TATYASAHEB KORE DENTAL COLLEGE AND RESEARCH CENTRE
NEW PARGAON – 416 113

Tal.: Hatkanangale Dist.:Kolhapur (Maharashtra State)

National Dental Commission

INFORMATION REGARDING INSTITUTIONAL COMPLIANCE

4. Clinical Compliance

4.2 Student clinical work registers are updated regularly.

TATYASAHEB KORE DENTAL COLLEGE & RESEARCH CENTRE, NEW PARGAON

SERVICE IS RELIGION

WARANA
HEALTH MOVEMENT
Est : 1992

DEPARTMENT OF PROSTHODONTICS & CROWN & BRIDGE

PRE-CLINICAL WORK RECORD BOOK

CERTIFICATE

This is to Certify that ~~Mr.~~/Ms Patil Nakshatra Jaywant

has satisfactorily completed the course as prescribed by the Maharashtra University of Health Sciences, Nashik for the year _____

Professor & Head of Department **Staff Incharge**

External Examiner **Internal Examiner**

Dr. Harish Kulkarni M.D.s
Principal
T. K. D. C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dt. Kolhapur 416 137

Date - _____

Name - _____

University Exam No. - _____

INDEX

INDEX

INSTRUCTIONS TO THE STUDENTS

1) Students should enter the preclinical laboratory on time.

2) Students should wear clean and neatly ironed apron with name plates and should wear a head cap.

3) Students should observe silence in the department.

4) Students should have the relevant instruments for the specific practical exercise.

5) Students should keep the instrument clean.

6) Students should spread Mackintosh sheet on the table before starting work.

7) Students should avoid wastage of the materials and conserve water.

8) Students should not put plaster, wax or any other waste material in the sink.

9) Students should put off the Bunsen burner when not required.

10) This record book should be kept neat and in good condition.

11) This record book should be handed in the progress reports as and when required to the instructor

Dr. Harish Kulkarni M.D.s
Principal
T. K. D. C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dt. Kolhapur 416 137

1st YEAR BDS STUDENTS INSTRUMENT KIT

Sr. No.	Items	Qty
1	Dental Flask (Upper)	1
2	Dental Flask (Lower)	1
3	Mean Value Articulator	2
4	Metal Tray	1
5	Enamel Tray	1
6	Kidney Tray	1
7	Impression Tray	12
8	PVC Bowl Medium	1
9	PVC Bowl Large	1
10	Wax Knife	1
11	Plaster Knife	1
12	Plaster Spatula St	1
13	Plaster Spatula Cd	1
14	Wax Spatula	1
15	Cement Spatula	1
16	Dental Probes	2
17	Lacron's Carver	1
18	Agate Spatula	1
19	Chip Syringe	1
20	Dappen Dish	2
21	Glass Slab	1
22	Plain Glass	1
23	Procelain tile	1
24	Mouth Mirror with Handle	1
25	Dental tweezer	1
26	B.P. Handle No. 3	1
27	B.P. Handle No. 4	1
28	B.P. Handle No. 10	1
29	B.P. Handle No. 15	1
30	Acrylic Mixing Jar	1
31	Metallic Trimmer	1
32		

Sr. No.	Items	Qty
33	Cotton Holder	1
34	Waste Cotton Receiver	1
35	Copying Pencil	1
36	Glass Marking Pencil	1
37	Napkin	1
38	Small Metal Scale	1
39	Spirit Lamp	1
40	Blow torch	1
41	Universal Plier	1
42	Sand Paper Holder	1
43	Mandrel	1
44	Mackintosh Sheet	1
45	Clamps	2
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		

Dr. Harish Kulkarni M.D.S.
Principal
T.K.D.C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dist. Kolhapur 416 137

LABORATORY PROCEDURE

HOURS OF ATTENDANCE -
Attendance in the laboratory will be accordance with the time table.

WATER, GAS AND ELECTRICITY -
Care must be taken that these services are not unnecessarily wasted. Bursens, gas taps and furnaces must be turned off when not required Unnecessarily wastage of water should be avoided.
All motors must be switched off immediately after use. Failure of this not only wastes power, but frequently causes overheating and burning out of the motor.

PLASTER MIXING AND TRIMMING -
1. The Mixing and trimming of plaster at the laboratory bench is not permitted. Plaster room is provided for this purpose.
2. Excess mixed plaster should be removed from the bowl and placed in the plaster trap it should not be thrown in the sink.
3. The plaster, stone and investment storage bin are provided with lids these must be kept closed when not in use to maintain properties of the materials further, these materials should be taken out only with clean and dry scoops/ spatula

EQUIPMENT ISSUED FROM THE LABORATORY STORE -
1. Equipment borrowed from the Department should be returned as soon as possible under no circumstance must it be placed in a locker.
2. Wastage of any material will not be permitted.

STUDENT EQUIPMENT -
1. No responsibility is taken for the student's instruments that are mislaid. Equipment must be maintained in order according to the instrument list. Instruments will be checked periodically.
2. Borrowing will not be permitted.
3. All Instruments and equipments should be engraved, with students initials or name.

Dr. Harish Kulkarni M.D.S.
Principal
T. K. D. C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dist. Kolhapur 416 137

Date - _____ Signature _____

Date - _____ Signature _____

Date - _____ Signature _____

INTRODUCTION TO PROSTHODONTICS

DEFINITION OF PROSTHETIC DENISTRY :-

Prosthetic dentistry is that branch of dentistry pertaining to the restoration and maintained of oral function, comfort, appearance and health of the patients by the restoration of natural teeth and / or the replacement of missing teeth and craniofacial tissues with artificial substitutes.

AIMS OF PROSTHETIC DENTISTRY –

The aim of Prosthetic Dentistry is restoration of missing or lost dentition and associated structures with a view to preserve what remains of masticatory apparatus, restore function and aesthetics.

BRANCHES OF PROSTHETIC DENTISTRY –

1) REMOVABLE PROSTHODONTICS – Complete Dentures
Partial Dentures,
Complete Overdentures,
Partial Overdentures

2) FIXED PROSTHODONTOCS – Crowns
Bridges
Laminates

3) MAXILLOFACIAL PROSTHODONTICS – Obturators
Stents
Splints
Extraoral Prosthesis
Eye, Ear, Nose etc.

4) IMPLANT PROSTHODONTICS - Removable Prosthesis
Fixed Prosthesis

Dr. Harish Kulkarni M.D.S.
Principal
T.K.D.C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dist. Kolhapur 416 127

REMOVABLE PROSTHODONTICS :–

It is branch of prosthodontics concerned with the replacement of teeth and contiguous structures for edentulous or partially edentulous patients by artificial substitutes that are removable from mouth.

FIXED PROSTHODONTICS :–

It is branch of prosthodontics concerning the replacement and / or restoration of teeth by artificial substitutes that are not readily removed from the mouth.

IMPLANT PROSTHODONTICS –

It is that phase of Prosthodontics concerning the replacement of missing teeth and / or associated structures by restorations that are attached to dental implants

MAXILLOFACIAL PROSTHODONTICS –

It is branch of Prosthodontics concerned with the restoration and/or replacement of the stomatognathic and craniofacial structures with prosthesis that may or may not be removed on regular or elective basis.

Sign of Instructor	Nature of Work Done	

Dr. Harish Kulkarni M.D.s
Principal
T. K. D. C. & Research Centre,
New Pargaon Tal. Hatkanangle
Dt. Kolhapur 416 12[illegible]

QUESTIONS :

1) Removable Prosthodontics includes
   - complete denture
   - removable partial denture
   - obturators
   - complete over denture
   - partial over denture

2) A Fixed Restorations on a single tooth covering all the tooth surface is
   - Full crown

3) Fixed restoration that replace a missing tooth is
   - Fixed partial denture
   - Bridge
   - crown
   - laminated

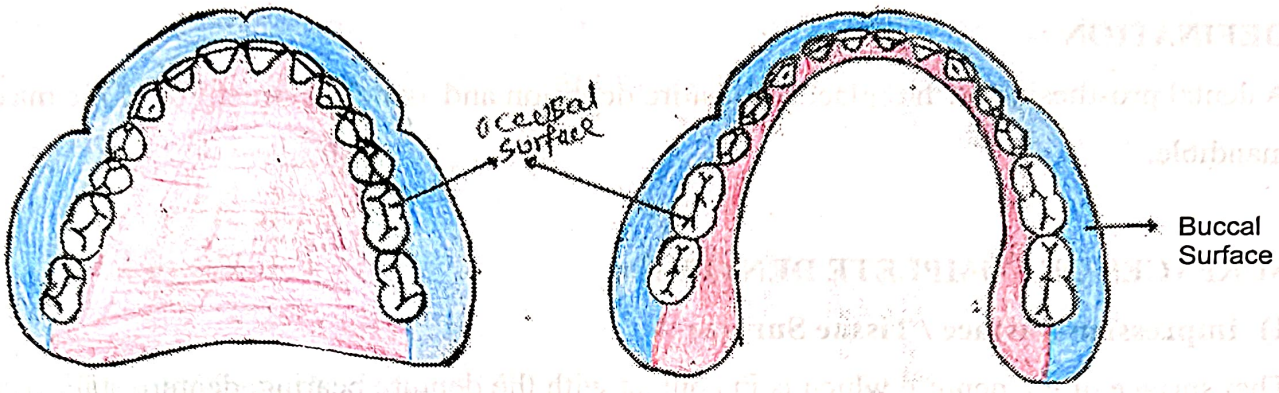
Dr. Harish Kulkarni M.D.S
Principal
T.K.D.C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dist. Kolhapur 416 137

Date	Nature of Work Done	Sign of Instructor.
06/11/25		

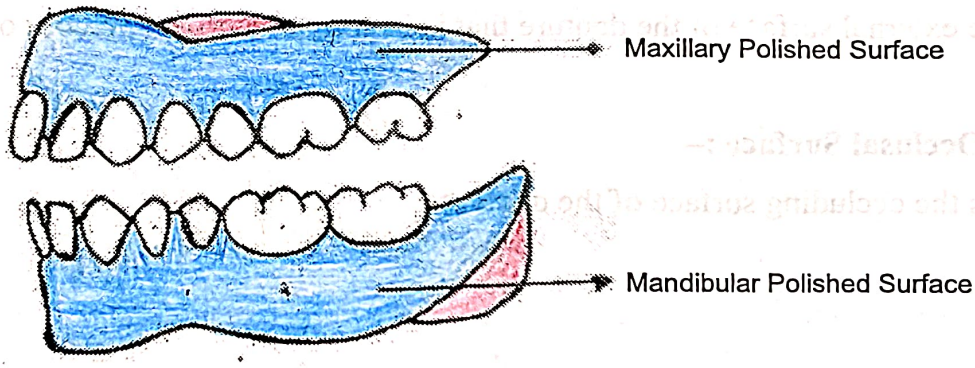
COMPLETE DENTURE

COMPLETE DENTURE

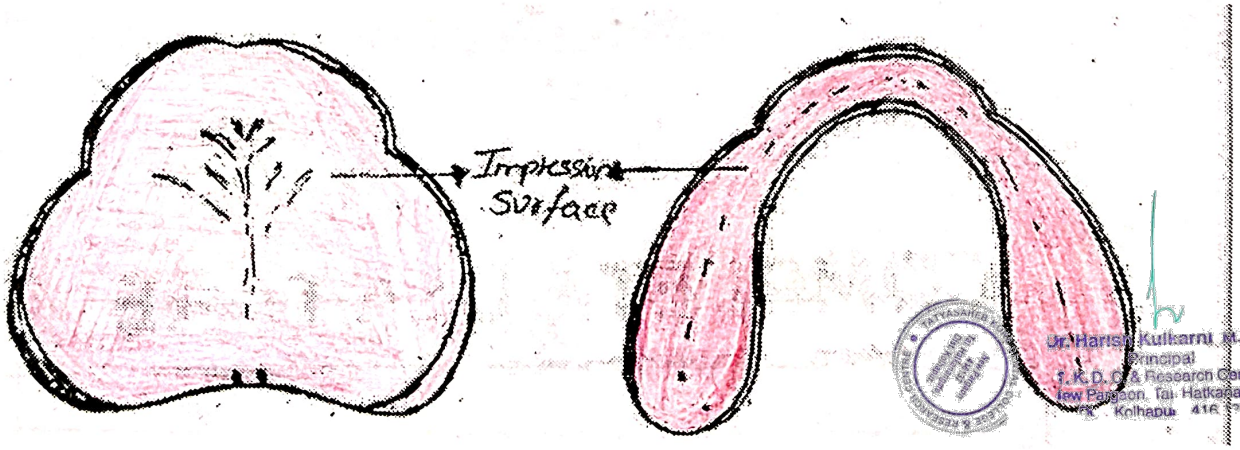
OCCLUSAL VIEW



LATERAL VIEW



IMPRESSION SURFACE VIEW / TISSUE SURFACE VIEW



Colour & Label the Diagram

EXERCISE NO. 1

COMPLETE DENTURE

DEFINATION :-

A dental prosthesis which replaces the entire dentition and associate structures of the maxilla and mandible.

SURFACES OF COMPLETE DENTURE :-

1) Impression Surface / Tissue Surface :-

That surface of the denture which is in contact with the denture bearing, denture stabilizing and border seal areas present in the edentulous mouth.

2) Polished Surface :-

The external surface of the denture that is in contact with the mucosa of cheek lips and tongue.

3) Occlusal Surface :–

It is the occluding surface of the denture.

Dr. Harish Kulkarni M.D.S.
Principal
T. K. D. C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dt. Kolhapur 416 137

QUESTIONS :

1) The surface of a complete denture that contacts the tissue is called as surface ?

The surface of a complete denture that contact the tissue is called as Impression surface / Tissue surface.

2) A prosthesis that replaces all the teeth and associated structure is called as

A prosthesis that replace all teeth and associated structure is called as complete denture.

Date	Nature of Work Done	Sign of Instructor
18/11/25		

Dr. Harish Kulkarni M.D.S.
I.K.D.C. & Research Centre,
New Pargaon, Tal- Hatkanangle
Dist. Kolhapur 416 137

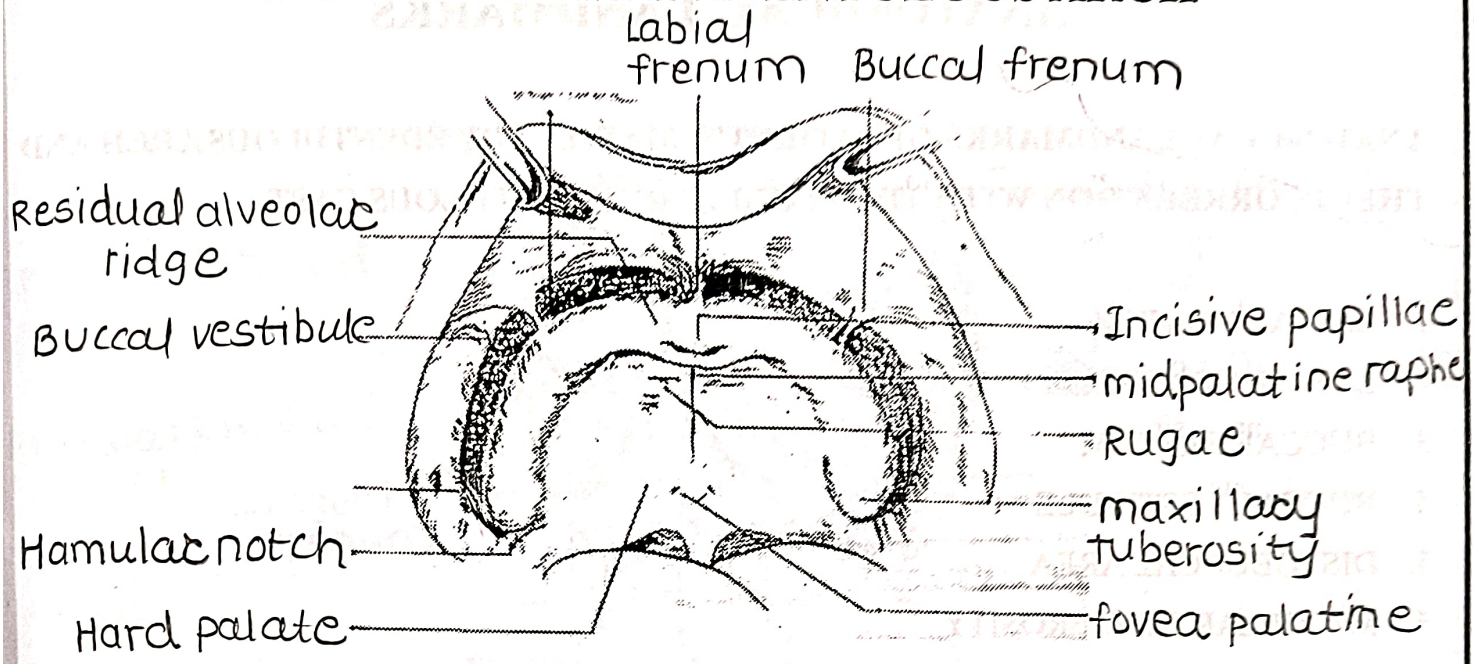
EXERCISE NO. 2

CLINICAL AND LABORATORY STEPS IN FABRICATION OF COMPLETE DENTURE

1. Examination, Diagnosis, Prognosis and Treatment Planning
2. Primary Impression
3. Primary Cast
4. Special/Custom Tray
5. Final Impression
6. Final Casts
7. Temporary record base with occlusal rims
8. Jaw relation and selection of teeth
9. Transfer of jaw relation to the articulator.
10. Arrangement of artificial teeth.
11. Waxing amd carving
12. Try-in of waxed up dentures
13. Processing of dentures
    a) Sealing of waxed up dentures to cast
    b) Flasking – Base Flasking
       counter flasking
    c) Dewaxing
    d) Application of separating media
    e) Packing
    f) Bench curing
    g) Heat curing
    h) Bench cooling
14. Laboratory remounting and selective grinding
15. Finishing and Polishing
16. Denture Delivery and Instruction to the patient
17. Patients Recall

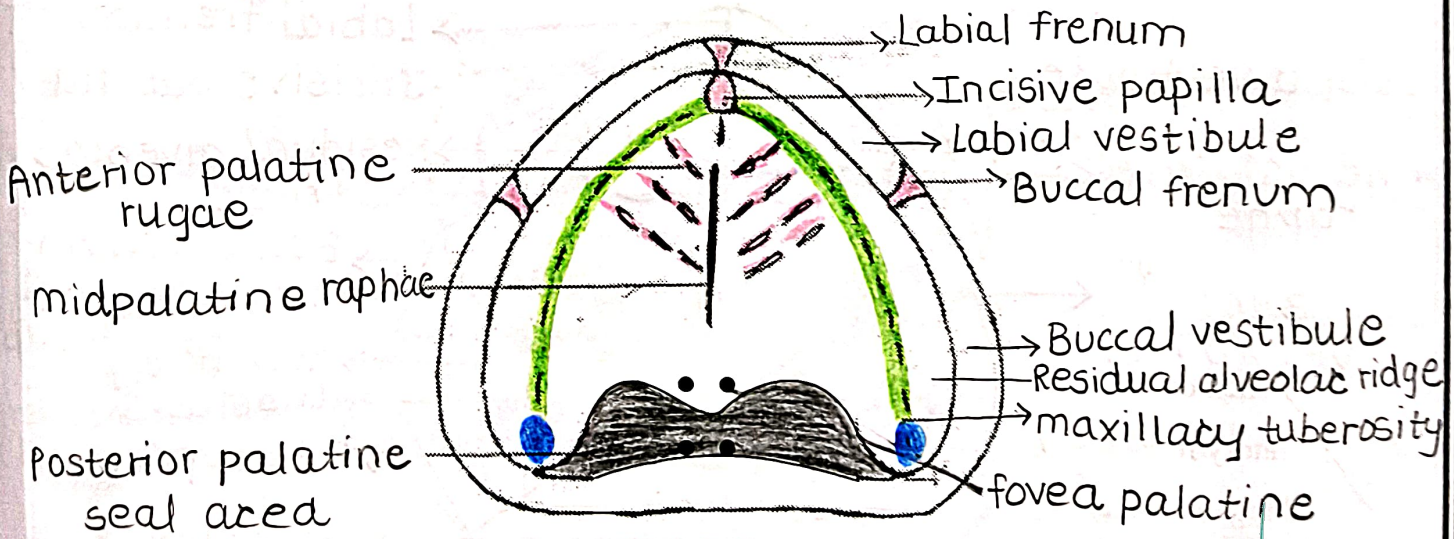
Dr. Harish Kulkarni M.D.S.
Principal
T. K. D. C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dt. Kolhapur 416 127

INTRA-ORAL ANATOMICAL LANDMARKS OF THE MAXILLARY EDENTULOUS ARCH



Label the Diagram

SURFACE LANDMARKS OF THE MAXILLARY EDENTULOUS CAST



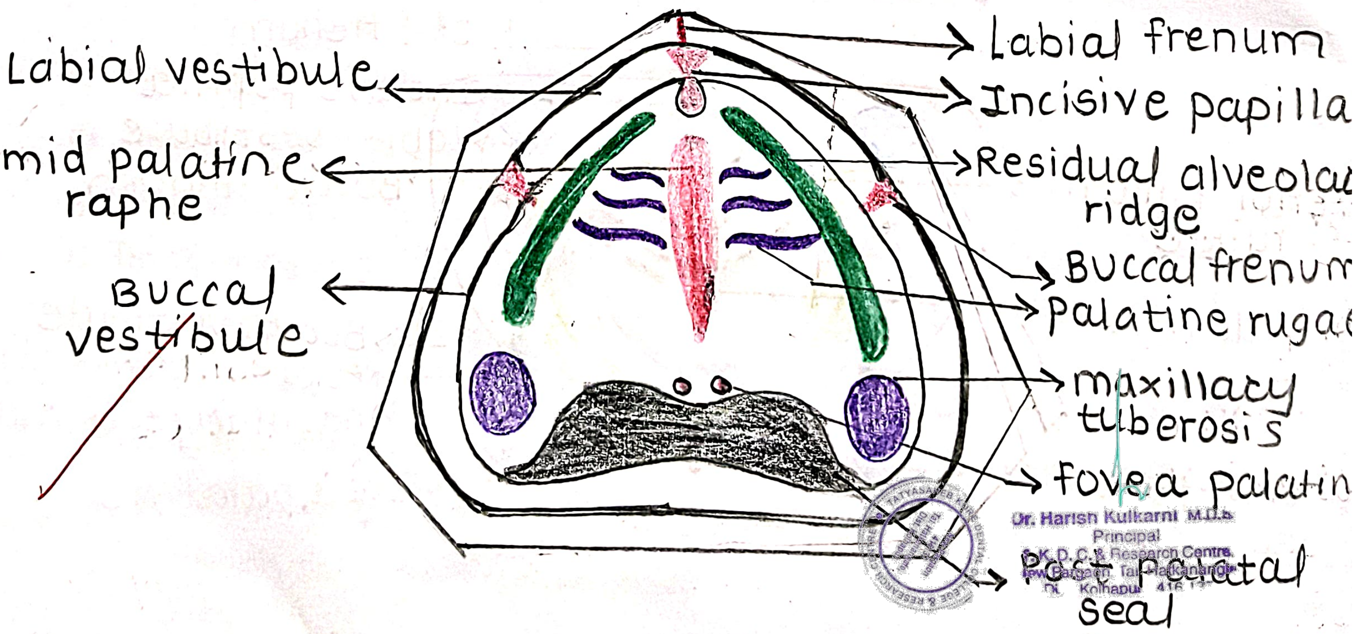
Colour Label the Diagrams Refer to the Chart

EXERCISE NO. 3(A)

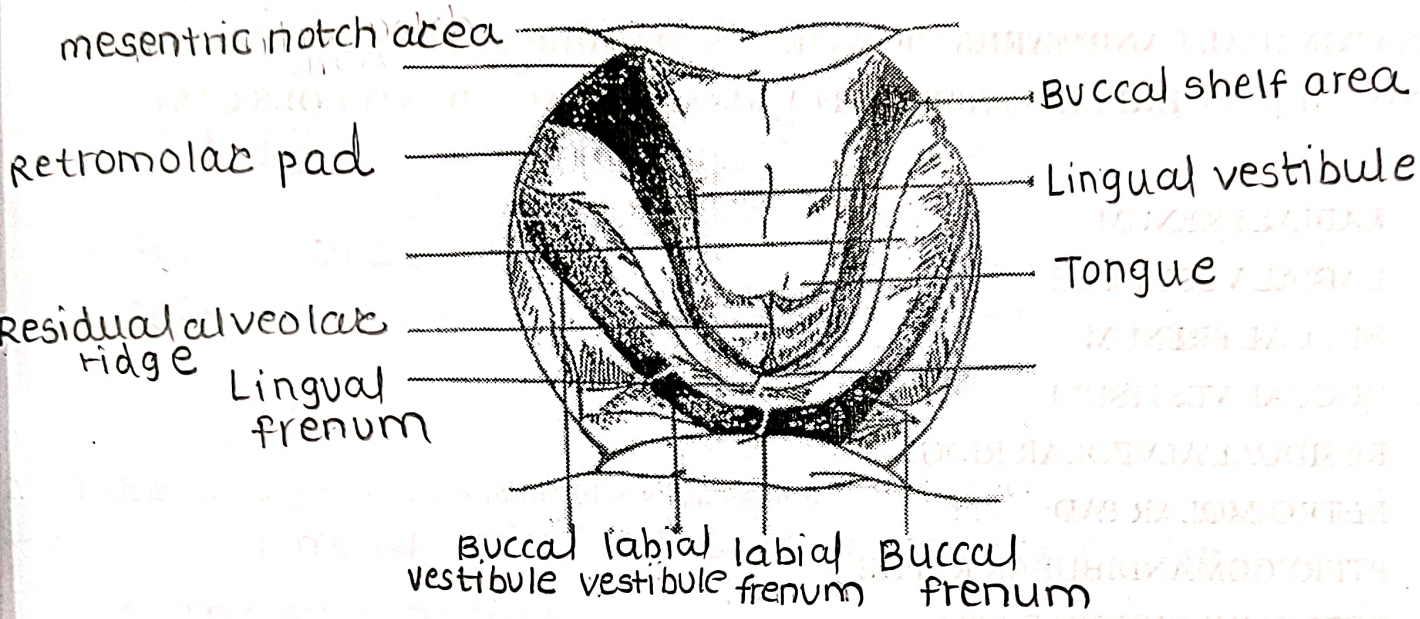
ANATOMICAL LANDMARKS

ANATOMICAL LANDMARKS OF PATIENT'S MAXILLARY EDENTULOUS ARCH AND THEIR CORRELATION WITH THE MAXILLARY EDENTULOUS CAST

1. LABIAL FRENUM
2. LABIAL VESTIBULE
3. BUCCAL FRENUM
4. BUCCAL VESTIBULE
5. DISTOBUCCAL AREA
6. MAXILLARY TUBEROSITY
7. HAMULAR NOTCH
8. FOVEA PALATINE
9. INCISIVE PAPLLAE
10. RESIDUAL ALVEOLAR RIDGE
11. POSTERIOR PALATAL SEAL
12. MIDPALATINE RAPHE
13. PALATAL RUGAE

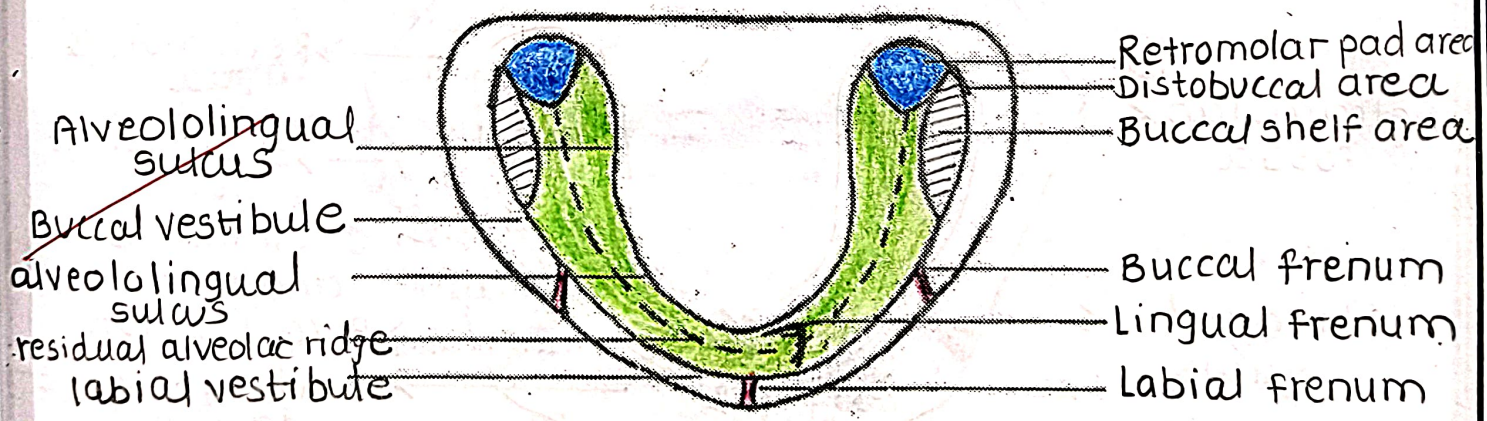


INTRA-ORAL ANATOMICAL LANDMARKS OF THE MANDIBULAR EDENTULOUS ARCH



Label the Diagram

SURFACE LANDMARKS OF THE MANDIBULAR EDENTULOUS CAST



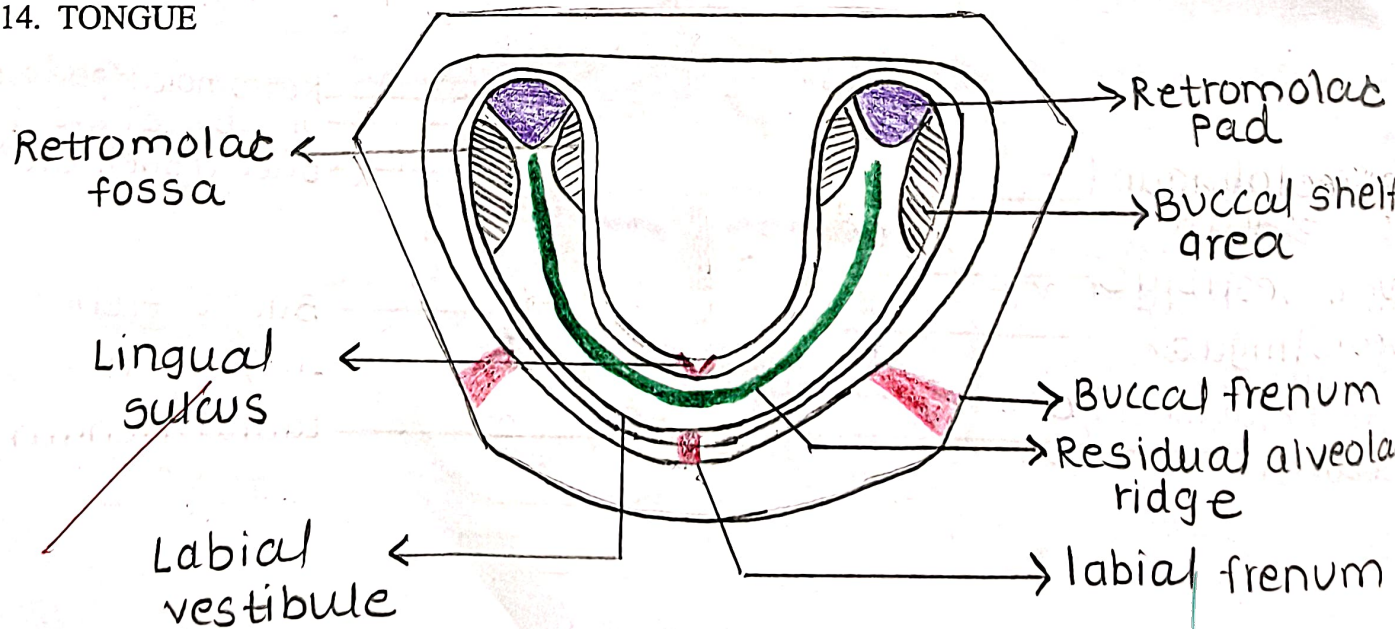
Colour Label the Diagrams Refer to the Chart

EXERCISE NO. 3(B)

ANATOMICAL LANDMARKS

ANATOMICAL LANDMARKS OF PATIENT'S MANDIBULAR EDENTULOUS ARCH AND THEIR CORRELATION WITH THE MANDIBULAR EDENTULOUS CAST

1. LABIAL FRENUM
2. LABIAL VESTIBULE
3. BUCCAL FRENUM
4. BUCCAL VESTIBULE
5. RESIDUAL ALVEOLAR RIDGE
6. RETRO-MOLAR PAD
7. PTERYGOMANDIBULAR RAPHE
8. RETROMYLOHYOID FOSSA
9. ALVEOLINGUAL SULCUS
10. LINGUAL FRENUM
11. BUCCAL SHELF AREA
12. PREMYLOHYOID EMINENCE
13. MASSETERIC NOTCH AREA
14. TONGUE



QUESTIONS :

Exercise No. 3(A) : -

1. Which are primary stress bearing areas in maxillary foundation?

→ Primary stress bearing area in maxillary foundation are:

1. Hard palate
2. Posterior lateral slopes of residual alveolar ridge.

2. Which are primary relief areas in maxillary foundation?

→ The primary relief area in maxillary foundation

1. Incisive papilla.
2. mid palatine raphae

3. Which are denture limiting areas in maxillary foundation?

→ Denture limiting area in maxillary foundation

1. Labial frenum
2. Labial vestibule
3. Buccal frenum
4. Buccal vestibule
5. Hamular notch
6. posterior palatine raphae
7. Fovea palatine

Date	Nature of Work Done	Sign of Instructor
		Dr. Harish Kulkarni M.D.S. Principal T.K.D.C. & Research Centre, New Pargaon, Tal. Hatkanangle Dt. Kolhapur 416 13

QUESTIONS :

Exercise No. 3(B) : -

1. Which are primary stress bearing areas in mandibular foundation?

→ Primary stress bearing areas in mandibular foundati

1. Buccal shelf area
2. Residual alveolar ridge

2. Which are primary relief areas in mandibular foundation?

→ Primary releif area in mandibular foundation area

1. mental foramen
2. Genial tubercle

3. Which are denture limiting areas in mandibular foundation?

→ Denture limiting area in mandibular foundation.

1. Labial frenum
2. Labial vestibule
3. Buccal frenum
4. Buccal vestibule
5. Hamular lingual frenum.
6. Alveolo lingual sulcus
7. Retromolar pad
8. Pterygomandibular raphe

Date	Nature of Work Done	Sign of Instructo

Dr. Harish Kulkarni M.D.S.
Principal
T.K.D.C. & Research Centre
New Pargaon, Tal. Hatkanangle
Dist. Kolhapur 416

EXERCISE NO. 4

PRIMARY IMPRESSION OF EDENTULOUS CAST

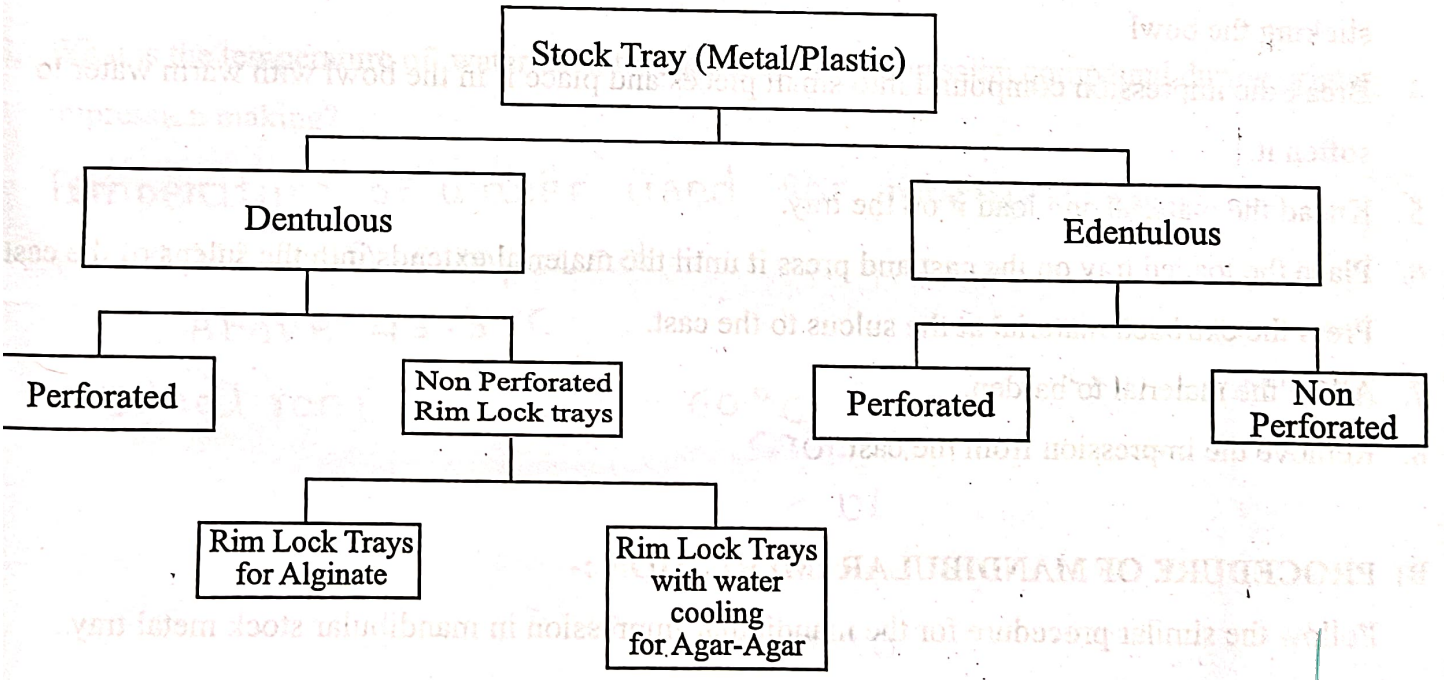
DEFINATION OF IMPRESSION :-

A complete denture impression is negative registration of entire denture bearing, stabilizing and border seal areas present in the edentulous mouth which is recorded when the plastic material becomes relatively hard on set while in contact with tissues.

DEFINITION OF TRAY :-

A receptacle, usually made from metal, that holds, directs, and confines an impression material while an impression is being made.

TYPES OF STOCK TRAYS :-



MATERIAL AND INSTRUMENTS :-

1. 1 1/2 Cake of medium fusing impression compound
2. Vaseline
3. Large Rubber Bowl
4. Hot Water (not more than 65°C)
5. Wax Knife
6. Edentulous stock non perforated trays
   a) Maxillary
   b) Mandibular

A) PROCEDURE OF MAXILLARY IMPRESSION :-

1. Select a maxillary edentulous stock metal tray which covers most of the anatomical portion of th cast and the away from the tissue by 2 mm.
2. Lightly grease the surface of the cast with Vaseline and also the tray.
3. Coat the under surface of hard rubber bowl with Vaseline to prevent the softened compound from sticking the bowl.
4. Break the impression compound into small pieces and place it in the bowl with warm water to soften it.
5. Knead the material and load it on the tray.
6. Place the loaded tray on the cast and press it until the material extends into the sulcus of the cas Press the extruded material at the sulcus to the cast.
7. Allow the material to harden.
8. Remove the impression from the cast.

B) PROCEDURE OF MANDIBULAR IMPRESSION :-

Follow the similar procedure for the mandibular impression in mandibular stock metal tray.

Dr. Harish Kulkarni M.D.s
Principal
T. K. D. C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dt. Kolhapur 416 127

QUESTIONS :

1. What Material you have used for making primary impression of the edentulous die ?

Impression compound is used for making primary impression of edentulous die.

2. What do you mean by fusion temperature of impression compound ?

- The temperature at which material looses its hardness or brittleness or forms a rigid mass upon cooling is is referred as fusion temperature.
- It exhibits fusion temperature range rather than fixed point.

3. What is the temperature of water used for manipulating impression compound during primary impression making?

Temperature of water used for manipulation of impression compound -

Above 43.5°C

Ideal range - 55°C - 60°C

Date	Nature of Work Done	Sign of Instructor

EXERCISE NO. 5

CAST

DEFINATION OF CAST :-

The Positive reproduction of the form and shape of the denture bearing, denture stabilizing and border tissues of the maxilla / mandible usually made in gypsum product. A Cast is made from an impression (negative replica) of this tissues.

TYPES OF CAST :-

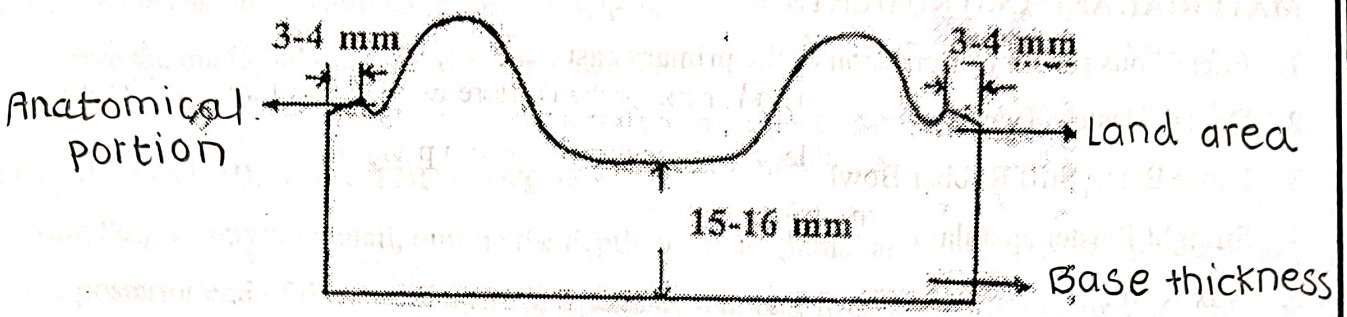
1. Diagnostic Cast / Primary Cast (Type II Gypsum)
2. Master Cast / Final Cast (Type III Gypsum)

PARTS OF A CAST :-

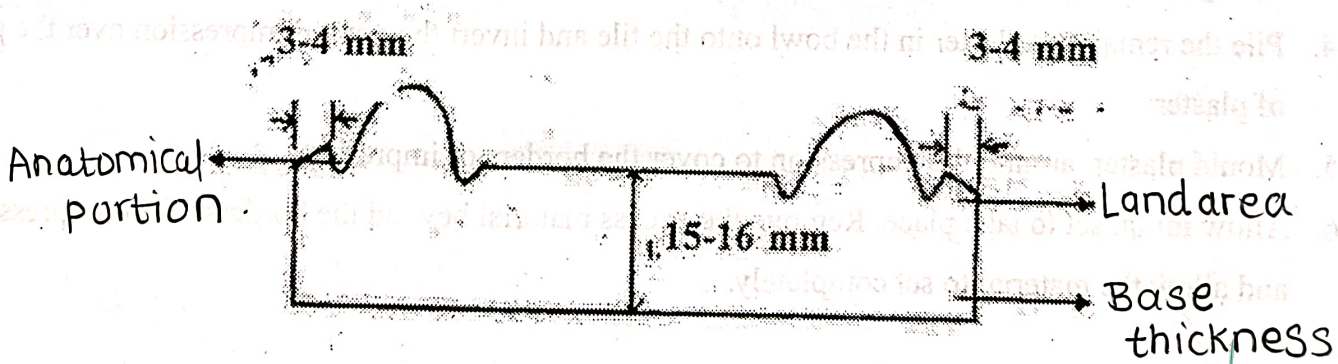
1. Impression surface
2. Base
3. Land area / Ledge

Dr. Harish Kulkarni M.D.s
Principal
I.K.D.C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dt. Kolhapur 416 137

PRIMARY CAST - MAXILLARY



PRIMARY CAST - MANDIBULAR



Label the Diagrams

PREPARATION OF PRIMARY CAST FROM PRIMARY IMPRESSION

MATERIAL AND INSTRUMENTS :-

1. Edentulous primary impression of the primary cast.
2. Dental Plaster (Type II)
3. Large Black Stiff Rubber Bowl
4. Straight Plaster spatula
5. Wax Knife
6. Plaster Knife
7. Ceramic tile

PROCEDURE :-

STEP I : POURING OF THE IMPRESSION

1. In a large black stiff rubber bowl, take measured quantity of water, add dental plaster by sprinkling it gradually till no free water is visible and water is completely saturated with dental plaste
2. Spatulate the mix with a straight plaster spatula and vibrate the bowl, to release air entrapped i it. Spatulate till you get a creamy mix.
3. Pour the dental plaster from one end of the impression. Tap the impression while pouring to av entrapment of air. Continue to add plaster till it fills the impression.
4. Pile the remaining plaster in the bowl onto the tile and invert the poured impression over the pi of plaster
5. Mould plaster around the impression to cover the borders of impression.
6. Allow initial set to take place. Remove the excess material beyond the borders of the impressio and allow the material to set completely.

Dr. Harish Kulkarni M.D.s
Principal
I.K.D.C. & Research Centre,
Ilew Pargaon, Tal. Hatkanangle
Dt. Kolhapur 416 12

STEP II : RETRIEVAL OF THE CAST :-

1. Take warm water (not more than 65°C) in black stiff rubber bowl.
2. Immerse the poured impression in warm water for 5 min.
3. Allow the compound to soften and remove the softened material from the set cast.
4. Check the cast for anatomical details or defects.
5. Retrive the mandibular cast in the same manner.

STEP III : FINISHING OF THE CAST :-

1. Using Purple copying pencil, outline the depth of sulcus (labial and lingual) of the mandibular cast The posterior end of the maxillary cast, should be marked, from the depth of hamular notch on one side through the fovea palatine, to the hamular notch on the other side.
2. Mark the depth of sulcus (labial and lingual) of the mandibular cast. The posterior end is marked beyond the retromolar pads including these pads on the both sides of the arch.
3. After making the depth of the sulcus, the cast is trimmed. Using a plaster knife in such way that the ledge of the cast is 3-4 mm high and 3-4 mm wide.
4. The base of the cast is 15 mm thick and such that the ridge crest is more or less horizontal, anteriorly and posteriorly.
5. Using a plaster knife, the cast is trimmed and smoothened.

Dr. Harish Kulkarni M.D.S.
Principal
T. K. D. C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dt. Kolhapur 416 137

QUESTIONS :

1. What purpose of the primary cast ?

Purpose of the primary cast

1] Initial representation of oral structure - It is replica of patient's oral anatomy created from preliminary impression.

2] Diagnostic & planning tool - Helps in treatment planning

3] Fabrication of custom tray.

2. Primary cast is poured in which material ?

Primary casts are generally poured in

- dental plaster (Type II)
- dental stone

3. What should be the dimension of the base of the cast ?

- The base of a cast should not be less than 10-12 mm at thinnest point.
- Ideal thickness = 15 - 16 mm

Date	Nature of Work Done	Sign of Instructor

Dr. Harish Kulkarni M.D.S.
Principal
T.K.D.C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dist. Kolhapur 416

EXERCISE NO. 6

SPECIAL TRAY

DEFINITION OF SPECIAL TRAY :-

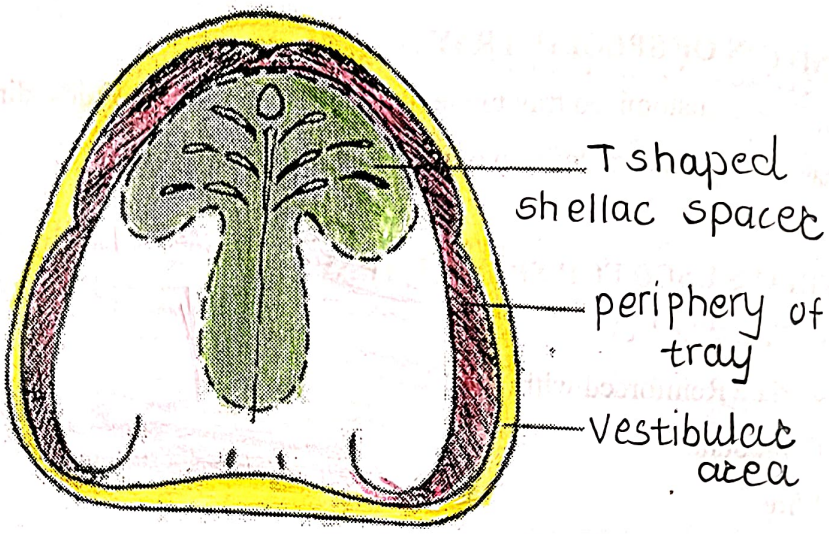
Special Tray is customized tray mode on a primary cast, thats holds, directs and confines an impression material, to make a Definitive/ Final Impression.

MATERIALS USED FOR SPECIAL TRAY :-

1. Base Plate (Shellac)
2. Base Plate Reinforced with
   a) Compound
   b) Wire
   c) Self - Cured acrylic resin
3. Acrylic Resin -
   a) Self - Cured
   b) Heat - Cured
4. Polyvinyl Material

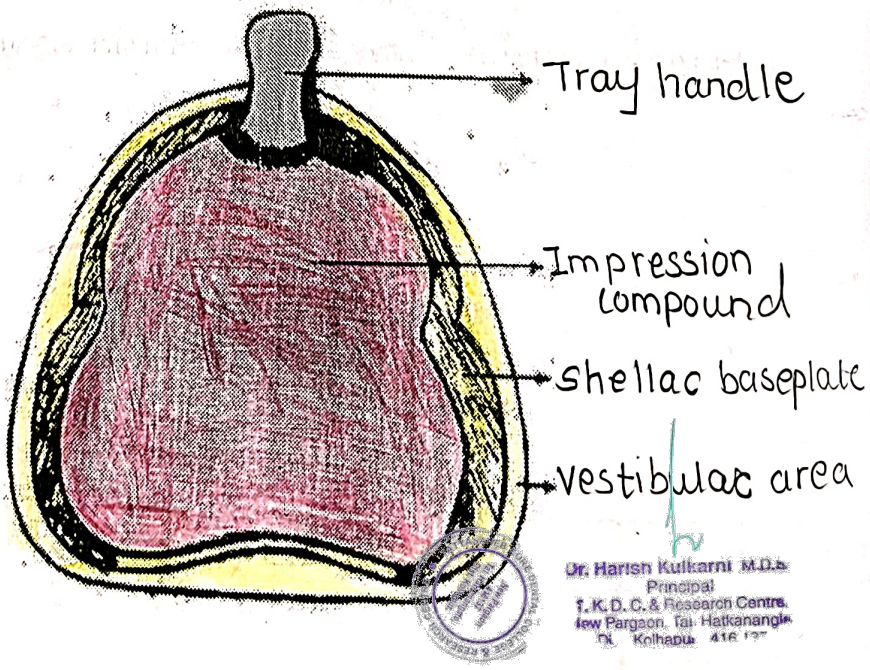
SPECIAL TRAY – MAXILLARY

"T" SHAPED SHELLAC SPACER



Colour & Label the Diagram

SPECIAL TRAY IN SHELLAC BASE REINFORCED WITH IMPRESSION COMPOUND



Colour & Label the Diagram

EXERCISE NO. 6 (A)

SPECIAL TRAY IN SHELLEC BASE PLATE REINFORCED WITH IMPRESSION COMPOUND

MATERIALS AND INSTRUMENTS:-

1. Primary Cast
2. Shellac base plate
3. Wax knife
4. Small scissors
5. Half round file
6. Wax spatula

PROCEDURE:-

1. Mark the midline of the cast coinciding with labial frenum.
2. Mark the outline on the maxillary primary cast for the special tray i.e. 2 mm short of the sulcus.
3. Draw a "T" shape spacer to outline the rugae and mid-palatal raphae.
4. Immerse the cast in water for 5 mins; to prevent the base plate from sticking to it.
5. Soften and adapt the base plate, as a spacer on the cast, cut to the marked spacer outline. Apply french chalk on the spacer to prevent the next layer of base plate from adhering.
6. Soften another sheet of base plate, place it over the spacer and cast.
7. Press the base plate to intimately contact the cast. Commence the adaptation from the centre of the plate. Press the base plate at the periphery into the labial and buccal sulci.
8. Cut excess of base plate at the periphery beyond the sulcus outline and roll it. In the posterior area the base plate is not rolled. It is filed to maintain a thin periphery in the posterior area.
9. After adaptation of the base plate is completed, check the peripheries to confirm the outline and provide enough relief in the frenum area.
10. Use the excess base plate to make the handle. Prepare a handle 15 mm high, 10 mm wide and 5 mm thick. Attach the handle to the special tray in the midline with slight labial tilt.
11. Remove the tray from the cast and check the border extentions and place it back on the cast.
12. Reinforce the impression compound is done by spreading the softened compound on the special tray. Take care to keep the compound at least 3 mm short on the peripheries. Once the compound hardens the tray is reinforced.

QUESTIONS :

1. What are the drawback of Shellac Special Tray?

Drawbacks of shellac special tray -

1] Thermoplastic instability - During setting of teeth or fabrication of rims they trend to wrap due to repeated changes in temperature.

2] Brittle & fragile - It is prone to breaking / cracking due to low strength.

3] Poor adaptation and fit.

2. Why do you reinforce a Shellac special tray with impression compound?

1] To increase strength and rigidity.

- shellac alone is brittle & fragile especially under pressure during impression making. Impression compound adds to mechanical strength.

2] Improve dimensional stability

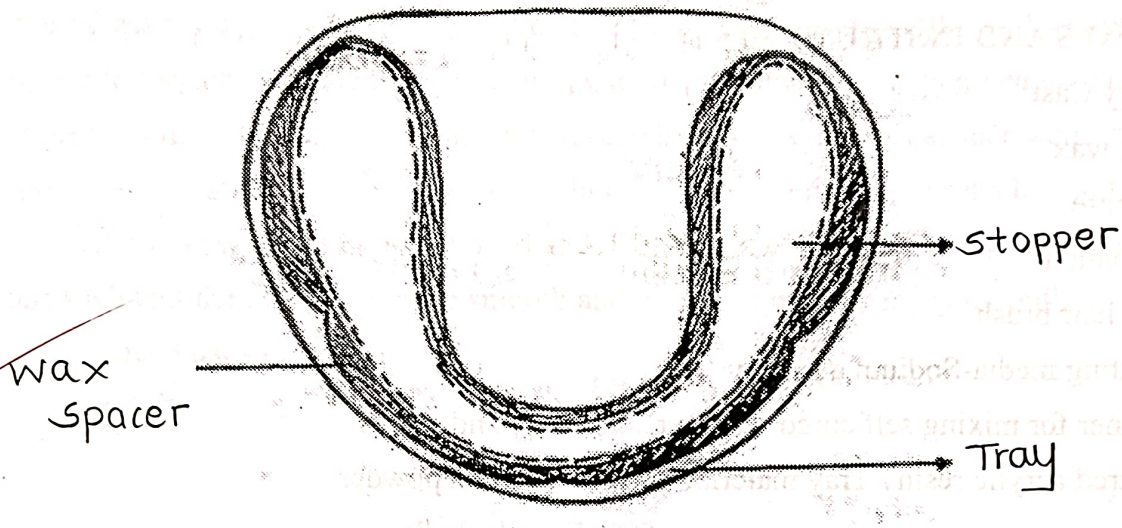
3] To enhance peripheral extension and support

4] To modify or customise tray shape.

Date	Nature of Work Done	Sign of Instruct

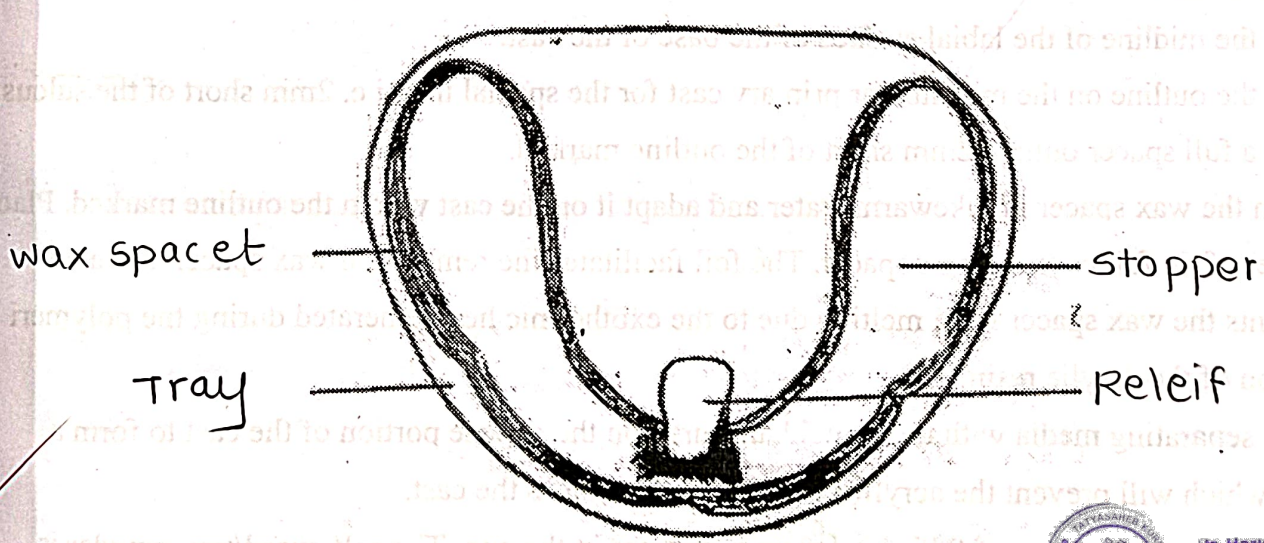
SPECIAL TRAY – MANDIBULAR

WAX SPACER



Label the Diagram

SPECIAL TRAY IN SELF CURED ACRILIC RESIN



Label the Diagram

EXERCISE NO. 6 (B)

SPECIAL TRAY IN SELF CURED ACYLIC RESIN

MATERIALS AND INSTRUMENTS :-

1. Primary Cast
2. Spacer wax
3. Wax knife
4. Wax spatula
5. Camel hair brush
6. Separating media-Sodium alginate
7. Container for mixing self cured acrylic resin – Cup and saucer
8. Self cured acrylic resin / Tray material - 50% self cured powder
   - 50% French chalk
9. Self cured acrylic resin monomer
10. Tin foil
11. Acrylic trimmer
12. Scissors

PROCEDURE :-

1. Mark the midline of the labial surface of the base of the cast.
2. Mark the outline on the mandibular primary cast for the special tray, i.e. 2mm short of the su
3. Draw a full spacer outline 2mm short of the outline marked.
4. Soften the wax spacer in lukewarm water and adapt it on the cast within the outline marked. a sheet of tin foil over the wax spacer. The foil facilitates the removal of wax spacer and also prevents the wax spacer from melting due to the exothermic heat generated during the polym - zation of the acrylic resin.
5. Apply separating media with the camel hair bursh on the expose portion of the cast to form a layer which will prevent the acrylic resin from adhering to the cast.
6. Take measured quantity of self cured resin monomer in the cup. The self cured/tray powder is added to the liquid till is saturates. It is mixed using a wax knife to get a homogeneous mix. T cup is covered with the saucer, to prevent evaporation of monomer.

7. The mix is allowed to lose its stickiness before it is removed from the container. Remove the material knead and adapt well on the cast to form a tray. Take care to limit the material within the outline marked to prevent trimming to tray later on. Cut away any excess material beyond the peripheral outline with a sharp carver or scissors.
8. Mold the excess material to prepare a handle of 12mm height 10mm width and 5mm thickness and attach it in the centre of the tray coinciding with the midline. No tilt is given to the handle.
9. During the polymerization there is heat generation which melts the wax spacer. To prevent this, apply pressure on intial set tray on the cast by holding it and immersing it in a bowl of cold water.
10. Once the material is set, the tray is removed and if trimming is required, carry out with an acrylic trimmer; such that the tray borders are smooth and just short of the peripheral outline.
11. The tray is placed back on the cast.

Dr. Harish Kulkarni M.D.S.
Principal
T.K.D.C. & Research Centre
New Pargaon, Tal. Hatkanangle
Dt. Kolhapur 416 137

QUESTIONS :

1. Why special tray is required to be fabricated?

1] Accurate impression = customized fit to patient arch ens better adaptation & support during impression making
2] The flanges of tray can be modified according to sulcular
3] provide uniform space for impression material.

2. What spacer material is used for fabrication for:-

commonly used materials for special tray fabricatio
- shellac
- Type II impression compound
- cold cure acrylic
- Vaccum formed vinyl or polystyrene

a) A Shellac Special Tray –

Non-asbestas ring liner

b) A self-cured Acrylic Resin Tray –

modelling wax / Baseplate wax.

3. What is the composition of self-cured tray material?

- Powder - 1. Polymethyl methaacrylate & other copolymer -
2) Benzoyl peroxide.
3) comp. of carium & mercuric sulphide
4) zinc or titanium oxide
5) Dibutyl pthalate
6) Dyed org. fillers & inorg. pach
- Liquid = 1) methyl metaacrylat
2) Dimethyl -p-toludine
3) Dibutyl pthalate
4) GMDCol dimetha crylate
5) Hydroquinone

4. What is the need for placing a spacer?

1] Provide space for impression material.
2] Tissue stopper helps in proper placement & stabilizatio on of tray as it is in directly contact of mucosa.

Date	Nature of Work Done	Sign of Instru

Dr. Harish Kulkarni M.D.S. Principal K.K.D.C. & Research Centre New Pargaon, Tal. Hatkanangle Dt. Kolhapur 416

EXERCISE NO. 7

PREPARATION OF FINAL CAST (DEMONSTRATION)

DEFINITION OF FINAL CAST :-

An accurate replica of the residual ridge area and associated structures, reproduced from an final impression, upon which a dental prosthesis will be fabricated.

CASTS ARE POURED IN DENTAL STONE BY TWO METHODS:-

A) BOXING METHOD

B) TWO STAGE POURING METHOD

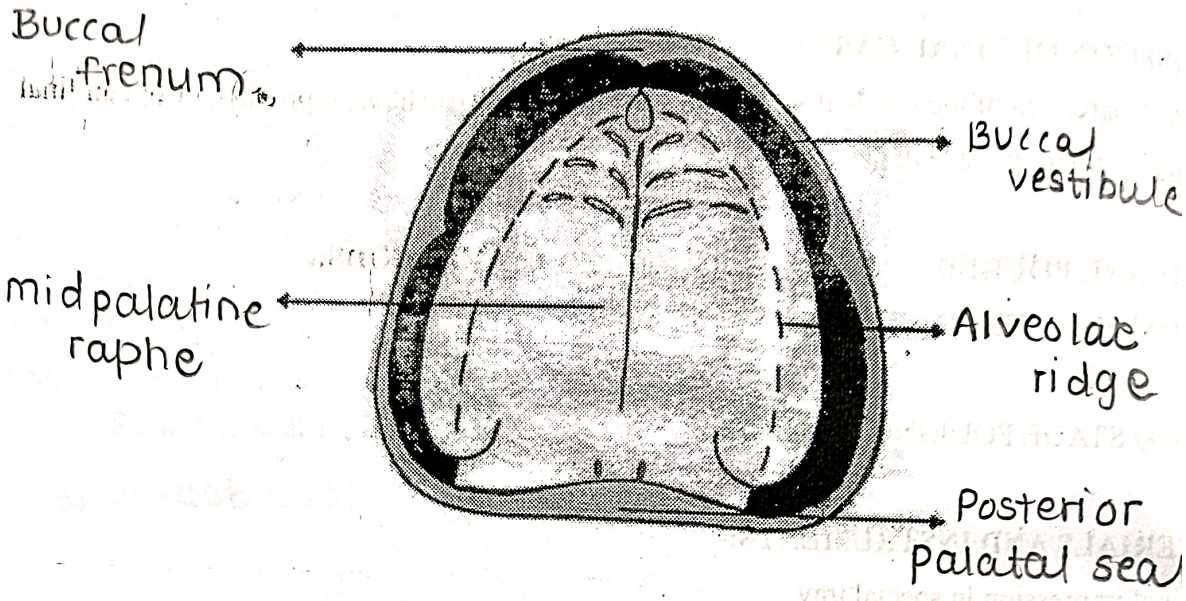
MATERIALS AND INSTRUMENTS:-

1. Final impression in special tray
2. Stiff black rubber bowl
3. Straight Plaster spatula
4. Plaster knife
5. Beading wax
6. Boxing wax
7. Dental Stone (Type III Gypsum)

A Metal case, usually made up of brass, used in the investing procedure for dental prosthesis.

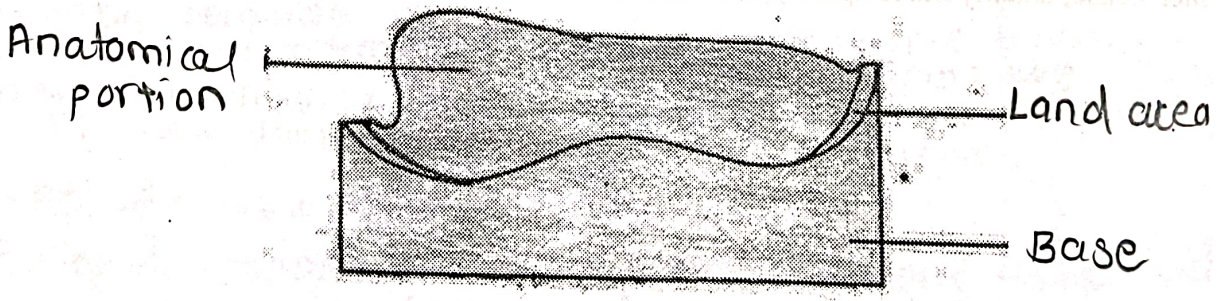
FINAL CAST – MAXILLARY

OCCLUSAL VIEW



Label the Diagram

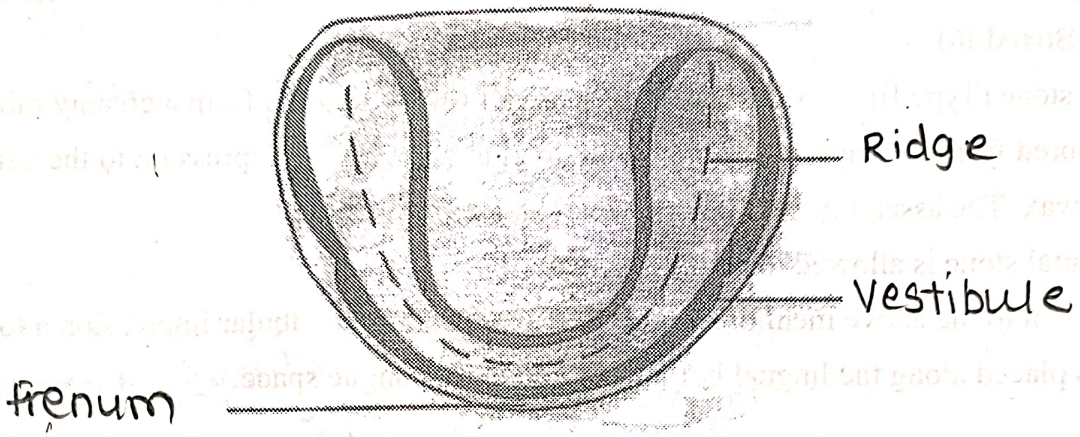
LATERAL VIEW



Label the Diagram

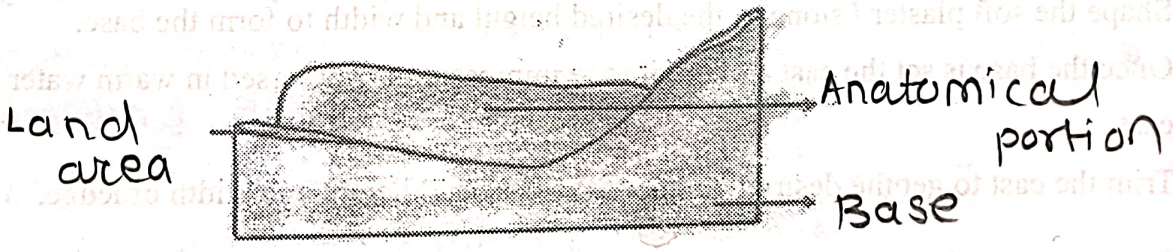
FINAL CAST – MANDIBULAR

OCCLUSAL VIEW



Label the Diagram

LATERAL VIEW



Label the Diagram

PROCEDURE:-

A) BOXING IN METHOD

1. The border of the impression are beaded with thin strips of beading wax, which is placed 2 m beyond the sulcus extension. It is kept 4 mm wide.
2. Boxing wax sheets are sealed to beading wax such that the entire impression is enclosed to fo a box (Boxed-in)
3. Dental stone (Type III Gypsum) is mixed in a stiff rubber bowl to form a creamy mix. It is poured from one end of the impression to gradually fill the impression to the height of th boxed wax. The assembly is vibrated to avoid air entrapment.
4. The dental stone is allowed to completely set.
5. In addition to the above mentioned procedure, In case of mandibular impression a tongue sh form is placed along the lingual border to provide the tongue space.

B) TWO STAGE POURING METHOD:-

1. Dental stone is mixed in a stiff rubber bowl to form a creamy mix.
2. A small quantity is poured from one end of the impression to gradually cover the entire imp ion surface. The assembly is vibrated to prevent air entrapment.
3. Remaining stone is poured to cover the border of the impression. Few elevations are made the stone for anchorage of the base. ALLOW STONE TO SET COMPLETELY.
4. Prior to pouring the base, the dental stone is made wet with water to allow the dental stone to adhere to it while forming the base. Mix the dental plaster / dental stone and pile it on th The impression with the set dental stone is inverted over the plaster.
5. Shape the soft plaster / stone to the desired height and width to form the base.
6. Once the base is set the cast along with the impression is immersed in warm water to retri cast.
7. Trim the cast to get the desired height of the base and height and width of ledge.

QUESTIONS :

1. What are the methods of pouring a final cast?

methods of pouring a final cast
1] Boxing method
2] Two stage pouring method

2. What material is used to pour the final cast?

material used to pour final cast
→ Dental stone [Type III] Gypsum.

3. Why is it important to have a proper height and width of the cast? What the parts of the flasks?

- It is important to have proper height & width the cast because -
1] Accurate Representation of oral structure.
2] Articulation & mounting
3] Ease of handling & inspection
4] Avoiding disortion or over trimming
- Parts of flasks ⇒ Base [lower part]
middle part or Ring
cap [cover]

Date	Nature of Work Done	Sign of Instructor

EXERCISE NO. 8

FABRICATION OF TEMPORARY RECORD BASE

DEFINITIONS:-

It is a temporary form, representing the base of a denture, that is used for making maxillomand (jaw) relation records for arranging teeth and taking try-in.

TYPES OF TEMPORARY RECORD BASES

MATERIALS AND INSTRUMENTS:-

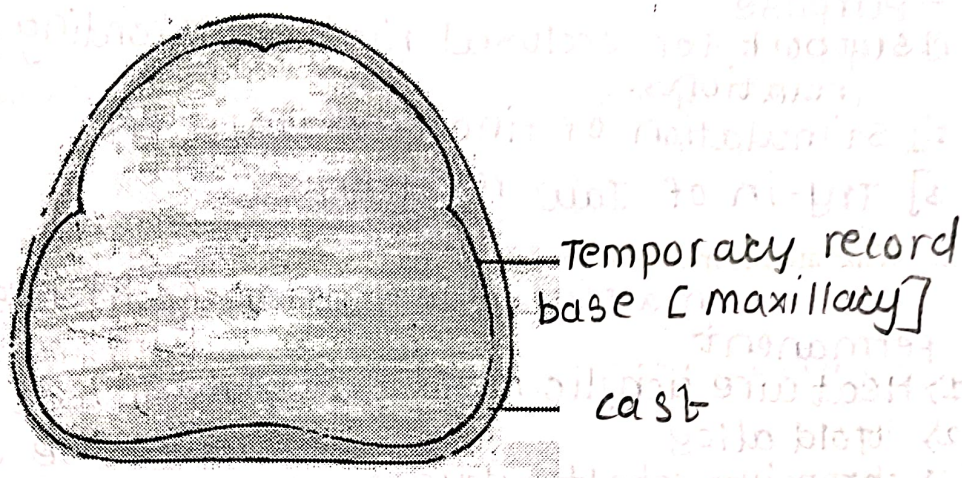
1. Master cast
2. Shellac base plates
3. Small scissors
4. Wax knife
5. Wax spatula
6. Half round file
7. Copying pencil

PROCEDURE :-

1. Soak the dental stone master casts in water, to prevent the shellac base plate from sticking t casts.
2. Mark the extension of the temporary denture base on the master cast.
3. Soften and adapt the shellac base plate over the cast.
4. Cut the excess beyond the outline and roll the margin on the labial and buccal aspects.
5. File and flush the margins on the base plate on the posterior area of both maxillary mandibu record base.
6. Check the record bases properly for extension and adaptation.

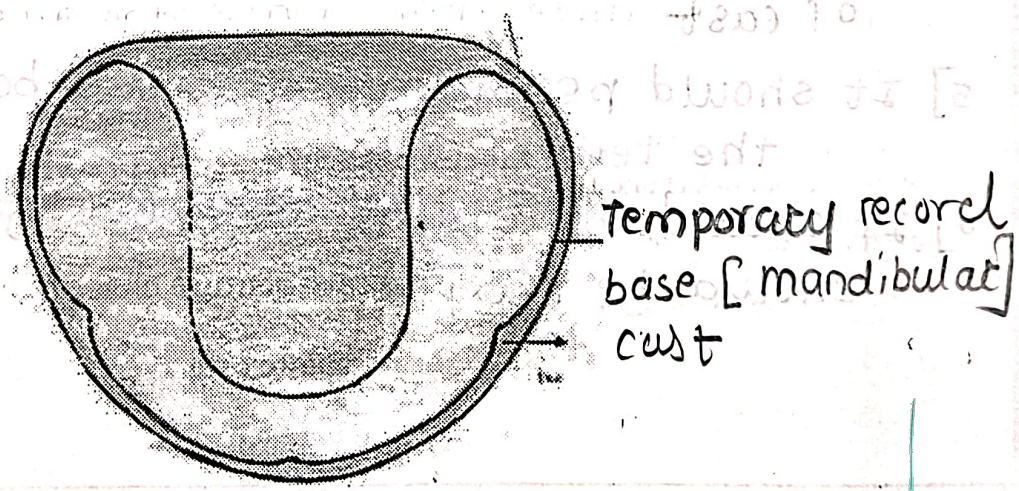
TEMPORARY RECORD BASE

MAXILLARY



Label the Diagram

MANDIBULAR



Label the Diagram

QUESTIONS :

1. What is the purpose of making a record base?

– Purpose

1] support for occlusal rims for recording maxillomandib relations.

2] stimulation of final denature fit

3] Try-in of jaw relation.

2. What are the materials for making record bases?

materials for making record bases

permanent	Temporary
1) Heat cure acrylic resin	1) shellac base plate wax
2) Gold alloy	2) cold cure acrylic resin
3) chromium cobalt alloys	3) Light cure acrylic resin

3. What are the requirements of temporary record bases?

Requirements are as follows –

1] Record bases should be rigid

2] They should be dimensionally stable.

3] Their borders should be the same as the finishe denature.

4] It should be closely adapt to the tissue surfa of cast

5] It should permits its use as a base for setti the teeth.

6] It should be easy to construct & material should be inexpensive.

Date	Nature of Work Done	Sign of Instr

Dr. Harish Kulkarni M.D.S.
Principal
I.K.D.C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dist. Kolhapur 416 127

EXERCISE NO. 9

FABRICATION OF OCCLUSAL RIMS

DEFINITION:-

Occlusal rims are used as provisional substitutes for the planned complete dentures and are used to record jaw relation.

PURPOSE OF OCCLUSAL RIMS:-

They are used to establish :

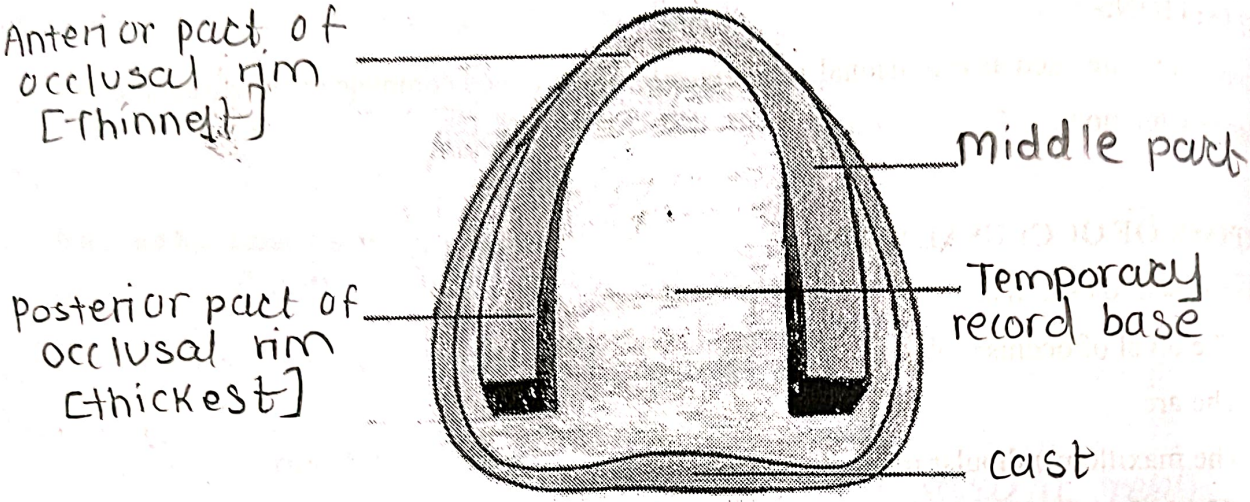
a. The level of occlusal plane.
b. The arch form.
c. The maxillomandibular relation records
   (Vertical and horizontal jaw relationship and estimated interocclusal distance)

MATERIALS AND INSTRUMENTS:-

1. Final casts with record bases
2. Modeling wax sheets
3. Wax knife
4. Hot Plate

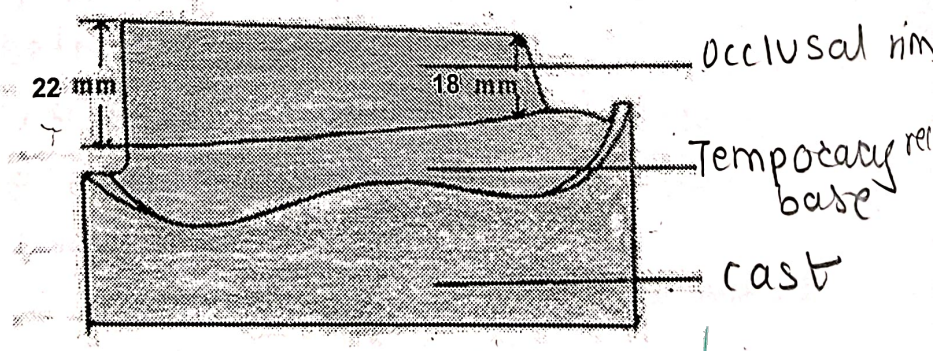
OCCLUSAL RIM MAXILLARY

OCCLUSAL VIEW



Label the Diagram

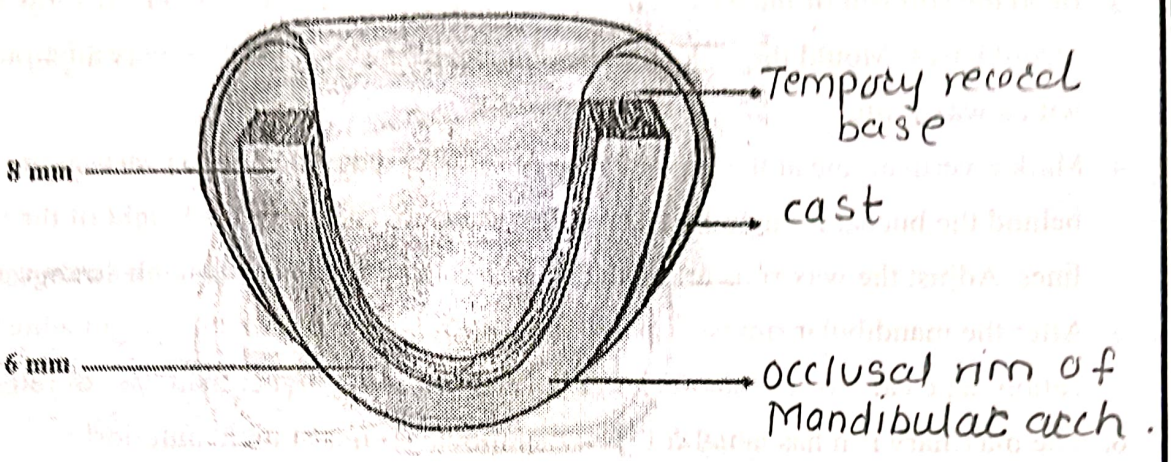
LATERAL VIEW



Label the Diagram

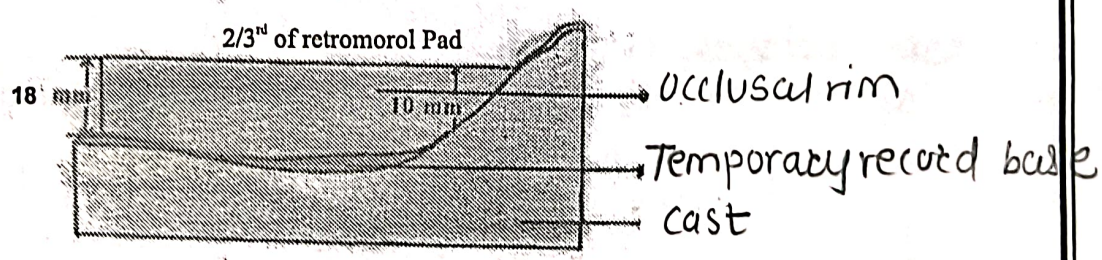
OCCLUSAL RIM MANDIBULAR

OCCLUSAL VIEW



Label the Diagram

LATERAL VIEW



Label the Diagram

PROCEDURE:-

1. Use full length of the wax sheet for maxillary wax rims and 3/4th length of wax sheet for mandibular wax rims.
2. Soften the wax sheet from the edge and roll it gradually to form a soft roll.
3. Bend the soft roll of the wax into a 'U' shaped form and place it over the ridge crest area of the record bases. Mould the wax onto the slopes of the ridge. Seal the wax all around the record base with a wax knife.
4. Mark a vertical line at the base of both (maxillary and mandibular) casts at the midline and 2mm behind the buccal freni on both the sides. Measure and mark the height of the wax rim along these lines. Adjust the wax rims to get the specified height for normal teeth arrangement.
5. After the mandibular rim is prepared in the similar manner and its height adjusted to the specification, take care to see that the height of the rim is not higher than 2/3rd of retromolar pad.
6. The maxillary rim has labial tilt. The mandibular rim is straight anteriorly.
7. Polish the wax with soap and water to obtain a shine.

	ANTERIOR		POSTERIOR	
	HEIGHT	WIDTH	HEIGHT	WIDTH
MAXILLARY	22mm	6mm	18mm	8mm
MANDIBULAR	18mm	6mm	2/3rd of retromolar pad.	8mm

QUESTIONS :

1. What wax is used for fabrication of occlusal rims?

Baseplate wax / modelling wax is used for fabrication of occlusal rims.

2. What is the purpose of occlusal rims?

Purpose of occlusal rims -

1] To establish the level of occlusal plane.
2] To establish maxillomandibular records like vertical & horizontal jaw relation.
3] To record midline, canine line, high lip line, low lip line & interccanine distance.
4] To determine the length & width of artifical teeth.

3. What should be the height of the maxillary wax rim?

Height of maxillary wax rim

- Anterior - 20-22 mm from deepest part region of sulcus.
- posterior - 16-18 mm from deepest part region of buccal sulcus in molar region.

Date	Nature of Work Done	Sign of Instructor

Dr. Harish Kulkarni M.D.S.
Principal
I.K.D.C. & Research Centre,
Ichalkaranji

EXERCISE NO. 10

ARTICULATORS

DEFINITION:-

An Articulator may be defined as a mechanical device that represents the tempero-mandibular jo and jaw members to which maxillary and mandibular casts may be attached to simulate jaw mo ments.

CLASSIFICATION:-

A. Based on theories of occlusion:-

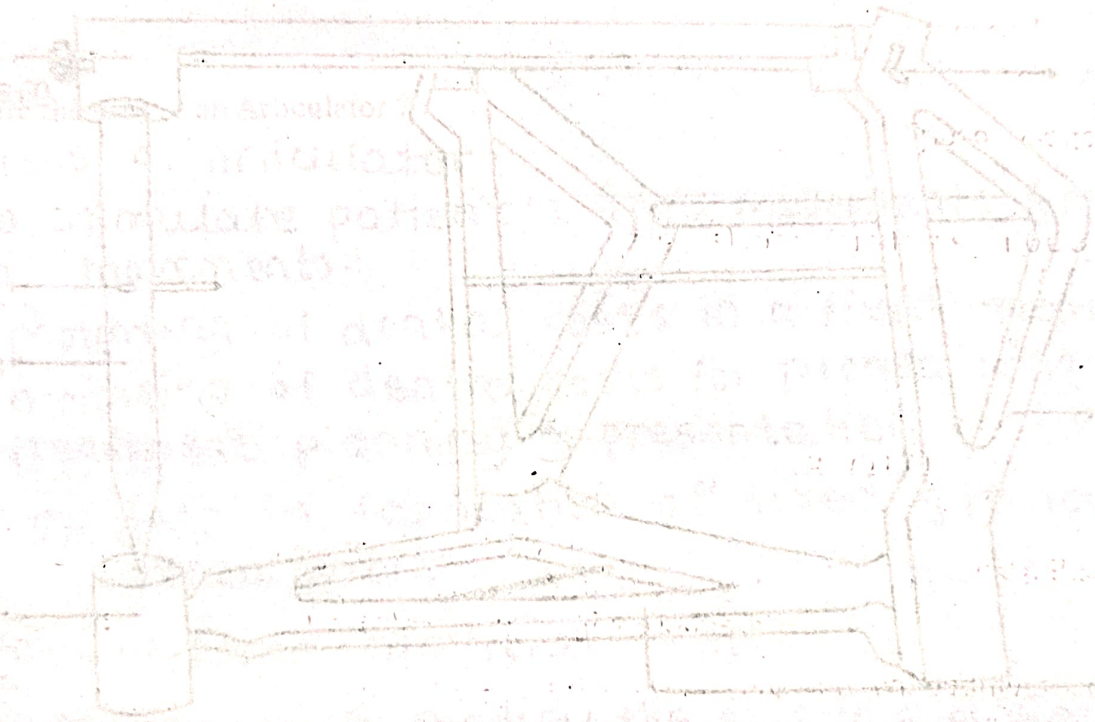
1. Bonwill Theory
2. Conical Theory
3. Spherical Theory

B. Based on adjustability of articulators:-

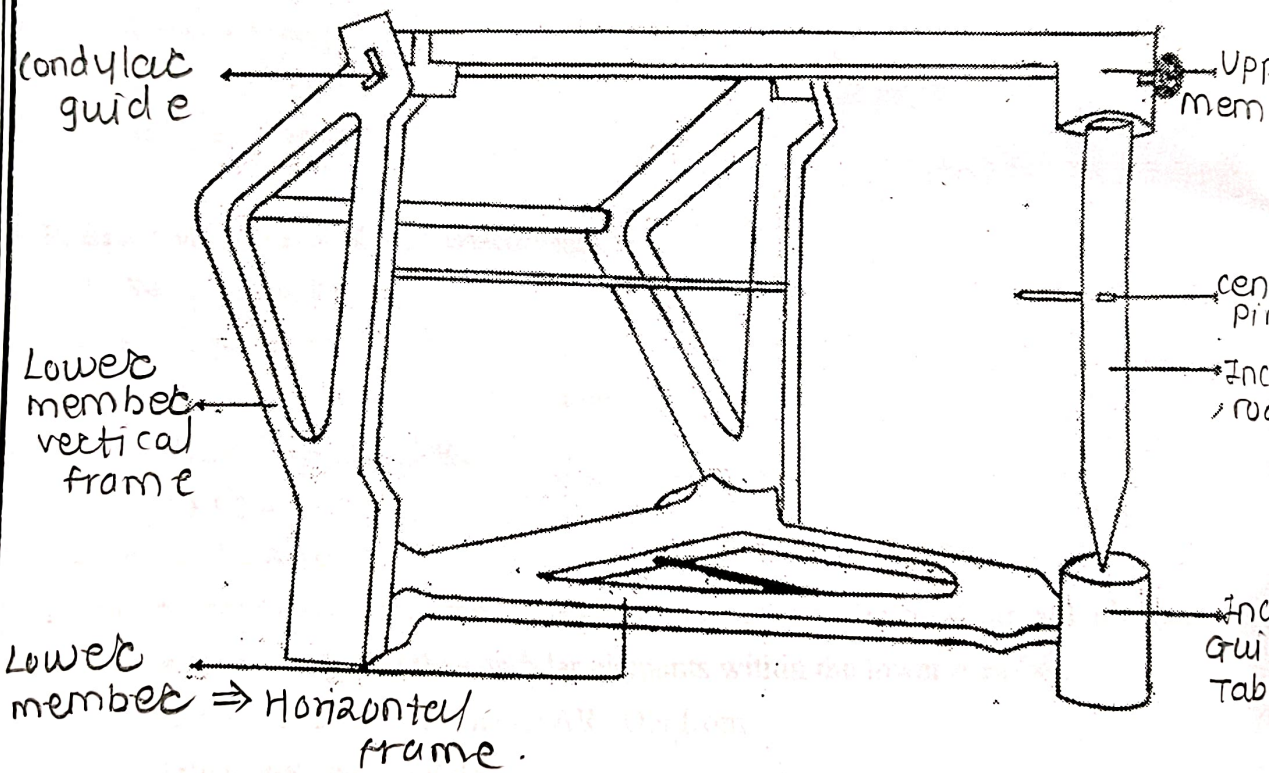
1. Non-adjustable
   a. Simple hinge
   b. Hinge with fixed condylar control
      -Mean value articulator
      By Gysi
2. Semi-adjustable
   a. Arcon: Arcon articulators are those which contains the condylar path elements with upper member and the condylar elements within the lower member.
      -Bergstorm derived the name ARCON from
      Articulator and Condyle.
      -Examples: Hanau Arcon H2
      Whip mix
   b. Non Arcon: Non Arcon articulators contains condylar elements in its upper membe condylar path elements within its lower member
      -Examples : Hanau H2
      Dentatus.
3. Fully-adjustable
   -Examples : Denar
   TMJ

PARTS OF MEAN VALUE ARTICULATORS :-

1. Upper Member
2. .Lower Member
3. Incisal Pin
4. Incisal Rod
5. Incisal Table
6. Condylar Guidance
7. Supporting Rod
8. Mounting Plate



MEAN VALUE ARTICULATOR



Label the Diagram

QUESTIONS :

1. What is the type of articulator you are using, classify it?

- Type of articulator we are using = Mean value articulator [3 point articulator]
- According to adjustability
  - It is non-adjustable articulator ⇒ which has Hinge with fixed condylar control.
- According to michigan university
  - Class 2a ⇒ Eccentric motion permitted is based on average or arbitary values.

2. What are the uses of an Articulator ?

Uses of Articulator -

1] To stimulate patient's TMJ movements & mandibular movements.

2] Mounting of dental casts in a fixed relationship.

3] Mounting of dental casts for proper diagnosis, treatment planning & presentation to the patient

4] To help in fabrication of fixed & removable restorations.

5] To arrange artificial teeth.

6] To correct & modify the existing restoration.

Date	Nature of Work Done	Sign of Instructor

EXERCISE NO. 11

TRANSFER OF JAW RELATIONS TO THE ARTICULATO

MAINTAINANCE OF THE ARTICULATOR:-

1. Clean and oil the articulator.
2. Check the position of the vertical incisal pin.
3. The lower end of the incisal pin should touch the incisal table.
4. The horizontal incisal pin should be in its position.
5. Flush with the upper arm of the articulator.

MATERIALS AND INSTRUMENTS:-

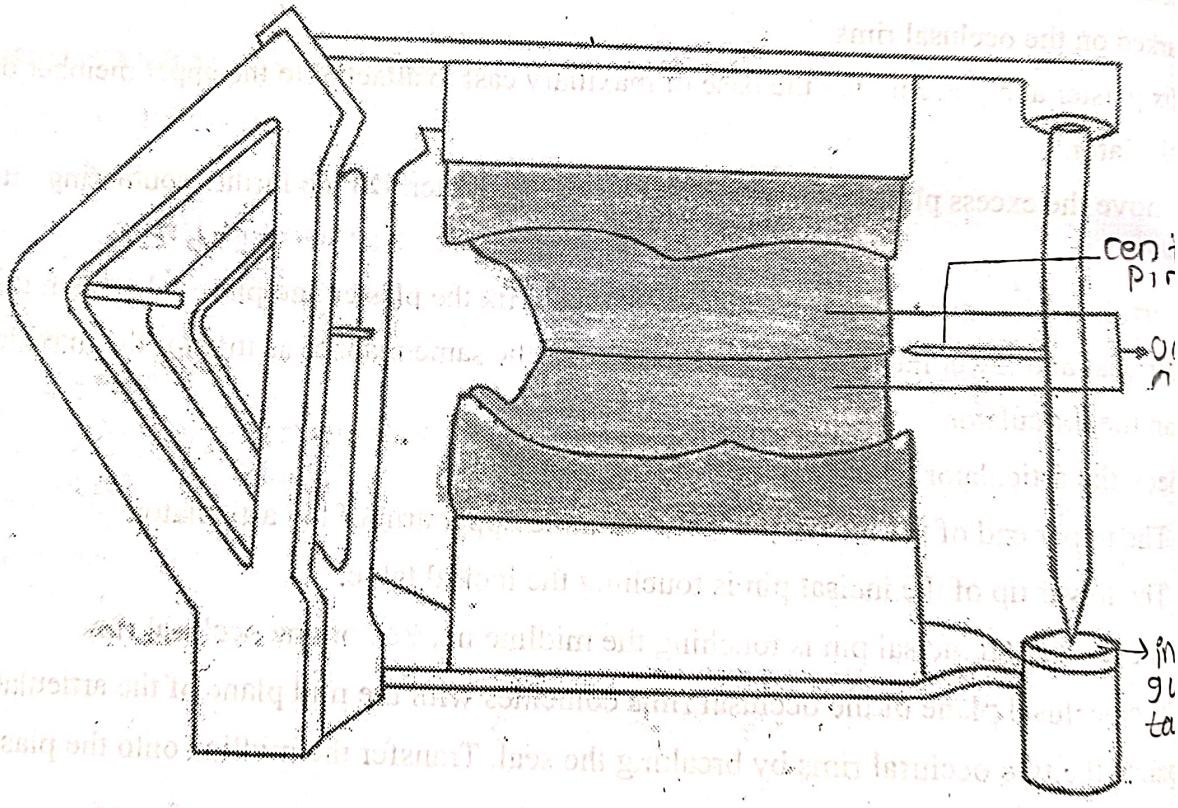
1. Final casts with occlusal rims
2. Dental plaster (Type II Gypsum)
3. Petroleum jelly – Vaseline
4. Carding or modeling wax
5. Straight plaster spatula
6. Black stiff rubber bowl
7. Mean value Articulator
8. Half round file
9. Copying pencil

PROCEDURE:-

1. Prepare V – shaped notches in the base of the cast using a half round file to facilitate laboratory remounting procedures. The notches should be wide, shallow and sharp.
2. Seal the occlusal rims in a Class I relationship. Mark the midline, canine line and high lipline.
3. Seal the temporary bases to the cast to prevent the movement of the record base on the cast.
4. Lubricate the bases of both maxillary and mandibular casts with a thin layer of petroleum jelly.
5. Place lumps of soft casting wax or softened modeling wax at three points on the lower member and place the cast with sealed wax rims on the wax supports on them such that they are center when viewed from the top. When viewed from the side, the occlusal plane of the occlusal rims should be at the midplane of the articulator. The horizontal incisal pin should touch the midline marked on the occlusal rims.
6. Mix plaster and place it over the base of maxillary cast to attach it to the upper member of the articulator.
7. Remove the excess plaster after the initial set of the plaster. Do the further contouring after final set.
8. Invert the articulator and remove the wax lumps. Mix the plaster and place it between the mandibular cast and lower member of the articulator in the same manner as that for the maxillary cast.
9. Clean the articulator.
10. Check the articulator after mounting for the following:
    a. The upper end of the incisal pin flush with the upper arm of the articulator.
    b. The lower tip of the incisal pin is touching the incisal table.
    c. The horizontal incisal pin is touching the midline marked on the occlusal rim.
    d. The occlusal plane of the occlusal rims coincides with the mid plane of the articulator.
11. Separate the two occlusal rims by breaking the seal. Transfer the midline onto the plaster attaching the cast to the articulator.

Dr. Harish Kulkarni M.D.S.
Principal
T. K. D. C. & Research Centre,
New Pargaon, Tal. Hatkanangle
Dist. Kolhapur 416 137

TRANSFER OF JAW RELATION TO MEAN VALUE ARTICULATOR



Label the Diagram

QUESTIONS :

1. What is the type of articulator you are using?

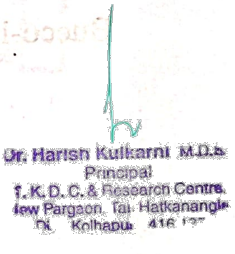
   The articulator we are using is 3 point articulator which is also known as mean value articulator.

2. What points do you check prior to mouting to wax occlusal rims on the articulator?

   i) To check for midline
   ii) To check perfect contact between maxillary & mandibular rims.

3. Is this articulator you are using a arcon or non-arcon type of articulator?

   ⇒ It is non-arcon type of articulator
   i.e. non-arcon, non adjustable articulator.



Date	Nature of Work Done	Sign of Instructor