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

Paper III - DENTAL MATERIALS

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 inomer 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 sealents.
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.
5. Synthetic gypsum.
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.


10. Electroformed dies.

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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.


4. Dental Implants.

5. Dentirfices.

6. Tissue conditioners.

7. Methods of strengthening ceramics.

8. Write short notes on polyvinyl siloxane.


10. Cleaning of the dental casting.

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<table>
<thead>
<tr>
<th>I. Elaborate on:</th>
<th>Pages</th>
<th>Time</th>
<th>Marks</th>
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<tbody>
<tr>
<td>1. Gypsum bonded investment material.</td>
<td>19</td>
<td>30</td>
<td>20</td>
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<tr>
<td>2. Composition of ceramic and the Methods of Strengthening Ceramic.</td>
<td>19</td>
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<tr>
<th>II. Write notes on:</th>
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<tr>
<td>1. Metamerism and Fluorescence.</td>
<td>3</td>
<td>10</td>
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<td>2. Heat sources in soldering and welding.</td>
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<td>3. Base plate wax.</td>
<td>3</td>
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<td>4. Strength of Amalgam.</td>
<td>3</td>
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<td>5. Pulp Capping agent.</td>
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<td>6. Gold foil.</td>
<td>3</td>
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<td>7. Hybrid Composite.</td>
<td>3</td>
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<td>8. Tissue Conditioners.</td>
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<td>9. 18/8 Stainless Steel alloy.</td>
<td>3</td>
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<td>10. Impression Techniques with Elastomeric Impression Materials.</td>
<td>3</td>
<td>10</td>
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<td>11. Dentifrices.</td>
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<td>12. Porosity in acrylic resin.</td>
<td>3</td>
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I. Elaborate on:  
1. Failures in Casting.  
2. Tarnish and Corrosion.  

II. Write notes on:  
1. Hardness.  
2. Crazing of Dental Resin.  
3. Acid etch technique.  
5. Divestment.  
6. Delayed Expansion.  
7. Causes of Remaking Hydrocolloid Impressions.  
8. Implant Materials.  
10. Fluid Resin Technique.  

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I. Elaborate on:

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

II. Write notes on:

1. Laminate Impression Technique.
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.
I. Elaborate on:  

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:  

1. Tests for biocompatibility
2. Chemically setting hydrocolloids
3. CAD - CAM
4. Imbibitions and syneresis
5. Zinc oxide Eugenol impression paste.
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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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 antiflux
5. Ductility and malleability
6. Mechanical bonding
7. Die Materials
8. Micro leakage
9. Cavity liner
10. Toxicity

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


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.
10. Inlay wax.

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I. Elaborate on: 

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: 

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.