

February 2011

[KY 706]

Sub. Code : 4173

**SECOND B.D. S. DEGREE EXAMINATION.**  
(Regulations for the candidates admitted from 2008-09 onwards)

**Paper III - DENTAL MATERIALS**

*Q.P. Code : 544173*

**Time : Three hours**

**Maximum : 70 marks**

Answer **ALL** questions.

**I. Essays:**

**(2 x 15 = 30)**

1. Dental resins – classify, write their requisites and add a note on stages in addition polymerization.
2. Classification of dental cements, add notes on properties of glass ionomer cement and on resin-modified glass ionomer cement.

**II. Write short notes on :**

**(6 x 5 = 30)**

1. Compression molding technique.
2. Brazing.
3. High copper alloys.
4. Pit and Fissure sealants.
5. Non eugenol pastes.
6. Tests for setting time of gypsum.

**III. Short answers questions :**

**(5 x 2 = 10)**

1. Adherend.
2. Elastic memory.
3. Delayed expansion.
4. Conditioner.
5. Synthetic gypsum.

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**August 2011**

**[KZ 706]**

**Sub. Code : 4173**

**SECOND B.D.S. DEGREE EXAMINATION**

**DENTAL MATERIALS**

*Q. P. Code : 544173*

**Time : Three hours**

**Maximum: 100 Marks**

Answer **ALL** questions

**I. Essay Questions:**

**(2 x 20 = 40)**

1. Write in detail about dental ceramics.
2. Describe the casting procedure of dental alloys and discuss in detail about casting failures.

**II. Write Short notes on :**

**(10 x 6 = 60)**

1. Classify gypsum products and mention their clinical uses.
2. High copper alloys.
3. Write short notes on Inlay wax.
4. Explain the soldering procedure.
5. 18-8 stainless steel.
6. Dental abrasives and its classification. Mention the uses of various abrasives.
7. Sandwich technique.
8. Pit and fissure sealants.
9. Causes of porosity in denture base resin.
10. Electroformed dies.

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February 2012

[LA 706]

Sub. Code: 4173

**SECOND B.D.S. DEGREE EXAMINATION**

**PAPER III**

**DENTAL MATERIALS**

*Q.P.Code: 544173*

**Time: Three hours**

**Maximum: 70 Marks**

**Answer ALL questions in the same order  
Draw Suitable diagrams wherever necessary**

**I. Elaborate on: (2×10=20)**

1. Describe about various dental alloys, its composition, uses, advantages and disadvantages.
2. Discuss in detail about denture base resin its technical consideration and processing procedures.

**II. Write notes on: (10×5=50)**

1. Resin modified glass Ionomer cement.
2. Write about various Luting agents.
3. Pulpal Protection agents.
4. Dental Implants.
5. Dentirfices.
6. Tissue conditioners.
7. Methods of strengthening ceramics.
8. Write short notes on polyvinyl siloxane.
9. Enamel and dentin bonding agents.
10. Cleaning of the dental casting.

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[LB 706]

AUGUST 2012

Sub. Code: 4173

**SECOND YEAR B.D.S. DEGREE EXAM**

**PAPER III – DENTAL MATERIALS**

*Q.P.Code: 544173*

**Time: 180 Minutes**

**Maximum: 100 Marks**

**Answer ALL questions in the same order**

**I. Elaborate on:**

**Pages Time Marks  
(Max.)(Max.)(Max.)**

- |   |    |    |    |
|---|----|----|----|
| 1. Gypsum bonded investment material.                               | 19 | 30 | 20 |
| 2. Composition of ceramic and the Methods of Strengthening Ceramic. | 19 | 30 | 20 |

**II. Write notes on:**

- |  |   |    |   |
|--|---|----|---|
| 1. Metamerism and Fluorescence.                                  | 3 | 10 | 5 |
| 2. Heat sources in soldering and welding.                        | 3 | 10 | 5 |
| 3. Base plate wax.   | 3 | 10 | 5 |
| 4. Strength of Amalgam.  | 3 | 10 | 5 |
| 5. Pulp Capping agent.   | 3 | 10 | 5 |
| 6. Gold foil.  | 3 | 10 | 5 |
| 7. Hybrid Composite.   | 3 | 10 | 5 |
| 8. Tissue Conditioners.  | 3 | 10 | 5 |
| 9. 18/8 Stainless Steel alloy.                                   | 3 | 10 | 5 |
| 10. Impression Techniques with Elastomeric Impression Materials. | 3 | 10 | 5 |
| 11. Dentifrices.   | 3 | 10 | 5 |
| 12. Porosity in acrylic resin.                                   | 3 | 10 | 5 |

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[LC 706]

FEBRUARY 2013

Sub. Code: 4173

SECOND YEAR B.D.S. DEGREE EXAM

PAPER III – DENTAL MATERIALS

*Q.P.Code: 544173*

**Time: 180 Minutes**

**Maximum: 70 Marks**

**I. Elaborate on:**

**(2x10=20)**

1. Failures in Casting.
2. Tarnish and Corrosion.

**II. Write notes on:**

**(10x5=50)**

1. Hardness.
2. Crazeing of Dental Resin.
3. Acid etch technique.
4. Biocompatibility Issues in Dentistry.
5. Divestment.
6. Delayed Expansion.
7. Causes of Remaking Hydrocolloid Impressions.
8. Implant Materials.
9. Bonded Abrasives.
10. Fluid Resin Technique.

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[LD 706]

AUGUST 2013

Sub. Code: 4173

**SECOND YEAR B.D.S. DEGREE EXAM  
PAPER III – DENTAL MATERIALS**

*Q.P.Code: 544173*

**Time: 180 Minutes**

**Maximum: 70 Marks**

**I. Elaborate on:**

**(2x10=20)**

1. The properties that describe the Strength of materials.
2. Dentin bonding agents.

**II. Write notes on:**

**(10x5=50)**

1. Laminate Impression Technique.
2. Heat Treatment of Gold Alloys.
3. Nitinol.
4. Condensation of Amalgam.
5. Electroformed Dies.
6. Sandwich Technique.
7. Classify Abrasives and Write about any 5 abrasives.
8. Dycal.
9. Desirable properties of Inlay Wax.
10. Resin Cements.

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**SECOND YEAR B.D.S. DEGREE EXAM**  
**PAPER III – DENTAL MATERIALS**  
*Q.P Code: 544173*

**Time: 180 Minutes**

**Maximum: 70 marks**

**I. Elaborate on:**

**(2X10=20)**

1. Define and classify non aqueous impression materials. What are the merits of addition silicones? Mention the consistencies they are commonly dispensed for routine usage.
2. What are dentin bonding agents? Explain their generations.

**II. Write Notes on:**

**(10X5=50)**

1. Tests for biocompatibility
2. Chemically setting hydrocolloids
3. CAD - CAM
4. Imbibitions and syneresis
5. Zinc oxide Eugenol impression paste.
6. Curing cycles in denture base resins.
7. Inlay wax-composition and role of each ingredient.
8. Liners and bases
9. Resin modified GIC
10. High copper amalgam

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[LF 706]

AUGUST 2014

Sub. Code: 4173

**SECOND YEAR B.D.S. DEGREE EXAM  
PAPER III – DENTAL MATERIALS**

*Q.P Code: 544173*

**Time: 180 Minutes**

**Maximum: 70 marks**

**I. Elaborate on:** **(2X10=20)**

1. Chromium cobalt alloys used in dentistry. Explain composition, uses, advantages and disadvantages.
2. Composite resins- Classification, Functions, uses and compare small particle composites and Hybrid composite.

**II. Write Notes on:** **(10X5=50)**

1. Soldering
2. Tissue conditioners
3. Cermets
4. Flux and antflux
5. Ductility and malleability
6. Mechanical bonding
7. Die Materials
8. Micro leakage
9. Cavity liner
10. Toxicity

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**SECOND YEAR B.D.S. DEGREE EXAM  
PAPER III – DENTAL MATERIALS**

*Q.P Code: 544173*

**Time: 180 Minutes**

**Maximum: 70 Marks**

**I. Elaborate on:**

**(2 x 10 = 20)**

1. Classify gypsum products. Elaborate how they differ in physical structure, manufacture and manipulation for dental use.
2. Write the composition of Glass ionomer cement? Explain its setting reaction and various clinical applications.

**II. Write Notes on:**

**(10 x 5 = 50)**

1. Imbibitions and syneresis.
2. Applications for dental ceramics.
3. Frozen slab technique.
4. Strain hardening.
5. Phosphate bonded investments.
6. Hue, value and chroma.
7. Enumerate the steps in dental casting.
8. Brazing.
9. Mercury hazards.
10. Trituration.

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[LH 706]

AUGUST 2015

Sub. Code: 4173

**SECOND YEAR B.D.S. DEGREE EXAM**

**PAPER III – DENTAL MATERIALS**

*Q.P Code: 544173*

**Time: 180 Minutes**

**Maximum: 70 Marks**

**I. Elaborate on:**

**(2 x 10 = 20)**

1. Classify casting investment. Write in detail about composition, setting reaction of Phosphate bonded investment.
2. Classify Dental Cements. Write in detail about resin modified glass ionomer cement (Hybrid Ionomer).

**II. Write Notes on:**

**(10 x 5 = 50)**

1. Dentin Bonding Agent.
2. Creep.
3. Tarnish and Corrosion.
4. Stress and Strain.
5. Eutectic and Peritectic Alloys.
6. Hygroscopic Expansion.
7. Abrasion and Erosion.
8. Soldering and Welding.
9. Hardening heat treatment.
10. Inlay wax.

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[LI 706]

FEBRUARY 2016

Sub. Code: 4173

**SECOND YEAR B.D.S. DEGREE EXAMINATION**

**PAPER III – DENTAL MATERIALS**

*Q.P. Code : 544173*

**Time : Three Hours**

**Maximum : 70 Marks**

**Answer All Questions**

**I. Elaborate on:**

**(2 x 10 = 20)**

1. Define composite resin and classify. Discuss in detail the composition, properties and uses of composite resin. Add a note on polymerization shrinkage.
2. What are dental ceramics? Discuss in detail composition, classification properties and uses of dental ceramics.

**II. Write Notes on:**

**(10 x 5 = 50)**

1. Mercury toxicity.
2. Zinc phosphate cement.
3. Microleakage.
4. Setting reaction of Silver amalgam.
5. Calcium hydroxide.
6. Ductility and Malleability.
7. Ringless castings.
8. Tissue conditioners.
9. Hygroscopic expansion.
10. 18-8 stainless steel.

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**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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**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. 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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**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. 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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[LM 706]

FEBRUARY 2018

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 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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**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. 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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**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 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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**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 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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**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. 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.

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