THE DENTAL MECHANICS COURSE - PRIMARY (1st Year) (Theory)

I. APPLIED PHYSICS :

a) Theory-

- i) Specific gravity, density, properties of matter, including cohesion, capillarity, surface tension viscosity, elasticity, diffusion and osmosis.
- ii) 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 change of state, Latent heat, Melting Point, Properties of vapors, conduction, convection and radiation
- iii) Principle of electro- technology applied to dental work room, small motors, constructional features and characteristics, electric furnaces, heaters, thermostats, pyrometers, spot welder, electroplating, electro-forming and anodizing, Wiring regulating to low voltage supplies.

b) Exercises / Demonstrations :

- i) Balance – weighing correct to a milligram.
- ii) Determination of specific gravity by the principle of Archimedes (Solids and Liquids)
- iii) Determination of surface tension of a liquid by capillary rise.
- iv) Determination of Linear expansion of solids (level method)
- v) Determination of the specific heats of solids and liquids by the methods mixtures.
- vi) Small motors – constructional features and characteristics (Demonstration only)
- vii) Determination of the electro-chemical equivalent of copper.

II. APPLIED MECHANICS:

a) Theory :

- i) Forces, parallelogram and triangle of forces, Moments, couples, central gravity, principles of lever and cantilever work, energy, power, friction, inclined plane, screw stress, strain, Shearing strain, Torsion, Bending movements, Strength and stiffness of materials.

b) Exercise / Demonstrations:

- i) Verification of the parallelogram and triangle laws of forces.
- ii) Verification plane Determination of mechanical advantage.
- iii) Determination of Young's Modulus by bending of bars.

III) APPLIED CHEMISTRY :

a) Theory-

- i) Distinction between physical and chemical change, elements, mixtures and compounds composition of the atmosphere, oxygen oxides, burning and rusting water solvent property and crystallization action of water metals composition of water hydrogen; law of chemical combination; meaning of chemical symbol valency; simple chemical equations acids, bases and salts.
- ii) Electrolysis, the ionic theory of solution, the electro potential series, electroplating, general characteristics of the metals including an elementary study of the common metals and their alloys with special reference to those used in the dental work room.
- iii) Alcohol, ethers, aldehydes and ketones, fatty acids their more important derivatives amines. Simple treatment of carbohydrates, fats and proteins, Benzenes and its homologues, General characteristics of aromatic substances. Synthetic resins and plastics used in Dentistry

b) Exercises / Demonstrations -

- i) Tests for acids and alkalis radicals
- ii) Acid base titration – Neutralization of acids with alkalis. Titration of N/10, NaOH with, N/10, H₂SO₄ .Phenolphthalein or Methyl red as indicator 24
- iii) Total Nitrogen determination in organic nitrogenous materials, digestion and distillation.
- iv) Total Nitrogen determination in inorganic (ammonial) solutions (or salts) by direct distillation with Mg.
- v) Determination of Potassium in aqueous solution by perchlorate method.
- vi) Electrolytic deposition (electrolysis and electroplating of metals)
- vii) Deposition of Copper by electrolysis of copper Sulphate solution
- viii) Calculation of ECE (Electro-chemical Equivalent)

IV) APPLIED ORAL ANATOMY:

a) Theory-

- i) Elementary anatomy and structure of denture/bearing area.
- ii) Human dentition and occlusion. Functions of teeth and morphology of Crown of teeth.
- iii) Muscles of mastication facial expression.
- iv) Mastication deglutition and phonation.
- v) Movements of Temporo-mandibular joint

b) Exercise / Demonstrations-

- i) Tooth Carving in wax and plaster (Crown and root, scale and enlarged models)

V) DENTAL MECHANICS (Primary)

- i) Infection control measures for impressions and models
- ii) Impression Preservation and Boxing-in
- iii) Cast: Preparation, Trimming including Orthodontics casts.
- iv) Cast duplication-various methods
- v) Construction of special trays – spacers.
- vi) Bite blocks- base plates wax rims
- vii) Articulators: Classification daily uses and care of articulators.
- viii) Adjustments – Mounting of casts.
- ix) Articulation, Occlusal plane, protrusive balance, working bite, balancing bite
- x) Curve of Spee, compensating curve, lateral curve.
- xi) Principles of selection of teeth
- xii) Setting of teeth and wax finishing.
- xiii) Flasking, Dewaxing, Packing, Curing and Deflasking
- xiv) Finishing and polishing of dentures.
- xv) Additions repairs, relining and rebasing of dentures.
- xvi) Immediate denture construction.
- xvii) Making of acrylic teeth.
- xviii) Kennedy's classification of partial dentures.
- xix) Principles of partial dentures, design, clasp, surveying, path of insertion and removal. Establishment of clasp seat, Clasp's classification, function and reciprocation.
- xx) Principles of wire bending, preparation of wrought clasps, occlusal rests and lingual bars.

**B. SYLLABUS FOR THE DENTAL MECHANICS COURSE -
(FINAL YEAR) (IInd Year) (Theory)**

I) DENTAL MECHANICS (FINAL)

a) Theory -

- i) Casting machines: Centrifugal and pressure casting machines, furnaces.
- ii) Principal of casting .
- iii) Casting techniques are partial dentures (skeletal) clasps, bars, occlusion rest, setting of teeth and completion of denture on metal skeletons. Mechanical principals of orthodontics appliance, anchorage, force, tissue changes and retention, stainless steel wire, Preparation of clasps, springs and arch, wires for orthodontics appliance. Use of various types of expansion screws.

b) Designing :

- i) Implant supported prosthesis (If facilities available for dental implants.)
- ii) Ceramic, laminates and veneers.

c) Fabrication :

- i) Maxillofacial prosthesis such as eye, nose ear cheek, obturator and splint.
- ii) Indirect resin restoration preparation techniques.

d) Orthodontic Appliances :

- i) Preparation for removable orthodontic appliances, Activators, retention appliances and oral screen.
- ii) Construction of fixed orthodontics appliances, bands, tubes and arches.
- iii) Soldering and spot welding –soldering of clasps, tags, Strengtheners and lingual bars.
- iv) Inlays and Crown-classification and construction facing & backings.

e) Casting Procedures and Porcelain firing techniques :

- i) Principles of bridge work-types of abutment- abutments and pontics construction of bridges using porcelain and acrylic pontics.

II) DENTAL MATERIALS AND METALLURGY

a) DENTAL MATERIALS:

- i) Composition, properties, Uses, Advantages & disadvantages of the following materials:-
- ii) Plaster of Paris: Dental Stone, Die Stone
- iii) Investment materials.
- iv) All impression Materials,
- v) Tray Material,
- vi) Denture Base Materials, Both for cold curing and heat curing, Tooth Material Waxes, Base Plates.
- vii) Zinc Oxide
- viii) Dental Luting Cements
- ix) Dental Ceramics and indirect resin restoration materials

b) DENTAL METALLURGY:

- i) Metallurgical Terms
- ii) General study of
 - Metal used in Dentistry particularly Gold, Silver, Copper, Zinc, Tin, Lead and Aluminum.
 - Alloys used in Dentistry particularly, casting Gold Wrought, Gold Silver Alloys , Stainless Steel, Chrome Cobalt Alloys.
- iii) Heat treatment–annealing and tempering
- iv) Solder, Fluxes, Anti Fluxes.
- v) Tarnish and Corrosion
- vi) Electric Deposition
- vii) Dental implant materials

III) BASIC KNOWLEDGE OF COMPUTERS :

- i) General office routine economics, record-keeping services, Professional referrals and computing skill.
- ii) Record keeping of material indented and audit of use.
- iii) Receipt and dispatch of work from clinicians

C) EXAMINATIONS

An examination for the grant of Diploma of Dental Mechanics shall be conducted by a Board of three Examiners imparting training for qualification of Dental Mechanic Course approved by the Dental Council of India. One of the Examiners must be external (from outside the institution).

Note: Qualification / eligibility / to appointment as Examiners for Dental Mechanics.

- 1) Out of 3 members of Examining Board, the external and one internal examiner should be a reader in Prosthodontics (MDS) and third examiner can be tutor (Dental Mechanics) involved in practical teaching of the course.
- 2) He / She should be an active teacher of the Prosthodontics i.e. specialty at the level of Reader in the department of Prosthodontics in a recognized dental institute.
 - The examination shall be held on such dates as may be fixed.
 - The examination shall consist of two parts:- (1) Primary and (2) Final Examination

I) THE PRIMARY EXAMINATION (FIRST YEAR):

1. The examination shall be open to any students who-
 - (a) Has been enrolled during one academic year preceding the examination in an institute approved/recognized by the Dental Council of India for this purpose.
 - (b) The candidate must have passed 10+2 or two year intermediate or equivalent course thereof with Science subjects (i.e.) Physics, Chemistry and Biology from a recognized Indian University or Pre-University /Intermediate Board.
 - (c) Has his /her name submitted to the Board examiners by the Head of the institute in which he / she is enrolled.
 - (d) Produce the following Certificates signed by the Head of the institute.
 - i) Of good character;
 - ii) Of having delivered and practical demonstrations / clinical conducted in each of the subject of examination.
2. Every candidate shall forward his / her application to the Examining Body by a date fixed by that Body accompanied by the prescribed fee. A candidate who fails to pass or present himself/herself for examination shall not be entitled to claim a refund.

3. Every candidate shall be examined in the following subjects comprising of three papers follows:

Marks for each of the papers shall be as under :

		Written	Oral	Practical	Total
Paper I	Applied Physics, Chemistry and Mechanics	75	25	-	100
Paper II	Dental Mechanics	75	25	100	200
Paper III	Applied Oral Anatomy	75	25	100	200

Each written paper shall be of three hours.

4. Every candidate shall be required to take up all subjects of the examination. A candidate failing in any paper or papers of this examination before being permitted to appear at the subsequent examination, shall produce evidence of having pursued such a course of training as the Head of the institute may determine.
5. A candidate, who passes in any one or more papers of the examination shall be exempted from appearing in that paper which he/she has passed and shall be allowed to re-appear in the rest in which he/she failed in any subsequent examination within a period of two years. Thereafter, the candidate will have appeared in all the papers of this examination.
6. The minimum number of marks required to pass the examination shall be fifty percentage in each paper both in the (i) written with oral (ii) practical parts of the examination.
7. Candidates who obtain minimum of 70% marks in any paper under examination and passes in all three subjects in first attempt shall be declared to have passed with distinction in a particular subject/s. Candidate who do not pass in all the papers in the first attempt and later obtains the distinction marks shall be declare as passed but without distinction.
8. As soon as possible, after the examination, the Board of Examiners shall publish a list of candidates we have passed. Each successful candidate shall receive primary diploma.

THEORY EXAMINATION : (First Year Dental mechanics)

a) Sub: Applied Physics, Chemistry and applied mechanics

	Pattern	Marks / question	Total
Section A	20 MCQs	1 mark each	20 marks
Section B	6 SAQs Applied Physics & Mechanics	5 marks each	30 marks
Section: C	5 SAQs Applied Chemistry	5 marks each	25 marks
Viva voce			25 marks
		Grand total	100 marks

b) Sub: Primary Dental mechanics

	Pattern	Marks/question	Total
Section A	20 MCQs	1 mark each	20 marks
Section B	11 SAQs	5 marks each	55 marks
Attempt 11 out of 12 for section B			
Viva voce			25 marks
		Grand total	100 marks

c) Sub: Applied Oral Anatomy

	Pattern	Marks/question	Total
Section A	20 MCQs	1 mark each	20 marks
Section B	11 SAQs	5 marks each	55 marks
Attempt 11 out of 12 for section B			
Viva voce			25 marks
		Grand total	100 marks

PRACTICAL EXAMINATION: (First Year Dental mechanics)

The practical examination shall include, but not necessary limited to the following -

a) Sub: Primary Dental mechanics :

Sr. No.	Exercise	Marks allotted
1.	Model preparation, beading ,boxing of impression	10 marks
2.	Class Ideal denture setup & wax-up	30 marks
3.	RPD-Surveying of models and wax pattern preparation	20 marks
4.	Spotting of dental materials (10 spots X 2 marks each)	20 marks
5.	Manipulation of lab dental materials	10 marks
6.	Journal	10 marks
	Grand Total	100 Marks

b) Oral Anatomy :

Sr. No.	Exercise	Marks allotted
1.	Carving of one tooth	50 marks
2.	Spotting (8 spots X 5 marks each)	40 marks
3.	Journal	10 marks
	Grand Total	100 marks

II) THE FINAL EXAMINATION (Second Year) :

1. This examination shall be open to any student who –
 - a) Has been enrolled for primary academic year (first year) preceding the final examination in an institution for the dental council for the purpose.
 - b) Has previously passed the primary examination for the diploma of dental mechanics.
 - c) Has his/her name submitted to the Board of Examiners by the head of the Institution in which he/she is enrolled.
 - d) Produces the following certificates signed by the head of the Institute :-
 - i) Of good character
 - ii) Of having attendance not less than Seventy Five percentage of full course of lecturers delivered and practical / demonstration / clinical conducted in each of the subjects of the examination.
 - iii) Of having passed the Primary Examination in all papers.
 - iv) There shall not be a gap of more than two years academic between primary and final Diploma exams.
2. Every candidate shall forward his/her application to the examining body by a date fixed by that body, accompanied by the prescribed fee. A candidate who fails to pass or present himself / herself for examination shall not be entitled to claim a refund of the fee.
3. Every candidate shall be examined in the following subjects comprising of three papers as follows.

Marks for each of the papers shall be as under :

		Written	Oral	Practical	Total
Paper I	Dental Mechanics (Final)	75	25	100	200
Paper II	Dental Materials & Metallurgy	75	25	--	100
Paper III	Basic Knowledge of Computer and Medical Records and management	75	25	--	100

Topics covered under dental mechanics Primary Examination should not be repeated in the final examination.

4. Each candidate shall require taking up all papers of the examination. A candidate failing in any paper or papers of the examination before being permitted to re-appear at the subsequent examination, shall produce evidence of having pursued such a course of training as the Head of the institute may determine.
5. A candidate, who passes in any one or more papers under examination shall be exempted from appearing in which he/she has passed and shall be allowed to re-appear in the rest in which he/she failed in any subsequent examination within a period of two years. Thereafter, the candidate will have to appear in all the papers of this examination.
6. The minimum number of marks required to pass the examination shall be fifty percentages in each paper both in the (i) written oral and (ii) practical parts of the examination. Candidates who obtain minimum of seventy five percentages of the marks in any paper under examination shall be declared to have passed with distinction in that particular subject provided he/she passed all subjected of examination in first attempt. Candidate who does not pass in all the papers of the Final Examination at one and the same time shall not be declared to have passed with distinction.
7. The college authority will apply two months in advance along with practical examination date sheet to the DCI for recognition of the Diploma Course.
8. As soon as possible after examination, the Board of examiners shall publish a list of those candidates who have passed. Each successful candidate shall be granted a Diploma subject to the approval by DCI.

THEORY EXAMINATION : (Final Year Dental mechanics)

a) Sub: Final Dental mechanics

	Pattern	Marks / question	Total
Section A	20 MCQs	1 mark each	20 marks
Section B	11 SAQs	5 marks each	55 marks
Attempt 11 out of 12 for section B			
Viva voce			25 marks
		Grand total	100 marks

b) Sub: Dental materials and metallurgy

	Pattern	Marks / Question	Total
Section A	20 MCQs	1 mark each	20 marks
Section B	11 SAQs	5 marks each	55 marks
Attempt 11 out of 12 for section B			
Viva voce			25 marks
		Grand total	100 marks

c) Sub: Basic knowledge of computers and applied medical records

	Pattern	Marks / Question	Total
Section A	20 MCQs	1 mark each	20 marks
Section B	11 SAQs	5 marks each	55 marks
Attempt 11 out of 12 for section B			
Viva voce			25 marks
		Grand total	100 marks

PRACTICAL EXAMINATION : (Final Year Dental mechanics)

a) THREE UNIT FPD

Sr. No.	Exercise	Marks Allotted
1.	Model pouring, Die-preparation, Ditching & Spacer application	20 marks
2.	Wax pattern & Casting of all metal bridge	30 marks
3.	Removable Orthodontic appliance	20 marks
4.	Ceramic application on single unit coping (casted before)	20 marks
5.	Journal	10 marks
	Grand total	100 Marks

D) NO. OF HOURS DEVOTED TO THE SUBJECTS

FIRST YEAR -

Subject		Hours		Total
		Lecture	Practical / Demo	
Applied Physics and Mechanics	Hours laid down by DCI	30	20	50
	Actual Hours Devoted	30	20	50
Applied Chemistry	Hours laid down by DCI	30	20	50
	Actual Hours Devoted	30	20	50
Primary Dental Mechanics	Hours laid down by DCI	30	600	630
	Actual Hours Devoted	45	1000	1045
Dental Materials	Hours laid down by DCI	20	40	60
	Actual Hours Devoted	40	40	80
Dental Metallurgy	Hours laid down by DCI	15	15	30
	Actual Hours Devoted	15	15	30
Applied Oral Anatomy	Hours laid down by DCI	20	90	110
	Actual Hours Devoted	40	110	150

SECOND YEAR -

Subject		Hours		Total
		Lecture	Practical/ Demo	
Dental Materials and Metallurgy	Hours laid down by DCI	20	40	60
	Actual Hours Devoted	40	40	80
Dental Mechanics (final)	Hours laid down by DCI	30	785	815
	Actual Hours Devoted	45	1200	1245
Basic Knowledge Computers and Medical Records Management	Hours laid down by DCI	10	10	20
	Actual Hours Devoted	10	10	20

E) SCOPE AFTER COMPLETING DENTAL MECHANICS

- A competent dental technician understands current biological, physical, dental materials science, cultural, social, and psychological factors involved in dental and oral disease, and in attaining and maintaining oral health. They also analyze, critique, synthesize and solve problems in the discipline of dental technology.
- A competent dental technician undertakes research and analyses relevant scientific literature and can apply their findings to the provision of prostheses and appliances and the delivery of appropriate oral health care.
- A dental technician can open up his own laboratory or else he can work in an already running established laboratory. A dental college requires at least 10 technicians to work in clinical departments. Employment opportunities in government/private hospitals and armed forces are also available.