

Seat No.: _____

PRN: _____

SANKALCHAND PATEL UNIVERSITY
BDS – (2nd) Year – EXAMINATION, JAN - FEB 2024

Subject Code: : 1DS1010104
Subject Name: Dental Materials

Date: 19/02/2024

Time: 3 Hrs.

Total Marks: 70

Instructions:

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A (Prosthodontics)

- Q.1 Structured Long Essay with options (1 out of 2) 10
- A Define impression and write down about the ideal properties, applications, and classification of impression materials.
- B Dental ceramics – definition, properties, and classification and a note on strengthening of ceramics.
- Q.2 Short Essay with options (3 out of 5) 15
- A Low copper alloys.
- B Injection molding technique.
- C Dental inlay casting wax.
- D Dimensions of colour.
- E Types of gypsum products.
- Q.3 Objective type Without options 5
- A Composition of Glass ionomer cement.
- B Sandwich technique.
- C Fluxes and anti fluxes.
- D Composition of addition silicone impression material.
- E Define tarnish and corrosion.
- Q.4 MCQ's Without options 5
- 1 Which of the following impression materials can be electroplated without risk of distortion ?
- a) polysulphide.
- b) condensation silicone.
- c) addition silicone.
- d) hydrocolloid impressions.

- 2 Stiffness refers to
 - a) shrinkage on cooling.
 - b) expansion on cooling.
 - c) resistance to elastic deformation.
 - d) expandability on heating.
- 3 What is trituration ?
 - a) same as erosion.
 - b) same as corrosion.
 - c) surface discoloration of metal.
 - d) mixing of amalgam alloy with mercury.
- 4 The cement which has antibacterial property is
 - a) Glass ionomer cement.
 - b) copper oxide cement.
 - c) polycarboxylate cement.
 - d) zinc phosphate cement.
- 5 Which of the following impression material is elastic ?
 - a) Impression compound.
 - b) Zinc oxide eugenol paste.
 - c) Wax
 - d) Polyether rubber base

SECTION – B (Conservative)

- Q.5 Structured Long Essay with options (1 out of 2) 10
- A Classify dental cement. Write in detail about type, composition, setting reaction & property of Glass Ionomer Cements.
 - B Define Composite resin. Describe in detail about Classification, Composition & Contraindication of composite resin.
- Q.6 Short Essay with options (3 out of 5) 15
- A Direct Filling Gold
 - B Zinc Phosphate Cement
 - C Properties of Dental Amalgam
 - D Calcium Hydroxide Cement
 - E Setting Reaction of High Copper Silver Amalgam
- Q.7 Objective type Without options 5
- A What is Annealing
 - B Which ingredient act as scavenger in silver amalgam?
 - C Write name of cements which are chemically bond to tooth structure?
 - D Write name of chemical used to etch enamel
 - E What is eames ratio

Q.8 MCQ's Without options

- 1 Frozen slab technique is applicable to:
 - A. Zinc phosphate cement
 - B. Glass ionomer cement
 - C. Zinc oxide Eugenol cement
 - D. Resin cement
- 2 Which one of the following dental cement accelerates the formation of reparative dentin?
 - A. Eugenol
 - B. Calcium hydroxide
 - C. Zinc oxide
 - D. Silica
- 3 In which class of cavities is amalgam contraindicated:
 - A. Class 1
 - B. Class 2
 - C. Class 4
 - D. Class 5
- 4 Fluoride rich materials include?
 - A. Silicate cement
 - B. Glass ionomer cement
 - C. Polycarboxylate cement
 - D. All of the above
- 5 Contamination of Zinc-containing amalgam by moisture during trituration or condensation:
 - A. Cause a marked expansion
 - B. Increase the setting time
 - C. Results in a sharp decrease in flow
 - D. Has no appreciable effect on amalgam

Narsinhbhai Patel Dental college & Hospital, Visnagar

BDS – 2nd Year – EXAMINATION – 2nd Internal Examination -2023-24

Subject Name: DENTAL MATERIALS

Time: 2 Hrs.

Date: 22/04/2024

Total Marks: 50

Instructions: 1. Use separate answer book for each section.
3. Draw diagrams wherever necessary.

2. Attempt all questions
4. Figures to the right indicate marks.

SECTION – A

Q.1	Answer Structured Long Essay	07 Marks
A)	Classify Impression Materials. Write in detail about irreversible hydrocolloids.	
Q.2	Write Short Essay (Any 3 out of 5)	12 Marks
A)	Blue Inlay wax	
B)	Physical and Chemical stages of polymerization in acrylic resins	
C)	Tarnish & Corrosion	
D)	Suck Back Porosities	
E)	Hardness Test	
Q.3	Answer Following short question.	06 Marks
A)	Divestment	
B)	Zones of flame	
C)	Pickling	
D)	Soluble Plaster	
E)	Fusion Temperature and Glass Transition Temperature	
F)	Brush Heap Structure	

SECTION – B

Q.4	Answer Structured Long Essay	07 Marks
A)	Classify dental cement. Describe in detail about Zinc Oxide Eugenol Cement.	
Q.5	Write Short Essay (Any 3 out of 5)	12 Marks
A)	Manipulation of silver amalgam	
B)	Zinc Phosphate cement	
C)	Glass ionomer cement	
D)	Composition and roll of each ingredients of Silver amalgam	
E)	Property of Silver Amalgam	
Q.6	Answer following MCQ's	6 Marks
1)	Which of the following bases are contra indicated under a composite resin restoration:	
a)	Calcium hydroxide	b) Zinc phosphate cement
c)	Eugenol base	d) None of the above
2)	Which of the following weakest phase of the set amalgam:	
a)	Beta-2	b) Gamma-1
c)	Gamma-2	d) Gamma
3)	Frozen slab technique s applicable to	
a)	Glass Ionomer cement	b) Zinc oxide Eugenol cement
c)	Zinc phosphate cement	d) Resin cement
4)	Minimum thickness for type-I zinc phosphate cement should be	
a)	15 microns	b) 25 microns
c)	50 microns	d) 75 microns
5)	The powder/liquid ratio for glass ionomer cement is:	
a)	1:3	b) 1:1
c)	3:1	d) 2:3
6)	Secondary caries is found to be less when cavity restoration is done with:	
a)	Silver amalgam	b) Zinc phosphate
c)	Gold inlays	d) Glass ionomer cement

Narsinhbhai Patel Dental college & Hospital, VisnagarBDS-2ndYear- EXAMINATION- 1st Internal Examination-2023-24

Subject Name: Dental Materials

Date:04/01/2024

Time:2Hrs.

TotalMarks: 50

Instructions: 1. Use separate answer book for each section. 2. Attempt all questions
3. Draw diagrams wherever necessary. 4. Figure to the right indicate marks.

SECTION-A

- Q.1 Answer Structured Long Essay** 07 Marks
A) Classify gypsum Products with their uses, Differentiate between Alpha and Beta hemihydrates. 12 Marks
- Q.2 Write Short Essay (Any 3 out of 5)**
A) Chemical and Physical stages of Polymerization of Acrylic resins
B) Classification and Composition of Modeling compound
C) Dimensions of Colour
D) Irreversible hydrocolloid
E) Describe Corrosion and its types 06 Marks
- Q.3 Answer Following short question.**
A) Poisson's ratio
B) Creep
C) What is Glass transition temperature of Impression compound?
D) Metamerism
E) Newtonian Fluids
F) Zones of flame

SECTION-B

- Q.4 Answer Structured Long Essay** 07 Marks
A) Define Silver Amalgam. Describe in detail about manipulation of silver amalgam 12 Marks
- Q.5 Write Short Essay (Any 3 out of 5)**
A) Composition and role of each ingredients of Silver amalgam
B) Property of Dental Amalgam
C) Setting Reaction of High Copper Alloy
D) Tarnish and Corrosion
E) Classification of Silver Alloys 6 Marks
- Q.6 Answer following MCQ's**
- 1) Which of the following strongest phase of the set amalgam:
a) Beta b) Gamma-2
c) Gamma d) Gamma-1
- 2) Which component act as scavenger?
a) Copper b) Silver
c) Palladium d) Zinc
- 3) Moisture contamination of amalgam can lead to :
a) Shrinkage b) Delayed expansion
c) Increased stresses d) Marginal break down
- 4) Admixed high copper alloy powder contains
a) 13-30% copper b) 9-20% copper
c) 13-20% copper d) 9-30% copper
- 5) By increasing the percentage of which metal, the strength and hardness of amalgam increases:
a) Zn b) Ag
c) Hg d) Cu
- 6) The term "trituration" means
a) Removal of excess of mercury b) Mixing of amalgam alloy and mercury
c) None of the above d) Lysing amalgam alloy

SANKALCHAND PATEL UNIVERSITY**BDS 2nd Year – EXAMINATION – Sep.–Dec. 2023****Subject Code: 1DS1010104****Date: 30/10/ 2023****Subject Name: Dental Materials****Time: 3 Hrs.****Total Marks: 70****Instructions:**

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A (Prosthodontics)

- Q.1 Answer following Structured Long Essay (1 out of 2) 10
- A Classify Impression materials. Discuss composition, setting reaction and properties of irreversible hydrocolloids.
- B Enumerate casting procedure steps. Discuss casting defects and measures to avoid the same in detail.
- Q.2 Answer following Short Essay (3 out of 5) 15
- A Gypsum bonded Investment material
- B Soldering, welding, brazing
- C Classify denture base resin. Describe composition of heat cure Resin
- D Normal v/s hygroscopic Setting expansion in gypsum
- E Hardness
- Q.3 Answer following short definition/Objective type questions 5
- A Name the dimensions of color
- B Glazing
- C Crazeing
- D Abrasive and polishing agents
- E 18-8 Stainless steel
- Q.4 Answer following MCQ's 5
- A Flux used during casting to
- a) Remove the oxides formed on gold alloy b) Lower the melting point
- c) Replace the casting wax d) Speed the burnout process
- B Water powder ratio for Type- 3 gypsum product
- a) 0.25. – 0.50 b) 0.28 – 0.30 c) 0.50 – 0.55 d) 0.20 – 0.25
- C Which material undergoes hysteresis
- a) Agar- agar b) ZOE c) Alginate d) Gypsum
- D Which properties of alloy improved by Chromium in dental casting alloy
- a) Decreases Strength b) Ductility c) Corrosion resistance d) All of above
- E Flux used in dental ceramic
- a) Alumina b) Silica c) Kaolin d) Boric Oxide

SECTION – B (Conservative)

- Q.5 Answer following Structured Long Essay (1 out of 2) 10
- A Define and classify amalgam alloys, composition of amalgam alloys, describe its setting reactions and give uses.
 - B Classify dental cements. write in detail about composition, manipulation, setting reaction and recent modifications of GIC.
- Q.6 Answer following Short Essay (3 out of 5) 15
- A Classification and forms of direct filling gold.
 - B Describe the setting reaction of high copper amalgam.
 - C Acid etching
 - D Cavity liners and varnish
 - E Mercury toxicity
- Q.7 Answer following short definition/Objective type questions 5
- A Name any 2 agent for pulp protection
 - B The process of removal of gases from surface of direct filling gold to make it adhesive is called
 - C Time dependent flow in dental material is called
 - D Component of composites which bind fillers to the matrix?
 - E Component added to methyl methacrylate monomer to prevent polymerization in composites ?
- Q.8 Answer following MCQ's 5
- A Bonding of composite to tooth structure
 - a) covalent
 - b) ionic
 - c) mechanical
 - d) vanderval forces
 - B Which statement is closely related to cavity varnish
 - a) varnishes are synthetic resins in acetone
 - b) varnishes are calcium hydroxide in resin base
 - c) varnishes are base of ZOE
 - d) varnishes insulate the pulp thermally
 - C Trituration is
 - a) surface discoloration of metal
 - b) mixing of amalgam alloy and mercury
 - c) same as corrosion
 - d) same as erosion
 - D Dental amalgam alloy and mercury are mixed in ratio of
 - a) 1:1
 - b) 2:1
 - c) 1:3
 - d) 1:4
 - E percentage of gold in high noble alloys is
 - a) >5%
 - b) 25%
 - c) >40%
 - d) 0%

Narsinhbhai Patel Dental college & Hospital, Visnagar

BDS – 2nd Year – EXAMINATION – Preliminary -2023

Date: 04/09/2023

Total Marks: 70

Subject Name: Dental Materials

Time: 3 Hrs.

- Instructions: a. Use separate answer book for each section. b. Attempt all questions.
c. Draw diagrams wherever necessary. d. Figures to the right indicate marks.

SECTION – A

Q.1 Answer Structured Long Essay (Any 1 out of 2) 10

- A) Defined Ceramics. Write about classification, compositing and properties of Feldspatic porcelain
B) Classify Denture base materials. Write composition of heat cure resin and steps in compression moulding technique

Q.2 Write Short Essay (Any 3 out of 5) 15

- A) Different types of expansion of gypsum product
B) Porosities in dental casting defect
C) Hardness
D) Types of Stainless Steel
E) Soldering, brazing and welding

Q.3 Answer Following short question. 5

- A) Flux
B) Annealing
C) Hysteresis
D) Dust free alginate
E) Bench Curing

Q.4 Answer following MCQ's 5

- 1) Gelation temp of agar-agar is
a) 20-25 C
b) 27-33 C
c) 37-50 C
d) 55-60 C
- 2) Most commonly used retarder in gypsum is
a) Na_2SO_4
b) NaCl
c) Citrates
d) K_2SO_4
- 3) Which is not present in Porcelain
a) Silica
b) feldspar
c) Calcium carbonate
d) Amorphous materials
- 4) The main difference between dental stone and plaster is
a) Chemical composition
b) Shelf life
c) Shape and size of particles
d) Solubility in water
- 5) Flux used during casting to
a) remove the oxides formed on gold alloy
b) Lower the melting point
c) Replace the casting wax
d) Speed the burnout process

SECTION - B

10

- Q.5 Answer Structured Long Essay (Any 1 out of 2)**
- A) Classify dental cement. Write in detail about type, composition, setting reaction & property of Glass Ionomer Cements.
 - B) Define Composite resin. Describe in detail about Classification, Composition of composite resin.

15

- Q.6 Write Short Essay (Any 3 out of 5)**
- A) Direct Filling Gold
 - B) Calcium Hydroxide Cement
 - C) Zinc Oxide Eugenol Cement
 - D) Zinc phosphate Cement
 - E) Advantage and Disadvantage of silver amalgam

Q.7 Answer Following short question.

5

- A) What is delayed expansion in Silver Amalgam?
- B) Which ingredient act as scavenger in silver amalgam?
- C) What is ASPA?
- D) What is annealing?
- E) Write name of cements which are chemically bond to tooth structure?

Q.8 Answer following MCQ's

5

- 1) Which of the following weakest phase of the set amalgam:
 - a) Beta-2
 - b) Gamma
 - c) Gamma-1
 - d) Gamma-2
- 2) Fluoride rich materials include?
 - a) Silicate cement
 - b) Glass ionomer cement
 - c) Polycarboxylate cement
 - d) All of the above
- 3) Frozen slab technique applicable to:
 - a) Zinc phosphate cement
 - b) Glass Ionomer cement
 - c) Zinc oxide Eugenol cement
 - d) Resin cement
- 4) Which component act as scavenger?
 - a) Zinc
 - b) Copper
 - c) Silver
 - d) Palladium
- 5) Which of the following show chemical bond with enamel:
 - a) Composites
 - b) Direct filling resins
 - c) Polycarboxylate cements
 - d) BIS-GMA resins in pit and fissure sealants

- Instructions:** 1. Use separate answer book for each section. 2. Attempt all questions
3. Draw diagrams wherever necessary. 4. Figures to the right indicate marks.

SECTION – A

- Q.1 Answer Structured Long Essay** **07 Marks**
A) Define Impression, classify impression material. Write in detail about irreversible hydrocolloid material
- Q.2 Write Short Essay (Any 3 out of 5)** **12 Marks**
A) Casting defects
B) Tarnish and corrosion
C) Soldering welding and brazing
D) Classification gypsum product. difference of alpha and beta hemihydrate
E) Dental wax
- Q.3 Answer Following short question.** **06 Marks**
A) Zone of flame
B) 18-8 stainless steel
C) Rake angel
D) Stress & strain
E) Polishing agents -3 names
F) Hue of color

SECTION – B

- Q.4 Answer Structured Long Essay** **07 Marks**
A) Classify dental cement. Write in detail about type, composition, setting reaction & property of Zinc Phosphate Cements
- Q.5 Write Short Essay (Any 3 out of 5)** **12 Marks**
A) Property of Dental Amalgam
B) Glass Ionomer Cement
C) Zinc oxide Eugenol Cement
D) Manipulation of Silver Amalgam
E) Tarnish and corrosion
- Q.6 Answer following MCQ's** **6 Marks**
- 1) Frozen slab technique's applicable to:
a) Glass Ionomer cement
b) Zinc oxyphosphate Cement
c) Zinc oxide Eugenol Cement
d) Resin Cement
 - 2) Which of the following show chemical bond with enamel:
a) Composites
b) Polycarboxylate cements
c) Direct filling resins
d) BIS-GMA resins in pit and fissure sealants
 - 3) Minimum thickness for type-I zinc phosphate cement should be
a) 15 microns
b) 50 microns
c) 25 microns
d) 100 microns
 - 4) Conventional cavity varnish should not be employed under.
a) Amalgam restoration
b) Glass ionomer Cement
c) Zinc phosphate cement
d) Direct resin filling material
 - 5) Moisture Contamination of amalgam can lead to
a) Marginal breakdown
b) Delayed expansion
c) Shrinkage
d) Increased stresses
 - 6) The powder/liquid ratio for glass ionomer cement is:
a) 1:3
b) 3:1
c) 2:4
d) 4:2

Narsinhbhai Patel Dental college & Hospital, VisnagarBDS – 2nd Year – EXAMINATION – 1st Internal Examination -2023-**Subject Name:** Dental Materials**Date:** 04/04/2023**Time:** 2 Hrs.**Total Marks:** 50

- Instructions:**
1. Use separate answer book for each section.
 2. Attempt all questions
 3. Draw diagrams wherever necessary.
 4. Figures to the right indicate marks.

SECTION – A**Q.1 Answer Structured Long Essay****07 Marks**

- A) Gypsum product- Definition, Types, Uses, W/P ratio and Theories of Expansions in detail

Q.2 Write Short Essay (Any 3 out of 5)**12 Marks**

- A) Classify Impression Materials
 B) Physical & Chemical Stages of Acrylic Manipulation
 C) Composition of ZOE paste
 D) Hue, Value & Chroma
 E) Composition and Uses of Alginate

Q.3 Answer Following short question.**06 Marks**

- A) Name different viscosities of Addition Silicone
 B) Stress & Strain
 C) Manipulation Steps of Impression Compound
 D) Zones of Flame
 E) Ductility & Malleability
 F) Soluble Plaster

SECTION – B**Q.4 Answer Structured Long Essay****07 Marks**

- A) Define Dental Amalgam; write about property of silver amalgam

Q.5 Write Short Essay (Any 3 out of 5)**12 Marks**

- A) History of Dental Amalgam
 B) Classification of Silver Alloys
 C) Setting Reaction of High Copper Alloy
 D) Composition of Dental Amalgam
 E) Tarnish and corrosion

Q.6 Answer following MCQ's**6 Marks**

- 1) The largest component of amalgam alloy is
 - a) Zinc
 - b) Copper
 - c) Silver
 - d) Palladium
- 2) Which of the following strongest phase of the set amalgam:
 - a) Beta
 - b) Gamma
 - c) Gamma-1
 - d) Gamma-2
- 3) Which ingredient cause delayed expansion?
 - a) Zinc
 - b) Copper
 - c) Silver
 - d) Palladium
- 4) Which component act as scavenger?
 - a) Zinc
 - b) Copper
 - c) Silver
 - d) Palladium
- 5) Moisture Contamination of amalgam can lead to
 - a) Marginal breakdown
 - b) Delayed expansion
 - c) Shrinkage
 - d) Increased stresses
- 6) Which of the following weakest phase of the set amalgam:
 - a) Beta
 - b) Gamma
 - c) Gamma-1
 - d) Gamma-2

Seat No.: _____

PRN.: _____

SANKALCHAND PATEL UNIVERSITY

BDS – 2nd Year – EXAMINATION, NOV – DEC 2022

Subject Code: 1DS1010104

Date: 09/12/2022

Subject Name: Dental Materials

Time: 3 Hrs.

Total Marks:70

Instructions:

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A (Prosthodontics)

- Q.1 Answer following Structured Long Essay. (Any One) 10
- A What are the types and indications of Investment materials. Discuss casting defects in detail.
- B Classify impression materials. Write in detail about Composition, types, uses and properties of Impression Compound.
- Q.2 Answer following Short Essay. (Any three) 15
- A Malleability & Ductility
- B Flux & Antiflux
- C Wrought alloys
- D Processing errors in acrylic resins
- E Types of expansion in Gypsum products
- Q.3 Answer following in short. 5
- A What is Brazing?
- B Name two abrasives used in dentistry.
- C What are the functions of sprue in casting?
- D Define Imbibition and Syneresis.
- E What are the various types of Hardness tests used for dental materials?
- Q.4 Answer following MCQ's. 5
- A Alginate is
- a) addition silicone b) condensation silicone
- c) hydrocolloid d) polyether
- B Initiator in denture base acrylic resin is
- a) Dibutyl phthalate b) glycol dimethacrylate
- c) benzoyl peroxide d) zinc or titanium oxide
- C Most biocompatible implant material is
- a) titanium b) carbon c) aluminium d) steel
- D Type I gypsum product is known as.
- a) dental plaster b) dental stone
- c) impression plaster d) dental stone high strength low expansion
- E Chroma is:
- a) basic color b) Intensity of color
- c) darkness or lightness of color d) Both b & c

SECTION – B (Conservative)

- Q.5 Answer following Structured Long Essay. (Any One) 10
- A Classify Dental Cements and explain tooth coloured dental cements in detail
 - B Discuss manipulation of Amalgam in detail and write about mercury toxicity
- Q.6 Answer following Short Essay. (Any three) 15
- A Self-etch technique v/s Total-etch technique
 - B C-factor
 - C Classify DFG and write about Annealing and Tie formation
 - D Composition, of Zinc Phosphate cement and explain cool glass slab technique
 - E Finishing and Polishing of Composite
- Q.7 Answer following in short. 5
- A Smear Layer
 - B Giomer
 - C Miracle Mix
 - D Setting reaction of ZOE cement
 - E Working time and setting time of restorative GIC
- Q.8 Answer following MCQ's. 5
- A In Composites, the phenomenon of the formation of gap between tooth structure the composite after setting is known as ?
 - a) Polymerisation gap
 - b) Polymerisation shrinkage
 - c) Polymerisation contraction
 - d) Polymerisation leakage
 - B Which of the following is the synonym of GIC ?
 - a) ASPA
 - b) Polyalkenoate cement
 - c) Both A and B
 - d) None of the above
 - C The addition of which of the following can accelerate the setting time of zinc oxide cement
 - a) Zinc acetate
 - b) Zinc Sulphate
 - c) Barium Sulphate
 - d) Barium Chloride
 - D The Hybrid Layer was introduced by whom ?
 - a) G.V. Black
 - b) Nakabayashi
 - c) Nygard-Ostby
 - d) Grossman
 - E Amalgam is also known as restoration ?
 - a) Self-Healing
 - b) Self-Sealing
 - c) Self-Binding
 - d) Self-Retaining

Seat No.: _____

PRN.: _____

SANKALCHAND PATEL UNIVERSITY
BDS – 2nd Year – EXAMINATION – July – Sept 2022

Subject Code: 1DS1010104

Date: 29/6/2022

Subject Name: Dental Materials

Total Marks: 70

Time: 3 Hrs.

Instructions:

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A (Prosthodontics)

- Q.1 Answer following Structured Long Essay. (Any One) 10
- A What is Ceramic? Describe in detail type, composition, uses, advantages and disadvantages of dental ceramics.
- B Classify impression materials. Give composition, role of each ingredient, advantages, disadvantages & uses of zinc oxide eugenol impression materials. 15
- Q.2 Answer following Short Essay. (Any three)
- A Tarnish and Corrosion.
- B Classification of Dental wax.
- C Stress and Strain.
- D Physical stages for acrylic resin.
- E Casting defects.
- Q.3 Answer following in short. 5
- A Soldering.
- B Divestment.
- C Inhibitor in acrylic resin.
- D Name any two polishing agents.
- E Pickling.
- Q.4 Answer following MCQ's. 5
- A Hardness of which of the following abrasive is maximum?
a) Sand b) Emery c) Potash d) Boron carbide
- B w/p ratio for dental stone is?
a) 0.28-0.30 b) 0.50-0.70 c) 0.18-0.22 d) 0.45-0.50
- C Study of flow of matter is called as?
a) Rheology b) Zoology c) Color science d) Galvanism
- D Among this which is not elastomer?
a) Polysulfide b) Polyether c) Agar Agar d) Addition silicones
- E Among this which is not a flux?
a) Boric acid b) Borax c) Fluorides d) Diamond

SECTION – B (Conservative)

- Q.5 Answer following Structured Long Essay. (Any One) 10
- A Define Silver Amalgam. Describe in detail about manipulation of silver amalgam.
 - B Define Composite resin. Describe in detail about Classification, Composition of composite resin.
- Q.6 Answer following Short Essay. (Any three) 15
- A Glass Ionomer Cements
 - B Calcium Hydroxide Cement
 - C Direct Filling Gold
 - D Tarnish & Corrosion
 - E Composition of Silver Alloys
- Q.7 Answer following in short. 5
- A Which ingredients cause delayed expansion in Silver Amalgam?
 - B What is ASPA?
 - C What is Degassing?
 - D Which ingredient act as scavenger in Silver Amalgam?
 - E Write name of cements which are chemically bond to tooth structure?
- Q.8 Answer following MCQ's. 5
- A Which of the following weakest phase of the set amalgam:
 - a) Beta-2 b) Gamma
 - c) Gamma-1 d) Gamma-2
 - B Fluoride rich materials include?
 - a) Silicate cement b) Glass ionomer cement
 - c) Polycarboxylate cement d) All of the above
 - C Frozen slab techniques applicable to:
 - a) Zinc phosphate cement b) Glass Ionomer cement
 - c) Zinc oxide Eugenol cement d) Resin cement
 - D Which of the following bases is contra indicated under a composite resin restoration:
 - a) Calcium hydroxide b) Eugenol base
 - c) Zinc phosphate cement d) none of the above
 - E Which one of the following dental cement accelerates the formation of reparative dentin?
 - a) Eugenol b) Calcium hydroxide
 - c) Zinc oxide d) Silica

Narsinhbhai Patel Dental college & Hospital, Visnagar
BDS – IInd Year – EXAMINATION – Preliminary -2022

Subject Name: Dental Materials

Date: 25/05/2022

Time: 3 Hrs.

Total Marks: 70

Instructions:

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A

- Q.1 Answer Structured Long Essay (Any 1 out of 2) 10**
 A. Describe in detail about Gypsum bonded investment material including their composition, setting reaction, setting expansion, uses and properties.
 B. Classify Dental Wax. Write in detail about Inlay Casting Wax.
- Q.2 Write Short Essay (Any 3 out of 5) 15**
 A Dental Implant Materials
 B Steps of manipulation of impression compound
 C Differentiate between normal setting expansion and hygroscopic setting expansion
 D Dentifrices
 E Porosity – Denture base resins
- Q.3 Answer Following short question. 5**
 A Pickling
 B Name two abrasive agents
 C Antiflux
 D Reservoir
 E Craze
- Q.4 Answer following MCQ's 5**
 1. Automixing system can be used for...
 A. Addition Silicones
 B. Polysulfides
 C. Agar-Agar
 D. Impression paste
2. Softening heat treatment is also called as...
 A. Age Hardening
 B. Work Hardening
 C. Annealing
 D. All of the above
3. Recommended monomer-polymer ratio of heat cure resins by volume is...
 A. 1:3
 B. 3:1
 C. 2:1
 D. 1:2
4. Main function of asbestos in casting ring is...
 A. Absorb moisture from investment
 B. Aid in expansion of investment
 C. To prevent fracture of investment
 D. Allow escape of trapped air
5. Which of the following produces smoothest surface on dental ceramic prosthesis?
 A. Aluminum oxide
 B. Tin oxide
 C. Rubber wheel
 D. Glazing

SECTION – B

- Q.5 Answer Structured Long Essay (Any 1 out of 2)** 10
 A Classify dental cement. Describe in detail about Zinc Oxide Eugenol Cement.
 B Define Silver Amalgam. Describe in detail about manipulation of silver amalgam.
- Q.6 Write Short Essay (Any 3 out of 5)** 15
 A Composition and roll of each ingredients of Silver amalgam
 B Direct Filling Gold
 C Zinc Phosphate cement
 D Properties of GIC
 E Composition of Composite Resins
- Q.7 Answer Following short question.** 5
 A Which ingredient cause delayed expansion?
 B Who introduced Calcium Hydroxide cement?
 C What is Degassing?
 D Which ingredient act as scavenger in Silver Amalgam?
 E What is ASPA?
- Q.8 Answer following MCQ's** 5
- 1 A Dentin 'Primer'?
 A. Etches the dentin
 B. It increases the surface energy & wets the dentin surface
 C. Removes the smear Layer
 D. Conditions the dentin
 - 2 Which of the following bases are contra indicated under a composite resin restoration:
 A. Calcium hydroxide
 B. Eugenol base
 C. Zinc phosphate cement
 D. None of the above
 - 3 Which of the following weakest phase of the set amalgam:
 A. Beta-2
 B. Gamma
 C. Gamma-1
 D. Gamma-2
 - 4 Which one of the following dental cement accelerates the formation of reparative dentin?
 A. Eugenol
 B. Calcium hydroxide
 C. Zinc oxide
 D. Silica
 - 5 Minimum thickness for type-I zinc phosphate cement should be
 A. 15 microns
 B. 50 microns
 C. 25 microns
 D. 100 microns

Narsinhbhai Patel Dental College & Hospital, Visnagar

Subject – DENTAL MATERIALS

II B.D.S. Second Internal Examination -2021-22

Time: 2 hrs

Total Marks: 50

Draw neat labeled diagrams wherever necessary.

Section- I (25 Marks)

1. Long Essay

1x7 =7

Classify investment materials. Discuss composition and write any one in detail.

2. Short Notes (3 of 5)

3x4=12

- 1) Polyvinyl siloxane impression material.
- 2) Processing errors in denture base resins.
- 3) Difference between Normal setting expansion and Hygroscopic setting expansion.
- 4) Tarnish and Corrosion.
- 5) Inlay wax.

3. Answer in one line (6)

6x1=6

- 1) Separating media.
- 2) KHN
- 3) Slurry water.
- 4) Stress and Strain
- 5) Divestment
- 6) Chemical stages of Acrylic resins.

SECTION - II

**25 marks
(7 marks)**

Question-1 Long Essay

Classify dental cement. Describe in detail about Zinc Phosphate Cement.

(3x4marks = 12 marks)

Question- 2 Write short notes (Any Three)

1. Composition of Composite resin
2. Tarnish & Corrosion
3. Classification of composite resin
4. Zinc Oxide Eugenol Cement
5. Classification of Silver Alloys

Question- 3 MCQ.

(6x1marks = 06 marks)

1. Fluoride rich materials include?
A) Silicate Cement B) Glass Ionomer Cement
C) Polycarboxylate Cement D) All of the above
2. Atraumatic Restorative Treatment (ART) technique utilizes
A) Glass Ionomer Cement B) Composite Resin
C) Silver Amalgam D) Zinc Phosphate Cement
3. Which of the following show chemical bond with enamel :
A) Composite B) Glass Ionomer Cement
C) Direct Filling Gold D) All of the above
4. Which of the following cements is most biocompatible with pulp?
A) GIC B) Copper cement
C) Zinc Phosphate cement D) Zinc oxide eugenol cement
5. Which ingredient cause delayed expansion?
A) Zinc B. Copper C. Silver D. Palladium
6. Which component act as scavenger?
A) Zinc B. Copper C. Silver D. Palladium

SANKALCHAND PATEL UNIVERSITYBDS – 2nd Year – EXAMINATION – July-Sept – 2021

Subject Code: 1DS1010104

Date: 07/08/ 2021

Subject Name: Dental Materials

Time: 3 Hrs.

Total Marks: 70

Instructions:

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A (Prosthodontics)

- Q.1 Answer following Structured Long Essay questions (1 out of 2) 10
- A Classify impression materials. Write in detail about Composition, setting reaction and properties of Alginate.
- B Enumerate steps in casting procedures. Discuss casting defects in detail.
- Q.2 Answer following Short Essay questions (3 out of 5) 15
- A Setting expansion & Hygroscopic expansion
- B Hardness
- C Polymerization stages of acrylic resin
- D Impression compound
- E Inlay wax
- Q.3 Answer following short/ Objective type questions. 5
- A Name any two Abrasive agents.
- B Separating media.
- C What is 18-8 stainless steel?
- D Difference between soldering and welding.
- E Pickling.
- Q.4 Answer following MCQ's 5
- 1 Type IV gypsum product is known as.
- a) dental plaster b) dental stone
- c) impression plaster d) dental stone high strength low expansion
- 2 Polyvinyl Siloxane is
- a) additional silicone b) condensation silicone
- c) polysulphide d) polyether
- 3 Macrohardness test is/are
- a) Vickers test b) Rockwell test c) Brinell test d) Both b & c
- 4 Plasticizer in denture base acrylic resin is
- a) Dibutyl phthalate b) glycol dimethacrylate
- c) benzoyl peroxide d) zinc or titanium oxide
- 5 Most biocompatible implant material is
- a) titanium b) carbon c) aluminium d) steel

SECTION – B (Conservative)

Q.5 Answer following Structured Long Essay questions (1 out of 2)

- A Classify Dental Cement. Write in detail about Glass Ionomer Cements.
- B Define Composite resin. Describe in detail about Classification, Composition of Composite resin.

Q.6 Answer following Short Essay questions (3 out of 5)

- A Composition of Silver Amalgam
- B Direct Filling Gold
- C Zinc Phosphate Cement
- D Tarnish and Corrosion
- E Manipulation of Silver Amalgam

Q.7 Answer following short/ Objective type questions.

- A Which ingredient act as scavenger in silver amalgam?
- B Write name of chemical used to etch enamel.
- C What is Annealing?
- D Write name of cements which are chemically bond to tooth structure?
- E What is delayed expansion in Silver Amalgam?

Q.8 Answer following MCQ's

- 1 Fluoride rich materials include?
 - a) Silicate Cement
 - b) Polycarboxylate Cement
 - c) Glass Ionomer Cement
 - d) All of the above
- 2 Which of the following strongest phase of the set amalgam:
 - a) Beta
 - b) Gamma
 - c) Gamma-1
 - d) Gamma-2
- 3 Frozen slab technique used in
 - a) Zinc phosphate Cement
 - b) Calcium Hydroxide Cement
 - c) Zinc Oxide Eugenol Cement
 - d) None of the above
- 4 Which of the following cements is most biocompatible with pulp?
 - a) GIC
 - b) Zinc Phosphate cement
 - c) Copper cement
 - d) Zinc oxide eugenol cement
- 5 Bonding of composite resins to tooth structure is by:
 - a) Covalent bond
 - b) Ionic bond
 - c) Micro-mechanical bond
 - d) Vanderwaal forces

Narsinhbhai Patel Dental College & Hospital, Visnagar

Dental Materials

II B.D.S. Preliminary Examination -2021 –

Time: 1 hr

Total Marks: 25

1. Classify Denture base materials. Discuss about physical and Chemical Stages of Polymerization

Or

Classification, Composition, Reaction, manipulation, Properties and Uses of GIC.

(1 x 10=10 marks)

2. Write short notes (Any Three)

(3 x 5 = 15 marks)

1. Syneresis and Imbibitions
2. Blue inlay wax
3. Zinc-Polycarboxylate Cement
4. Manipulation of Dental Amalgam

Narsinhbhai Patel Dental College & Hospital, Visnagar

Dental Materials

II B.D.S. Preliminary Examination -2021 –

Time: 1 hr

Total Marks: 25

1. Classify Denture base materials. Discuss about physical and Chemical Stages of Polymerization

Or

Classification, Composition, Reaction, manipulation, Properties and Uses of GIC.

(1 x 10=10 marks)

2. Write short notes (Any Three)

(3 x 5 = 15 marks)

1. Syneresis and Imbibitions
2. Blue inlay wax
3. Zinc-Polycarboxylate Cement
4. Manipulation of Dental Amalgam

Narsinhbhai Patel Dental College & Hospital, Visnagar

Dental Materials

II B.D.S. Preliminary Examination -2021 –

Time: 1 hr

Total Marks: 25

1. Classify Denture base materials. Discuss about physical and Chemical Stages of Polymerization

Or

Classification, Composition, Reaction, manipulation, Properties and Uses of GIC.

(1 x 10=10 marks)

2. Write short notes (Any Three)

(3 x 5 = 15 marks)

1. Syneresis and Imbibitions
2. Blue inlay wax
3. Zinc-Polycarboxylate Cement
4. Manipulation of Dental Amalgam

Narsinhbhai Patel Dental College & Hospital, Visnagar
Department of Prosthodontics and Crown and Bridge

II B.D.S. First Internal Examination -2020-21
DENTAL MATERIALS

Time: 2 hrs

Total Marks: 50

Draw neat labeled diagrams wherever necessary.

Section- A (25 Marks)

1. Long Essay

1x7=7

Classify dental waxes. Discuss blue inlay wax.

2. Short Notes (3 of 5)

3x4=12

- a. Laminate technique.
- b. Manipulation of impression compound
- c. Zinc oxide Eugenol impression paste
- d. Addition silicone
- e. Composition and setting reaction of alginate

3. Answer in one line (6)

6x1=6

- a. Syneresis
- b. Non Eugenol impression paste
- c. Calcination
- d. Composition of agar
- e. Soluble plaster
- f. Name hydrophilic elastomeric impression material

Section- B (25 Marks)

4. Long Essay

7x1=7

Classify dental cement. Describe in detail about Zinc Oxide Eugenol Cement.

5. Write short notes (3 of 5)

3x4= 12

1. Composition and roll of each ingredients of Silver amalgam
2. Admixed Alloys of High Copper Amalgam
3. Zinc Phosphate cement
4. Glass ionomer cement
5. Calcium Hydroxide cement

6. MCQ.

6x1= 06

1. Which of the following show chemical bond with enamel:
A) Composite
B) Glass Ionomer Cement
C) Direct Filling Gold
D) All of the above
2. Which of the following cements is most biocompatible with pulp?
A) GIC
B) Copper cement
C) Zinc Phosphate cement
D) Zinc oxide eugenol cement
3. The largest component of amalgam alloy is:
A. Silver B. Tin C. Zinc D. Copper
4. Which ingredient cause delayed expansion?
A. Zinc B. Copper C. Silver D. Palladium
5. Which component act as scavenger?
A. Zinc B. Copper C. Silver D. Palladium
6. Frozen slab technique used in
A) Zinc phosphate Cement
B) Zinc Oxide Eugenol Cement
C) Calcium Hydroxide Cement
D) None of the above

SANKALCHAND PATEL UNIVERSITY**BDS – (2nd) Year – EXAMINATION – December – 2020****Subject Code: 1DS1010104****Date: 26/12/ 2020****Subject Name: Dental Materials****Time: 3 Hrs.****Total Marks: 70****Instructions:**

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A (Prosthodontics)

- Q.1 Write Structured Long Essay (1 out of 2) 10
- A Classify denture base materials. Write in detail about the composition, setting reaction, manipulation, properties, and uses of heat cure acrylic resins.
- B Describe various casting defects its causes and how will you do a casting to avoid such defects.
- Q.2 Write Short Essay (3 out of 5) 15
- A Non eugenol pastes.
- B Syneresis and Imbibition
- C Difference between acrylic and porcelain teeth
- D Hygroscopic Setting Expansion
- E Separating media.
- Q.3 Answer following short objective questions. 5
- A Working time
- B Dust free alginate
- C What is the softening temperature of impression compound?
- D ADA no. for dental wax
- E Full form of CAD-CAM
- Q.4 Answer following MCQ's 5
- 1 Glass transition temperature of impression compound is.....
- A. 102 °F
- B. 43.5 °C
- C. 43.5 °F
- D. 102 °C
- 2 Chroma of an object refers to.....
- A. Basic color of an object
- B. Degree of saturation of particular color
- C. Lightness or darkness of an object
- D. None of the above

- 3 Which of the following impression material is most hydrophilic?
 A. Poly sulfide
 B. Poly ether
 C. A-silicon
 D. C-silicon
- 4 Agar-agar impression material is.....
 A. Reversible in nature
 B. Thermoplastic
 C. Hydrocolloid
 D. All of the above
- 5 Amount of water of reaction of stone compared to plaster is.....
 A. Greater
 B. Lesser
 C. Same
 D. Variable

SECTION – B (Conservative)

- Q.5 Write Structured Long Essay (1 out of 2) 10
 A. Classify silver amalgam. Write composition and properties of silver amalgam.
 B. Classify composite resins. Write in detail about hybrid composite.
- Q.6 Write Short Essay (3 out of 5) 15
 A. Tarnish and corrosion
 B. Casting defects
 C. Cavity liner and bases
 D. Composition and properties of glass ionomer cement.
 E. Pit and fissure sealants.
- Q.7 Answer following short objective questions. 5
 A. Composition of Gutta percha
 B. Uses of calcium hydroxide cement.
 C. What is 'ORMOCERS'
 D. What is eames technique?
 E. What is exothermic reaction?
- Q.8 Answer following MCQ's 5
 1 Time dependent flow is known as
 A. viscosity B. Resilience
 C. Creep D. toughness
- 2 Weakest phase of amalgam is
 A. Ag₃Sn B. Ag₂Hg₃
 C. Sn₇₋₈Hg D. Cu-Sn
- 3 At which concentration of phosphoric acid mono calcium phosohate is formed?
 A. 37% B. 47%
 C. 50% D. 27%

- 4 Microleakage results in
 - A. Secondary caries
 - B. Discoloration
 - C. Sensitivity
 - D. All of the above
- 5 Self-sealing restorative material is
 - A. Composite
 - B. Glass ionomer
 - C. Amalgam
 - D. Gold alloys

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SANKALCHAND PATEL UNIVERSITYBDS – 2nd Year – EXAMINATION – July -August– 2020

Subject Code: 1DS1010104

Date: 30/10/ 2020

Subject Name: Dental Materials

Time: 3 Hrs.

Total Marks: 70

Instructions:

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A (Prosthodontics)

- Q.1 Answer Structured Long Essay (Any 1 out of 2) 10
- A Classify Impression materials. Describe composition, setting mechanism, properties and uses of Irreversible hydrocolloids.
- B Classify Gypsum products with their uses. Differentiate between alpha and beta hemihydrate.
- Q.2 Write Short Essay (Any 3 out of 5) 15
- A Soldering, welding and brazing
- B Stages of polymerization of acrylic resins
- C Hardness
- D Direct filling gold
- E Porosities in dental casting
- Q.3 Answer following short question. 5
- A What is Calcination?
- B Define Crazeing in denture base resins.
- C What do you mean by 18:8 Stainless Steel?
- D What is Soluble plaster?
- E What is the composition of Inlay casting wax?
- Q.4 Answer following MCQ's 5
- 1 Value of an object refers to:
 - A. Basic color of an object
 - B. Lightness or darkness of an object
 - C. Degree of saturation of particular color
 - D. None of the above
 - 2 The component responsible for allergy in dental casting alloys is:
 - A. Cobalt B. Copper C. Nickel D. Titanium
 - 3 Dental porcelains are crystalline materials of:
 - A. Rubber
 - B. Plastic
 - C. Organic substances
 - D. Glass
 - 4 Cleaning of base metal alloys is done with:
 - A. Warm HCl
 - B. Cold HF
 - C. Cold H₂SO₄
 - D. Sand blasting with aluminium oxide
 - 5 Which of the following impression material sets by physical reaction?
 - A. Impression plaster
 - B. Zinc oxide eugenol impression paste
 - C. Alginate
 - D. Agar

SECTION – B (Conservative)

- Q.5 Answer Structured Long Essay (Any 1 out of 2) 10
- A Classify Dental Cements. Write in details about composition, setting reaction, properties and indications of Glass Ionomer Cements.
 - B Define Dental Amalgam. Discuss in details about classification, setting reaction, properties and uses of silver amalgam alloys.
- Q.6 Write Short Essay (Any 3 out of 5) 15
- A Flowable composite
 - B Mercury toxicity
 - C Gold Foil
 - D Calcium hydroxide Cement
 - E Cavity Varnish
- Q.7 Answer following short question. 5
- A What is ASPA?
 - B What is ideal intensity of curing light?
 - C What is strongest phase in low copper alloys?
 - D How composite resin is bond to tooth structure?
 - E What is pH of Calcium Hydroxide cement?
- Q.8 Answer following MCQ's 5
- 1 Which ingredient cause delayed expansion?
 - A. Zinc
 - B. Copper
 - C. Silver
 - D. Palladium
 - 2 Fluoride rich materials include?
 - A. Silicate cement
 - B. Glass ionomer cement
 - C. Polycarboxylate cement
 - D. All of the above
 - 3 Frozen slab technique s applicable to:
 - A. Zinc phosphate cement
 - B. Glass Ionomer cement
 - C. Zinc oxide Eugenol cement
 - D. Resin cement
 - 4 Which is the recommended force for condensation of dental amalgam
 - A. 35 lb
 - B. 3-4 lb
 - C. 15 lb
 - D. 25 lb
 - 5 Radio opacity of composite resins is rendered by
 - A. Silica glass
 - B. Organic matrix
 - C. Barium glass
 - D. Fluoride particles

SANKALCHAND PATEL UNIVERSITY**BDS – 2nd Year – EXAMINATION – NOV/DEC – 2019****Subject Code: 1DS1010104****Date: 13/12/2019****Subject Name: Dental Materials****Time: 3 hours****Total Marks: 70****Instructions:**

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A (Prosthodontics)

- Q.1** Structured Long Essay (1 out of 2) 10
- A** Enumerate casting defects. Write in detail about porosity?
- B** Classify dental materials. Write in detail elastomeric impression material.
- Q.2** Answer following Short Essay (3 out of 5) 15
- A** Alginate
- B** Stress and Strain
- C** Gypsum products
- D** Alloys gold
- E** Tarnish and Corrosion
- Q.3** Answer following short/Objective type questions 5
- A** Creep
- B** Value and hue
- C** Soldering and Welding
- D** Bonding agents
- E** gic
- Q.4** Answer following MCQ's 5
- A** The term trituration means:
- A. Lysing amalgam alloy B. Mixing of amalgam alloy and mercury
C. Removal of excess of mercury D. None of the above
- B** Fluoride rich materials include?
- A. Silicate cement B. Glass ionomer cement
C. Polycarboxylate cement D. All of the above
- C** Model plaster (white) used to cast study models before mixing with water, is largely composed of:
- A. CaO B. CaCO C. (CaSO)₂ · ½H₂O D. CaSO₄ · 2H₂O
- D** Stress is defined as:
- A. An applied load or force
B. A deformation resulting from an applied load
C. An external force opposing an applied load
D. An internal force opposing an applied load
- E** Glass ionomer cements are composed of:
- A. Alumino silicate powder and phosphoric acid
B. Aluminosilicate powder and polyacrylate
C. Zinc oxide powder and phosphoric acid
D. Zinc oxide powder and polyacrylate liquid

SECTION – B (Conservative)

- Q.5** Structured Long Essay (1 out of 2)
- A** Define Dental Amalgam. Discuss classification, setting reaction and manipulation of Dental amalgam in detail.
 - B** Classify Dental Cements. Discuss glass ionomer cement for its composition, setting reaction and properties in detail.
- Q.6** Answer following Short Essay (3 out of 5)
- A** Calcium hydroxide cement
 - B** Classification of Dental Composite
 - C** Zinc Phosphate Cement
 - D** Mercury toxicity
 - E** Classification of Direct Filling Gold
- Q.7** Answer following short/Objective type
- A** Write name of cements which chemically bond to tooth structure?
 - B** What is the role of 37% phosphoric acid in dental composite?
 - C** Which ingredient act as scavenger in Dental Amalgam?
 - D** Who introduced calcium hydroxide cement?
 - E** Frozen slab technique is applicable for which dental cement?
- Q.8** Answer following MCQ's
- A** The effect of zinc oxide eugenol on the pulp
 - a) Is irritating b) Pulp fibrosis c) Obtundant d) Has no effect
 - B** Low copper dental amalgam alloy contains maximum amount of copper up to:
 - a) 3% b) 19% c) 6% d) 11%
 - C** Which one of the following dental cement accelerates the formation of reparative dentin?
 - a) Eugenol b) Calcium hydroxide c) Zinc oxide d) Silica
 - D** Retention in a composite restoration is mainly attained by
 - a) Chemical adhesion
 - b) Acid etching & Bonding
 - c) Inverted Truncated shape
 - d) Undercuts
 - E** Which is following is best barrier between a restorative material and the pulp?
 - a) Zinc phosphate
 - b) Calcium hydroxide liner
 - c) Sound dentin
 - d) Dental Varnish

10

15

5

5

2

SANKALCHAND PATEL UNIVERSITYBDS – 2nd Year – EXAMINATION – Jun-July – 2019

Subject Code: 1DS1010104

Date: 05/07 / 2019

Subject Name: Dental Materials

Time: 3 hours

Total Marks: 70

Instructions:

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A

- Q.1** Answer Structured Long Essay (1 out of 2) 10
- A** Classify Impression materials. Discuss composition, uses and setting mechanism of Zinc oxide eugenol impression paste.
- B** Describe casting defects and methods to prevent the same.
- Q.2** Answer Short Essay (3 out of 5) 15
- A** Soldering, Welding & Brazing
- B** Classification of Denture Base Materials & Processing errors in Acrylic resins
- C** Normal setting expansion & Hygroscopic expansion
- D** Methods of strengthening Dental Ceramics
- E** Stress – Strain Curve
- Q.3** Answer following Objective type questions 5
- A** What is 'Pickling'?
- B** Write two functions of Ring liners in casting procedure.
- C** Define 'Chroma' as a color parameter.
- D** What is the indication of Phosphate bonded investment?
- E** Name two polishing materials used in dentistry.
- Q.4** Answer following MCQ's 5
- 1** W:P ratio for Dental Stone is:
- a. 0.45-0.50 b. 0.28-0.30
- c. 0.18-0.20 d. 0.58-0.60
- 2** The surface discoloration of a dental material is known as:
- a. Tarnish b. Corrosion
- c. Galvanism d. Pitting
- 3** Which of the following is an 'elastic impression material'?
- a. Impression compound b. Impression plaster
- c. ZOE paste d. Alginate
- 4** Which of the following is not an Implant Biomaterial?
- a. Composite resins b. Titanium
- c. Titanium Alloys d. Ceramics
- 5** Ductility is the ability of a dental material to resist load under
- a. Compression b. Tension
- c. Shear d. All of the above

SECTION – B

- Q.5** Answer Structured Long Essay (1 out of 2) 10
- A** Define dental amalgam. Discuss in detail about classification, setting reaction, structure, properties and clinical considerations.
 - B** Classify dental cements. Write in detail about type, composition, setting reaction & properties of Glass Ionomer Cements.
- Q.6** Answer following Short Essay (3 out of 5) 15
- A** Calcium hydroxide
 - B** Direct filling gold
 - C** Acid etching
 - D** Tarnish and corrosion
 - E** Liners and bases
- Q.7** Answer following Objective type questions 5
- A** Which component act as scavenger in amalgam?
 - B** Composite is retained by the phenomena of?
 - C** Atraumatic Restorative Treatment (ART) technique utilizes which cement?
 - D** Which is weakest phase of the set amalgam?
 - E** The most important property of gold which has enabled its use as a direct filling material is?
- Q.8** Answer following MCQ's 5
- 1** Moisture contamination of amalgam can lead to :
 - a). Marginal break down
 - b). Shrinkage
 - c). Delayed expansion
 - d). Increased stresses
 - 2** The difunctional molecule used as a coupling agent in modern composite formulations is
 - a). Parabane
 - b). Ligane
 - c). Silane
 - d). Chelane
 - 3** The best way to clean cavity before the placement of GIC is
 - a). H₂O₂
 - b). Phosphoric Acid
 - c). Polyacrylic Acid
 - d). Hydrofluoric Acid
 - 4** Frozen slab technique is applicable to:
 - a). Zinc phosphate cement
 - b). Glass Ionomer cement
 - c). Zinc oxide Eugenol cement
 - d). Resin cement
 - 5** The function of varnish
 - a). To reduce initial marginal leakage "Short-term leakage"
 - b). To prevent long term leakage
 - c). Reparative dentine formation
 - d). Bonding of restoration

Seat No.: _____

PR No.: _____

SANKALCHAND PATEL UNIVERSITY

BDS – (2nd) Year – EXAMINATION – NOC/DEC-2018

Subject Code: IDS1010104

Date: 7/12/2018

Subject Name: DENTAL MATERIALS

Time: 3 hours

Total Marks: 70

Instructions:

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A

- Q.1** Write Structured Long Essay (1 out of 2) **10**
- A** Give classification of impression material. Write in detail about Impression compound.
- B** Write in detail about casting procedure.
- Q.2** Write Short Essay (3 out of 5) **15**
- A** Blue inlay wax
- B** Zone of flame
- C** Hardness
- D** Abrasive and polishing agents
- E** Physical and chemical stages of polymerization
- Q.3** Answer following **5**
- A** Composition of zinc oxide Eugenol impression paste
- B** Pickling
- C** Dust free alginate
- D** Water powder ratio means.
- E** Syneresis
- Q.4** Answer following MCQ's **5**
- A** Agar & Alginate impression technique combination known as
- a. Sandwich tech b. Laminates tech
- c. EAMES tech d. None of above
- B** Fusion temperature of impression compound
- a. 39 b. 39.5 c. 43 d. 43.5
- C** Which gypsum product is used as die material?
- a. Type I b. Type II c. Type IV d. None of the above
- D** Which is irreversible hydrocolloid?
- a. Impression compound b. ZnOe paste
- c. Type v gypsum product d. Alginate
- E** Broadly used material for implant is.
- a. Steel b. Gold c. Titanium d. Palladium

SECTION – B

Q.5 Write Structured Long Essay (1 out of 2)

A Classify Dental Cements. Discuss glass ionomer cement for its composition, setting reaction and properties in detail.

B Define Dental Amalgam. Discuss classification, setting reaction and manipulation of Dental amalgam in detail.

Q.6 Write Short Essay (3 out of 5)

A Delayed Expansion

B Zinc Phosphate Cement

C Classification of Direct Filling Gold

D Classification of Dental Composite

E Tarnish and corrosion

Q.7 Answer following

A Which ingredient act as scavenger in Dental Amalgam?

B What is the percentage of Zinc in zinc containing alloy?

C Which one is the Strongest phase of Dental amalgam?

D Frozen slab technique s applicable for which dental cement?

E Which element is responsible for anticariogenic property of Glass Ionomer cement?

Q.8 Answer following MCQ's

A Cavity varnish is used for:

a) To reduce thermal conductivity

b) To reduce the permeability of acid into dentinal tubules

c) Action as an obtundant

d) All of the above

B Glass ionomer cements are composed of

a) Alumino silicate powder and phosphoric acid

b) Alumino silicate powder and polyacrylate liquid

c) Zinc oxide powder and phosphoric acid

d) Zinc oxide powder and polyacrylate liquid

C Which one of the following dental cement accelerates the formation of reparative dentin?

a) Eugenol b) Calcium hydroxide c) Zinc oxide d) Silica

D Delayed expansion of amalgam start

a) within 24 hours b) after 3-5days c) After 3-5 months d)After 3-5 Years

E Retention in a composite restoration is mainly attained by

a) Chemical adhesion

b) Acid etching & Bonding

c) Inverted Truncated shape

d) Undercuts

SANKALCHAND PATEL UNIVERSITYBDS – 2nd Year – EXAMINATION – SUMMER 2018

Subject Code: 1DS1010104

Date: 13/06/2018

Subject Name: DENTAL MATERIALS

Time: 3 hours

Total Marks: 70

Instructions:

1. Use separate answer book for each section.
2. Attempt all questions.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate marks.

SECTION – A

- Q.1 Answer Structured Long Essay question (ANY ONE) 10**
- A** Classify impression materials. Discuss composition, setting reaction and properties of Alginate impression material.
- B** Classify Denture base materials. What are the physical and chemical stages of polymerization of acrylic resins? Discuss compression moulding technique.
- Q.2 Answer Short Essay questions (ANY THREE) 15**
- A** Casting defects
- B** Blue inlay wax
- C** Stress-strain curve
- D** Soldering, brazing and welding
- E** Phosphate bonded investment materials
- Q.3 Answer following short questions. 5**
- A** Define 'chroma'.
- B** What is type IV gypsum product?
- C** Name the initiator in autopolymerizing acrylic resins.
- D** What is 'Beilby's layer'?
- E** Which ingredient replaces Eugenol in non-eugenol impression paste?
- Q.4 Answer following MCQ's 5**
- A** When mixing water and gypsum, which of the following should be added first?
- a. Water
 - b. Gypsum product
 - c. Both should be added simultaneously
 - d. Doesn't make a difference
- B** Pickling to remove oxide layer in gold casting is done with:
- a. 50% HCl
 - b. 50% HF
 - c. 90% HCl
 - d. 80% H₂SO₄
- C** Which of the following is not an example of elastic impression material?
- a. Polysulfide
 - b. Addition silicone
 - c. Alginate
 - d. ZOE impression paste
- D** Dental porcelains are crystalline materials of:
- a. Rubber
 - b. Plastics
 - c. Organic Substances
 - d. Glass
- E** Chromium in dental casting alloys increases:
- a. Strength
 - b. Corrosion resistance
 - c. Ductility
 - d. None of the above

SECTION - B**(ANY ONE)****Q.5 Answer Structured Long Essay question**

- A Define and classify dental amalgam. Write the composition and the role of each ingredient of the same.
- B Discuss in detail- GIC.

Q.6 Answer Short Essay questions**(ANY THREE)**

- A Zinc oxide eugenol cement
- B Burnishing
- C Polymerization shrinkage
- D Initiators and accelerators in dental composites
- E Tarnish and Corrosion

Q.7 Answer following short questions.

- A Write composition of Zinc Phosphate Cement
- B Write setting reaction of high copper amalgam
- C Define creep and flow
- D Mention types of curing lights
- E What is smear layer?

Q.8 Answer following MCQ's

- A Which of the following is added to composites to decrease the viscosity
 - (a) Bis-GMA
 - (b) TEG-DMA
 - (c) Urethane Diamethacrylate
 - (d) Zirconium
- B Which of the following are microhardness tests
 - (a) Knoop & Vickers
 - (b) Knoop & Brinell
 - (c) Brinell & Rockwell
 - (d) Rockwell & Vickers
- C Which of the following is not direct tooth coloured restorative material
 - (a) GIC
 - (b) Ceramics
 - (c) Silicate cement
 - (d) Composite
- D Which of the following bonds micromechanically to tooth structure
 - (a) GIC
 - (b) Silver amalgam
 - (c) Direct filling gold
 - (d) Composite
- E Which of the following factors affect curing of composite
 - (a) Thickness of the increment placed
 - (b) Shade of restoration
 - (c) Amount and size of the filler particles
 - (d) All of the above

Narsinhbhai Patel Dental College & Hospital, Visnagar
Department of Prosthodontics and Crown and Bridge

II B.D.S. Second Internal Examination -2017 – 2018
DENTAL MATERIALS

Time: 2 hrs

Total Marks: 50

Draw neat labeled diagrams wherever necessary.

Section- A (25 Marks)

1. Long Essay

1x7 =7

Classify investment materials .Discuss the investment material used for high fusing casting alloy.

2. Short Notes (3 of 5)

3×4=12

- a) Suck back porosity.
- b) Implant bio – materials.
- c) Hygroscopic expansion.
- d) Zone of flame - with diagram.
- e) Hue, chroma & value.

3. Answer in one line (6)

6x1=6

1. Tarnish & corrosion.
2. Polishing agent.
3. Kieselguhr.
4. Slurry water.
5. What is bench curing?
6. Annealing.
7. Ductility & Malleability.

DENTAL MATERIALS

II B.D.S first Internal Examination 2019-20

Time: 1 Hour 30 Mins

[25 MARKS]

SECTION I

1. Long Essay

Classify dental waxes and write in detail about blue inlay wax.

[7]

2. Write Short Note [Any Three]

- a) Laminate technique
- b) Tarnish and corrosion
- c) Normal vs hygroscopic setting expansion
- d) Manipulation of impression compound
- e) Hue value chroma

[12]

3. Answer in one line

- a) Glass transition temperature
- b) Stress and strain
- c) CTE
- d) Setting reaction of alginate
- e) Chemical stages of polymerization
- f) Beilbey's layer

[6]

SECTION – II

Long Essay

(7 marks x 1 = 7 marks)

1. Define Dental Amalgam; write about property of silver amalgam.

Short Notes (Any Three)

(4 marks x 3 = 12 marks)

2. Composition of Dental Amalgam
3. Mercury Toxicity
4. History of Dental Amalgam
5. Classification of Silver Alloys
6. Setting Reaction of High Copper Alloy

MCQS

(1 marks x 6 = 6 marks)

7. The term "trituration" means
 - A) Lysing amalgam alloy
 - B) Mixing of amalgam alloy and mercury
 - C) Removal of excess of mercury
 - D) None of the above
8. Moisture Contamination of amalgam can lead to
 - A) Marginal breakdown
 - B) Shrinkage
 - C) Delayed expansion
 - D) Increased stresses
9. The largest component of amalgam alloy is
 - A) Zinc
 - B) Copper
 - C) Silver
 - D) Palladium
10. Which of the following strongest phase of the set amalgam:
 - A) Beta
 - B) Gamma
 - C) Gamma-1
 - D) Gamma-2
11. Which ingredient cause delayed expansion?
 - A) Zinc
 - B) Copper
 - C) Silver
 - D) Palladium
12. Which component act as scavenger?
 - A) Zinc
 - B) Copper
 - C) Silver
 - D) Palladium

Narsinhbhai Patel Dental College & Hospital, Visnagar
Department of Prosthodontics and Crown and Bridge

II B.D.S. Preliminary Examination -2018-19
DENTAL MATERIALS

Time: 3 hrs

Total Marks: 70

Draw neat labeled diagrams wherever necessary.

SECTION - I

(1 x 10=10 marks)

1. Classification of investment materials. Write in detail about gypsum bonded investment materials.

Or

1. Write in detail about composition, classification, uses and strengthening procedure for ceramics.

2. Write short notes (Any Three)

(3 x 5 = 15 marks)

1. Types of corrosion.
2. Polishing agents any 2.
3. Classification of dental wax.
4. Rake angle with diagram.
5. Classification of dental casting alloy.

3. Answer in one line.

(5x1marks = 05 marks)

1. Zone of flame.
2. Welding?
3. 18-8 alloy.
4. What is pickling?
5. Full form of CAD & CAM?

4. MCQ

(5x1marks = 05 marks)

1. 4th state of matter is
a) Solid b) Colloid c) Gas d) Liquid
2. The main ingredient of inlay wax is?
a) Candellila wax b) Paraffin wax c) Carnauba wax d) Gum dammar
3. Percentage of gold in high noble alloy is
a) <25% b) 25% c) >40% d) 0%
4. Temperature for brazing is
a) 250 degree b) 250-350 c) 350-450 d) >450
5. Wax used in Inlay Cast Metal fabrication?
a) Casting wax b) Inlay wax c) Sticky wax d) Utility wax

SECTION – II

5. Classify dental cement. Describe in detail about Calcium Hydroxide Cement.

Or

5. Describe in detail about Composite resin.

(10 marks)

6. Write short notes (Any Three)

(3x5marks = 15 marks)

1. Glass Ionomer Cement
2. Manipulation of Silver Amalgam
3. Direct Filling Gold
4. Zinc Phosphate Cement
5. Composition of Silver Alloys

7. Answer in one line.

(5x1marks = 05 marks)

1. Which ingredients cause delayed expansion?
2. What is pre-carv burnishing & post-carv burnishing?
3. Define Tarnish?
4. Write a type of Zinc oxide eugenol Cement.
5. Write name of cements which is micro-mechanically bond to tooth structure?

8. MCQ

(5x1marks = 05 marks)

1. The powder/liquid ratio for glass ionomer cement is:
A. 1:3
B. 3:1
C. 2:4
D. 4:2
2. Which of the following cement is used as a pulp capping agent:
A. ZnOE cement B. Glass ionomer cement
C. Calcium hydroxide cement D. Polycarboxylate cement
3. Secondary caries is found to be less when cavity restoration is done with:
A. Silver amalgam B. Glass ionomer cement C. Zinc phosphate D. Gold inlays
4. The severe irritant to dental pulp is:
A. Zinc phosphate B. Glass ionomer cement
C. Silicophosphate cement D. Silicate cement
5. Conventional cavity varnish should not be employed under.
A. Amalgam restoration B. Glass ionomer Cement
C. Zinc phosphate cement D. Direct resin filling material

Narsinhbhai Patel Dental College & Hospital, Visnagar
Department of Prosthodontics and Crown and Bridge

II B.D.S. Second Internal Examination -2018-19

DENTAL MATERIALS

Time: 2 hrs

Total Marks: 50

Draw neat labeled diagrams wherever necessary.

Section- A (25 Marks)

1. Long Essay

1x7 =7

Classify dental casting alloy and write in detail about casting procedure.

2. Short Notes (3 of 5)

3x4=12

- a. Blue inlay wax
- b. Stress – strain curve
- c. Die and die materials
- d. Welding, brazing and soldering
- e. Syneresis and imbibitions

3. Answer in one line (6)

6x1=6

- a. Stress and strain
- b. NiTi
- c. 18-8 SS
- d. Soluble plaster
- e. Divestment
- f. Black casting

SECTION - B

Question-1 Long Essay

(7 marks)

Classify dental cement. Describe in detail about Zinc Phosphate Cement.

Question- 2 Write short notes (Any Three)

(3x4marks = 12 marks)

1. Setting reaction of GIC
2. Tarnish & Corrosion
3. Classification of composite resin
4. Zinc Oxide Eugenol Cement
5. Classification of Silver Alloys

Question- 3 MCQ.

(6x1marks = 06 marks)

1. Fluoride rich materials include?
B) Silicate Cement B) Glass Ionomer Cement
C) Polycarboxylate Cement D) All of the above
2. Atraumatic Restorative Treatment (ART) technique utilizes
A) Glass Ionomer Cement B) Composite Resin
C) Silver Amalgam D) Zinc Phosphate Cement
3. Which of the following show chemical bond with enamel :
A) Composite B) Glass Ionomer Cement
C) Direct Filling Gold D) All of the above
4. Which of the following cements is most biocompatible with pulp?
A) GIC B) Copper cement
C) Zinc Phosphate cement D) Zinc oxide eugenol cement
5. Which ingredient cause delayed expansion?
a. Zinc B. Copper C. Silver D. Palladium
6. Which component act as scavenger?
a. Zinc B. Copper C. Silver D. Palladium

Narsinhbhai Patel Dental College & Hospital, Visnagar
Dental Materials

IIND B.D.S. First Examination-2018 – 2019

Draw neat labeled diagrams wherever necessary.

Time: 2 hrs

Total Marks: 50

Section- A (25 Marks)

1. Long Essay

1x 7marks=7

- a) Gypsum product – definition, types, Uses, W/P ratio, and theory of expansions in detail.

2. Short Notes (3 of 5)

3× 4marks =12

- a) Classification of dental wax
- b) laminate technique.
- c) Classify impression materials
- d) Tarnish & Corrosion.
- e) Classify denture base material

3. Answer in one line

6x1 marks=6

- a) Types of investment material
- b) Accelerators in gypsum.
- c) Syneresis & Imbibition.
- d) Give example for rigid, irreversible impression material.
- e) Mode of action of cold mold seal.
- f) Divestment

SECTION – B (25 MARKS)

Long Essay

(7 marks x 1 = 7 marks)

1. Discuss classification, property, advantages and disadvantages of Silver Amalgam.

Short Notes (Any Three)

(4 marks x 3 = 12 marks)

2. Composition of Dental Amalgam
3. Mercury Toxicity
4. Manipulation of Dental Amalgam
5. History of Dental Amalgam
6. Setting Reaction of high copper alloy

MCQS

(1 marks x 6 = 6 marks)

7. The term "trituration" means
 - A. Lysing amalgam alloy
 - B. Mixing of amalgam alloy and mercury
 - C. Removal of excess of mercury
 - D. None of the above
8. Moisture contamination of amalgam can lead to :
 - A. Marginal break down
 - B. Shrinkage
 - C. Delayed expansion
 - D. Increased stresses
9. Which of the following silver amalgam alloys have the maximum strength
 - A. Lathe cut
 - B. Spherical
 - C. Admixed
 - D. Single composition
10. In amalgam alloy which acts as oxygen scavenger:
 - A. Cu
 - B. Zn
 - C. Pd
 - D. Ag
11. By increasing the percentage of which metal, the strength and hardness of amalgam increases:
 - A. Ag
 - B. Zn
 - C. Cu
 - D. Hg
12. Admixed high copper alloy powder contains
 - A. 9-20% copper
 - B. 13-20% copper
 - C. 13-30% copper
 - D. 9-30% copper

Narsinhbhai Patel Dental College & Hospital, Visnagar
Department of Prosthodontics- Dental Materials
IIND B.D.S. Internal Examination-2017 – 2018

Draw neat labeled diagrams wherever necessary.

Time: 3hrs

Total Marks: 50

Section- A (25 Marks)

1. Long Essay

1x7=7

- a) Classify Impression Materials. Write in detail about composition, setting reaction, manipulation, properties and uses of Bite registration paste.

2. Short Notes (3 of 5)

3×4=12

- a) Hue, value & chroma.
- b) Hardness
- c) Syneresis and Imbibition
- d) Physical stages of polymerization of Acrylic resin
- e) Compression moulding technique

3. Answer in one line

6x1=6

- a) Poisson's ratio
- b) Soluble plaster
- c) Composition of Impression compound.
- d) Uses of Irreversible hydrocolloid impression material
- e) What is CTE?
- f) What is calcination?

NARSINHBHAI PATEL DENTAL COLLEGE & HOSPITAL, VISNAGAR

SECOND INTERNAL EXAM

DENTAL MATERIAL

SECTION – B

Long Essay

(7 marks x 1 = 7 marks)

1. Define Dental Amalgam, write Manipulation of Dental Amalgam.

Short Notes (Any Three)

(4 marks x 3 = 12 marks)

2. Advantage and Disadvantage of Dental Amalgam
3. Mercury Toxicity
4. Property of Dental Amalgam
5. Classification of Silver Alloys
6. Setting Reaction of Admixed type of high copper alloy

MCQS

(1 marks x 6 = 6 marks)

7. Strongest phase of Silver amalgam _____
Weakest Phase of Silver Amalgam _____
8. Which ingredient cause delayed expansion in silver amalgam?
9. What is Eames Technique.
10. Maximum Strength of Silver amalgam occurs After ____ Hours
11. Define trituration.
12. Importance of Pre-carve & Post-carve Burnishing.