

SECOND YEAR B.D.S. DEGREE EXAM
(Common to First Year Paper III - Modified Regulation III Candidates)

PAPER III – DENTAL MATERIALS

Q.P Code: 544208

Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: (2 x 10 = 20)

1. Classify Elastomeric impression materials. Write in detail about addition silicone.
2. Explain in detail about Dentin Bonding agents.

II. Write Notes on: (10 x 5 = 50)

1. Lost wax Technique.
2. Biocompatibility.
3. Implant Materials.
4. Fluid resin Technique.
5. Polymerization Cycle.
6. Coupling Agent.
7. Cavity Liners.
8. Calcium Hydroxide.
9. Admixed Alloys.
10. Pit and Fissure Sealants.

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Time: 180 Minutes

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I. Elaborate on: (2 x 10 = 20)

1. Impression materials - Give the composition, physical and mechanical properties of silicon rubber base impression material, add note on other elastic impression material used in dentistry.
2. Dental waxes - Give the composition, properties, manipulation, techniques of Inlay casting waxes and explain various causes for wax distortion and the remedies.

II. Write Notes on: (10 x 5 = 50)

1. Hygroscopic expansion.
2. Surface Hardness.
3. Micro filled light cure composite resins.
4. Zinc Polycarboxylate cement.
5. Sprue.
6. Electrolytic polishing.
7. Dual cure composites.
8. Eames technique.
9. Separating media.
10. Cavity liners and Bases.

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I. Elaborate on: (2 x 10 = 20)

1. Explain the term Biocompatibility of Dental materials and describe briefly adverse effects from Dental Materials.
2. Describe the High Copper Silver amalgam alloys, their amalgamation, micro structure and their advantages.

II. Write Notes on: (10 x 5 = 50)

1. Epoxy Resin Dies.
2. Inlay waxes.
3. Divestment.
4. 18 - 8 Stainless Steel.
5. Die Hardener.
6. Anti- Cariogenic.
7. Organic Fillers.
8. Implant materials.
9. Cavity Varnishes.
10. Gold Foil.

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Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: **(2 x 10 = 20)**

1. Classify the denture base materials. Describe the ideal requirements of denture base materials.
2. Describe the compositions of various types of Resins and their functions and uses.

II. Write Notes on: **(10 x 5 = 50)**

1. Soldering and welding.
2. Syneresis and imbibitions.
3. Separating Media.
4. CAD CAM.
5. Electroformed Dies.
6. Lost wax technique.
7. Hot spot Porosity.
8. Dycal.
9. Coupling agent.
10. Frozen glass Techniques.

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Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: (2 x 10 = 20)

1. Dental ceramics – definition, properties and classification, add a note on strengthening of ceramics.
2. Definition, classification and ideal requirements of dental cements and add a note on agents used for pulp protection.

II. Write Notes on: (10 x 5 = 50)

1. Annealing.
2. Injection molding technique.
3. Coefficient of thermal expansion.
4. Delayed expansion.
5. Flux and anti flux.
6. Sprue former.
7. Dentine bonding agents.
8. Dentifrices.
9. Types of gypsum products.
10. Dental inlay casting wax.

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Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: (2 x 10 = 20)

1. Define impression and add notes on the ideal properties, applications and classification of impression materials.
2. Definition, requirements and classification of dental casting investments and a note on setting expansion.

II. Write Notes on: (10 x 5 = 50)

1. Artificial denture teeth material.
2. Dimensions of colour.
3. Cement bases.
4. Low copper alloys.
5. All ceramic restorations.
6. Viscosity of dental materials.
7. Forms of direct filling gold.
8. Strain hardening of wrought alloys.
9. Room temperature vulcanizing silicones.
10. Thermal properties of inlay waxes.

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Q.P Code: 544208

Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: **(2 x 10 = 20)**

1. Classify gypsum products. Discuss in detail about their setting reaction.
2. Finishing and polishing agents used in dentistry.

II. Write Notes on: **(10 x 5 = 50)**

1. Soldering and welding.
2. Inlay waxes.
3. Pit and fissure sealants.
4. Dimensional changes of amalgam.
5. Fluoride releasing cements.
6. Stages in addition polymerization.
7. Biocompatibility of dental materials.
8. Dicor.
9. Zinc phosphate cement.
10. Syneresis and Imbibition.

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Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: (2 x 10 = 20)

1. Dental implants – definition, classification and notes on implant materials and surface coatings.
2. Define abrasion and polishing, notes on desirable characteristics of an abrasive and abrasive instrument designs.

II. Write Notes on: (10 x 5 = 50)

1. Stainless Steel.
2. Compression molding technique.
3. Acid etching technique.
4. Admixed alloys.
5. Impression compound.
6. Soft Liners.
7. Galvanic corrosion.
8. Separating media.
9. Miracle Mix.
10. Co- Cr- Ni alloys.

[LR 706]

DECEMBER 2020
(AUGUST 2020 SESSION)

Sub. Code: 4208

SECOND YEAR B.D.S. DEGREE EXAM
(Common to First Year Paper III - Modified Regulation III Candidates)

PAPER III – DENTAL MATERIALS

Q.P Code: 544208

Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: (2 x 10 = 20)

1. Syneresis and Imbibition.
2. Classify Dental Cements. Discuss in detail about Glass Ionomer Cement.

II. Write Notes on: (10 x 5 = 50)

1. Principles of Adhesion.
2. Classification of Dental Amalgam.
3. Acid Etching Technique.
4. Classification of Dental Composites.
5. Calcium Hydroxide Cement.
6. Dimensional Stability of Impression Materials.
7. Tarnish and Corrosion.
8. Shape Memory of Nickel Titanium Alloys.
9. Impression Compound.
10. Methods of Strengthening Ceramics.

[BDS 0921]

SEPTEMBER 2021
(FEBRUARY 2021 SESSION)

Sub. Code: 4208

SECOND YEAR B.D.S. DEGREE EXAM
(Common to First Year Paper III - Modified Regulation III Candidates)

PAPER III – DENTAL MATERIALS

Q.P Code: 544208

Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: **(2 x 10 = 20)**

1. Classify Impression Materials. Discuss in detail about Hydrocolloids.
2. Classify and discuss Dentin Bonding Agents. Add a note on Acid Etching Technique.

II. Write Notes on: **(10 x 5 = 50)**

1. Soft Liners.
2. Hygroscopic Expansion.
3. Tarnish and Corrosion.
4. Composition and Requirements of Inlay Wax.
5. Classification and Forms of Direct Filling Gold.
6. Setting Reaction of High Copper Amalgam.
7. Agents for Pulp Protection.
8. Shape Memory of Nickel Titanium Alloys.
9. Coefficient of Thermal Expansion.
10. Methods of Strengthening Ceramics.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BDS 1221]

**DECEMBER 2021
(AUGUST 2021 SESSION)**

Sub. Code: 4208

**SECOND YEAR B.D.S. DEGREE EXAM
(Common to First Year Paper III - Modified Regulation III Candidates)**

PAPER III – DENTAL MATERIALS

Q.P Code: 544208

Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: **(2 x 10 = 20)**

1. Define and classify Noble Metals. Write in detail the classification, composition, properties, manipulation, technical considerations and uses of Direct Filling Gold.
2. Write in detail the reasons casting failures and methods to avoid them.

II. Write Notes on: **(10 x 5 = 50)**

1. Induction casting machine.
2. Pressable ceramics.
3. Mercury toxicity.
4. Metal modified Glass Ionomer Cements.
5. Co-efficient of thermal expansion.
6. Elastomeric impression materials.
7. Inlay wax.
8. Cavity liners.
9. Rubber abrasives.
10. Delayed expansion.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BDS 0522]

**MAY 2022
(FEBRUARY 2022 SESSION)**

Sub. Code: 4208

**B.D.S. DEGREE EXAM
(Common to First Year Paper III Modified Regulation III Candidates)**

**SECOND YEAR
PAPER III – DENTAL MATERIALS**

Q.P Code: 544208

Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: **(2 x 10 = 20)**

1. Classify Impression Materials. Write in detail the Composition, Properties, setting reaction, Manipulation and uses of Irreversible Hydrocolloid Impression Materials.
2. Classify Investments Materials. Write in detail the Composition, Properties, Manipulation, Technical considerations and uses of Gypsum bonded Investments.

II. Write Notes on: **(10 x 5 = 50)**

1. CAD – CAM Procedure.
2. Metal Ceramic Bond.
3. Die Stone.
4. Gamma – 2 Phase.
5. Resin modified Glass Ionomer Cements.
6. Casting Ring Liners.
7. Zinc – Oxide Eugenol Impression Paste.
8. Resin Cements.
9. Denting Bonding Agents.
10. Cavity Varnish.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BDS 1222]

**DECEMBER 2022
(AUGUST 2022 EXAM SESSION)**

Sub. Code: 4208

**B.D.S. DEGREE EXAM
(Common to First Year Paper III Modified Regulation III Candidates)**

**SECOND YEAR
PAPER III – DENTAL MATERIALS**

Q.P Code: 544208

Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: **(2 x 10 = 20)**

1. Classify impression materials. Write the composition, manipulation and uses of zinc oxide Eugenol impression paste.
2. Classify Direct Filling Gold. Discuss the technique for removal of surface impurities. Add a note on compaction of Direct Filling Gold.

II. Write Notes on: **(10 x 5 = 50)**

1. Difference between Acrylic and Porcelain teeth.
2. Hue, Chroma and Value importance in shade selection.
3. Phosphate bonded investment.
4. Porosities in dental casting.
5. Methods of strengthening ceramics.
6. Newer developments of glass Ionomer cement.
7. Mercury hygiene recommendations in dental operator room.
8. Inlay wax.
9. Hybrid layer. Mechanism of bonding in Resin modified glass ionomer cement.
10. Dental burs.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BDS 0323]

**MARCH 2023
(SEPTEMBER 2022 EXAM SESSION)**

Sub. Code: 4208

**B.D.S. DEGREE EXAMINATION
(Common to First Year Paper III Modified Regulation III Candidates)**

SECOND YEAR

PAPER III – DENTAL MATERIALS

Q.P Code: 544208

Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: **(2 x 10 = 20)**

1. Classify Gypsum products. Write in detail about their setting reaction.
2. Explain in detail about the Generations in Dentin Bonding agents. Write a note on acid etching.

II. Write Notes on: **(10 x 5 = 50)**

1. Types of waxes.
2. Glass ionomer cements.
3. Syneresis and Imbibitions.
4. Admixed alloy.
5. Tarnish and corrosion.
6. Methods of strengthening ceramics.
7. Elastomeric impression materials.
8. Casting ring liners.
9. Shape memory of Nickel Titanium Alloys.
10. Hybrid composite.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BDS 0723]

JULY 2023

Sub. Code: 4208

**B.D.S. DEGREE EXAMINATION
(Common to First Year Paper III Modified Regulation III Candidates)**

SECOND YEAR

PAPER III – DENTAL MATERIALS

Q.P Code: 544208

Time: 180 Minutes

Maximum: 70 Marks

I. Elaborate on: **(2 x 10 = 20)**

1. Classify Impression materials. Explain in detail about the composition and setting reaction, manipulation, physical and mechanical properties of irreversible Hydrocolloid.
2. Discuss in detail about the various generation of Dentin Bonding Agents.

II. Write Notes on: **(10 x 5 = 50)**

1. Biocompatibility of Dental Implants.
2. Atraumatic Restorative Technique.
3. Micro filled composites.
4. Glazing of Dental Ceramics.
5. Casting porosity.
6. Electroformed dies.
7. Zinc polycarboxylate cement.
8. Nickel Titanium Alloys.
9. Eames technique.
10. Accelerator and retarders of Gypsum.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BDS 0224]

FEBRUARY 2024

Sub. Code: 4208

B.D.S. DEGREE EXAMINATION

(Common to First Year Paper III Modified Regulation III Candidates)

SECOND YEAR

PAPER III – DENTAL MATERIALS

Q.P Code: 544208

Time: Three Hours

Maximum: 70 Marks

Answer All Questions in the same order

Draw suitable Diagrams wherever necessary

I. Elaborate on:

(2 x 10 = 20)

1. Classify Dental Cements. Write in detail about composition, uses, manipulation and properties of Glass Ionomer Cement.
2. Explain in detail about the various Dental Alloys, its composition, uses, properties, advantage and disadvantage.

II. Write Notes on:

(10 x 5 = 50)

1. Dental implant materials.
2. Direct filling gold.
3. Flux and antflux.
4. Liners and bases.
5. Syneresis and imbibition.
6. Dimensions of colour.
7. 18-8 stainless steel.
8. Dimensional changes of Amalgam restoration.
9. Pit and fissure sealants.
10. Classification of Dental Ceramics.
