

2018

ST.GREGORIOS DENTAL COLLEGE

Q P Code: 411002

Reg. No.:

Final Year Part I III Internal BDS Degree Regular/Supplementary Examinations Nov 2022
Oral Medicine and Radiology
(2016 Scheme)

Time: 3 hrs

Max marks: 70

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
- Answer all parts of a single question together • Leave sufficient space between answers
- Draw Diagrams wherever necessary.

Essays:

(2x10=20)

- 1 Classify Orofacial pigmentation..DD of Endogeneous pigmentation
2. DD of Pericoronal radiolucencies.

Short Essays:

(4x5=20)

- 3.Xerostomia
4. Role of corticosteroids in dentistry
- 5.Sialography
6. Digital sensors

Short notes:

(10x3=30)

- 7 Antibiotics in dentistry
8. Sialosis
9. Uses of CBCT in dentistry
10. Object Localisation technique
- 11.Bitewing technique
- 12.Role of radiographs in implantology
13. Enumerate periapical radioopacities
14. Sialolithiasis
15. Occlusal radiography
16. Necrotising sialometaplasia

ST GREGORIOS DENTAL COLLEGE

Final Year Part 1 III Internal BDS Degree Regular/Supplementary Examinations Nov 2022

ANSWER KEY (2016 SCHEME)

ESSAYS

1) EXOGENOUS

Amalgam tattoo

Heavy metal pigmentation\on

Drug induced pigmentation

Foreign body pigmentation

ENDOGENOUS

Melanin {brown,black or grey}

Haemoglobin {blue,red,purple}

Haemosiderin {brown}

Lesions consisting of haemoglobin pigments

HEMANGIOMA

- true neoplasms and appear a few weeks after birth and grow rapidly.
- characterized by endothelial cell hyperplasia
- Capillary of cavernous hemangiomas involving any organ system are now classified as infantile Hemangiomas

VARICES

- Pathological dilatation of vein
- Reddish to purple
- Seen on tongue,lip or cheek
- Borders sharply delianeted or smooth

THROMBUS

- Commonly on lower lip and buccal mucosa
- If present in varix appears as bluish purple nodules

KAPOSIS SARCOMA

4 TYPES

- Classic
- Endemic
- Immunosuppression Associated
- AIDS related

ANGIOSARCOMA

- Malignant Vascular Tumor
- Mandible Mostly Affected
- On Manipulation Bleed Spontaneously & Firm Consistency

Lesion consisting of hemosiderin pigments

ECHYMOSIS AND PETACHIAE

- Echymosis > 2cm in size
- Petechiae are small pinpoint hemorrhage

HEMOCHROMATOSIS

- Men predilection
- Pancreas, liver, skin and adrenal gland affected

HEMATOMA

- In mucosa due to trauma
- Does not show blanching on applying pressure

Brown melanotic lesions

MELANOTIC MACULE

- Middle age
- Female predilection
- Blue, brown grey or black

MELANOACANTHOMA

MELANOPLAKIA

- flat localized lesion black or brown in color

MELANOMA

ADDISON'S DISEASE

- Melanin gets deposited on mucus membrane and skin at pressure point.
- cheek more affected

2) DENTIGEROUS CYST

forms around the crown of an unerupted tooth. It begins when fluid accumulates in the layers of reduced enamel epithelium

Radiographic Features

- a well defined radiolucency, usually with a hyperostotic border associated with the crown of unerupted teeth
- usually unilocular but sometimes may appear multilocular
- 3 types: Central, lateral and circumferential

ADENOMATOID ODONTOGENIC TUMOR

- This is an uncommon, nonaggressive tumor of odontogenic epithelium, with a duct like structure and varying degree of inductive changes in the connective tissue.
- May have a follicular relationship with the impacted tooth
- It appears as a well-defined, unilocular radiolucency, with sclerotic borders.

- As the tumor enlarges it causes displacement of the adjacent teeth.
- Root resorption is rare.

CALCIFYING EPITHELIAL ODONTOGENIC TUMOR

- Unilocular-either diffuse or well circumscribed radiolucent area with or without radiopaque foci close to crown
- Multilocular combined pattern of radiolucency and radiopacity :honey comb pattern
- Driven snow appearance

UNICYSTIC AMELOBLASTOMA

- Unilocular radiolucency associated with an impacted tooth

SHORT ESSAYS

3)

- Xerostomia is the most common late adverse effect of radiation therapy in head and neck cancer patients
- negative impact on quality of life affecting general comfort and oral functions of speech, taste, and chewing/swallowing which may further result in inadequate food intake and difficulties with social interaction.

Management

Treatments available for the dry mouth patient may be divided into five main categories:

- preventive therapy, Supplemental fluoride; remineralizing solutions; optimal oral hygiene; non cariogenic diet
- symptomatic (palliative) treatment, Water; oral rinses, gels, mouthwashes; increased humidification; minimize caffeine and alcohol
- local or topical salivary stimulation, Sugar-free gums and mints
- systemic salivary stimulation, Parasympathomimetic secretagogues: cevimeline and pilocarpine
- Treatment of underlying systemic disorders :Anti-inflammatory therapies to treat the autoimmune exocrinopathy of Sjögren's syndrome

4) 2 TYPES:Glucocorticoids And Mineralocorticoids

GLUCOCORTICOIDS

- In acute and chronic adrenal insufficiency
- RA and osteoarthritis
- Rheumatic fever and acute gout
- Severe allergic reactions
- Bronchial asthma , aspiration, pneumonia, pulmonary oedema
- Eczema

MINERALOCORTICOIDS

- Addison's disease
- Hypoaldosteronism, diabetes mellitus
- Severe postural hypotension

5) Sialography is the radiographic visualization of the salivary gland following retrograde instillation of soluble contrast material into the ducts

USES

- Delineating ductal anatomy and for identifying and localizing sialoliths.
- evaluating intrinsic and acquired abnormalities of the ductal system as it provides the clearest visualization of the branching ducts and acinar end-pieces.
- tool in presurgical planning prior to removal of salivary masses.
- Salivary obstruction, whether by a sialolith or stricture, can be easily recognized by sialography.

INDICATION

When patients present with a history of rapid onset, acute, painful swelling of a single gland (typically brought on by eating).

SIALOGRAPHIC APPEARANCE

- Normal Parotid Gland-Tree In Winter Appearance
- Normal Submandibular Gland-Bush In Winter Appearance
- Sialodochitis-Sausage Link Appearance
- Sjogren Syndrome-Snowstrom/Cheeryblossom/Branchless Fruit Laden Tree
- Intrinsic Tumors-Ball In Hand

6) DIGITAL SENSORS

CCD

COMPONENTS

- Scintillator-Convert X-Ray To Visible Light
- Fibreoptic-Transmit Visible Light To Chip And Stop X Rays
- Main Ccd Component ;Convert Light Signal To Electron/Electron Voltage

CMOs

Electron reading done in each pixel separately

Advantage

- Individual pixel may be made smaller
- Power requirements are much less
- Cost lower than CCD

PSPs

Absorbs and store energy from X-ray and then release this energy as light which is stimulated by other light of an appropriate wavelength

SHORT NOTES

7)

2 types: bacteriostatic and bacteriocidal

Indication

- For therapeutic purpose-host response is reduced by disease such as diabetes mellitus, malnutrition, alcoholism ; in acute rapidly spreading infections; in odontogenic infection, soft tissue wounds etc
- For prophylactic purpose-postoperative wound infection; before preoperative procedures

Commonly used are penicillin, cephalosporin, erythromycin, clindamycin, metronidazole

8)

- Non neoplastic, non inflammatory enlargement of parotid gland
- Bilateral and symmetric
- Glands soft and Non tender
- May be associated with dm and certain medication

9) USES OF CBCT

- evaluate odontogenic and non odontogenic infection in 3D
- Pathosis involving maxilla, mandible and TMJ
- Establish size and site of cyst and tumor
- Study maxillary sinus
- 3d evaluation of impaction

- Orthodontic treatment
- Tooth development in children
- Age and gender estimation in forensic
- Dentoalveolar trauma evaluation

10)

- Two methods are frequently used to obtain three-dimensional information.
- The first is to examine two films projected at right angles to each other.
- The second method is to use the so-called tube shift technique
- The right-angle (or cross-section) technique is best for the mandible.
- On a maxillary occlusal projection the superimposition of features in the anterior part of the skull may frequently obscure the area of interest
- The second method used to identify the spatial position of an object is the tube shift technique
- The rationale for this procedure derives from the manner in which the relative positions of radiographic images of two separate objects change when the projection angle at which the images were made is changed.
- If the tube is shifted and directed at the reference object (e.g., the apex of a tooth) from a more mesial angulation and the object in question also moves mesially with respect to the reference object, the object lies lingual to the reference object.
- Alternatively, if the tube is shifted mesially and the object in question appears to move distally, it lies on the buccal aspect of the reference object

11)

Bitewing technique

- Crown of upper and lower seen together in radiograph
- Detects proximal caries
- Used in evaluation of alveolar bone height
- Evaluation of periodontal status
- And helps in detecting overhanging restorations

12)

- Diagnostic imaging and techniques help to develop and implement a cohesive and comprehensive treatment plan for the implant team and the patient
- implant imaging must be individualized to the particular needs of each patient
- must recognize that the imaging as well as the implant process is prosthetically driven.
- IMAGING OBJECTIVES The objectives of diagnostic imaging depend upon a number of factors including—• Amount of information required • Type of information required • The time period of treatment rendered.

13)

- Condensing osteitis
- Hypercementosis
- Cementoblastoma
- Periapical cemental dysplasia
- Cementifying ossifying fibroma
- Idiopathic osteosclerosis

14)

- Sialoliths (also termed salivary calculi or salivary stones) are typically calcified organic masses that form within the secretory system of the major salivary glands.
- etiologic factors favoring salivary stone formation may be classified into two groups: factors favoring saliva retention (i.e., irregularities in the duct system, local inflammation, dehydration, medications such as anticholinergics and diuretics) and saliva composition (i.e., calcium saturation and deficit of crystallization inhibitors such as phytate).
- Salivary stones occur most commonly in the submandibular glands (80%–90%), followed by the parotid (5%–15%) and sublingual (2%–5%) glands and only very rarely occur in the minor salivary glands.
- TREATMENT—use of analgesics, hydration, antibiotics, and antipyretics, as necessary. Sialogogues, massage and heat applied to the affected area may also be beneficial.

15)

- Image receptor placed on occlusal surface of teeth to be examined

INDICATION

- In patients with difficulty in mouth opening
- To locate supernumerary, unerupted or impacted teeth
- To evaluate fractures
- Retained root of extracted teeth
- Evaluate extension of lesion
- To locate foreign bodies in mandible

16)

- **Nerotizing sialometaplasia (NS) is a benign, self-limiting, reactive inflammatory disorder of salivary tissue.**

- etiology is unknown, although it likely represents a local ischemic event, infectious process, or perhaps an immune response to an unknown allergen.
- Most commonly it presents as a painful, rapidly progressing swelling of the hard palate with central ulceration and peripheral erythema.
- The associated pain is often described as sharp in character and may precede mucosal changes.
- Numbness or anesthesia in the associated area may be an early finding.
- The lesions are typically of rapid onset and range in size from 1 to 3 cm
- This is considered a self-limiting condition typically resolving within 3–12 weeks

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**Final Year Part I Second Internal BDS Degree Regular Examinations August 2022
Oral Medicine and Radiology
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(2x10=20)

Essays:

1. DD of multilocular radiolucencies
2. Define OPG. Describe in detail the principles of OPG. Enumerate indications, advantages and disadvantages of OPG(1+6+2+1+1)

(4x5=20)

Short Notes:

3. Role of corticosteroid in dentistry
4. Significance of antibiotics in dentistry
5. TMJ radiography
6. Enumerate sinus views. Describe in detail Water's view

Answer Briefly:

(10x3=30)

7. Tuberculosis
8. Syphilis
9. Antrolith
10. Oroantal fistula
11. Metronidazole
12. Submentovertex view and Jug handle view
13. Lateral cephalometry
14. Steps in Quality assurance in dental radiography
15. Enumerate the image characteristics in dental radiology
16. Maxillary sinusitis

FINAL YEAR PART 1 SECOND INTERNAL EXAMINATION
ORAL MEDICINE AND RADIOLOGY
ANSWER KEY (2016 SCHEME)

1. DD OF MULTILOCULAR RADIOLUCENCIES

Appearances:

- Honey comb pattern
- Soap bubble appearance
- Tennis racket pattern
- > Honey comb: Presents as small compartments
 - Uniform in size
 - Represent earlier change than soap bubble appearance
 - Seen in ameloblastoma, central giant cell granuloma
- > Soap bubble: Several circular compartments
 - Varying in size
 - Appears to overlap
 - Formed by joining multiple honey comb patterns
 - Seen in aneurysmal bone cyst, central haemangioma
- > Tennis racket: Composed of angular compartments
 - Septa intersect at right angles
 - Seen in odontogenic myxoma

2. OPG

- Definition: Technique for producing single tomographic image of facial structures that include maxillary, mandibular structures and supporting structures.
- Principle:
 - Based on tomography
 - Two movements -
 - a) Opposite movement of x ray machine and film holder
 - b) Movement of film in its own axis, that is in opposite direction to film holder
 - Presence of multiple centre of rotation
- Indications:
 - Oral / maxillofacial pathologies - Odontogenic, non odontogenic diseases
 - Fractures
 - Size and site of cysts, tumours
 - Study maxillary sinus
 - Evaluate developmental anomalies
 - Oral surgery - TMJ pathologies
 - Implant assessment
 - Impactions
 - Surgical procedures

Post operative healing

Orthodontic evaluation

Age / gender estimation in forensics

Endodontics - Periradicular surgical planning

Periapical pathologies

Periodontics - Bone loss

Bone craters

Furcation involvement

→ Advantages:

Simple, little patient compliance

Trismus, gagging problems

Max. and mand. In single film

Low patient dose

Object localisation

Mass screening

Patient education

→ Disadvantages:

Distortion, magnification

Focal trough - poorly visualised

Overlapping

High machine cost

3. ROLE OF CORTICOSTEROIDS

Immunosuppression

Anti-inflammatory action

Mechanism: Inhibits inflammatory cytokines

Mode:

1. Topical - Hydrocortisone 2.5mg

Betamethasone phosphate 0.5mg

Betamethasone valerate 0.1%

Triamcinolone acetonide 0.1%

Beclometasone dipropionate

Fluticasone propionate 0.05% cream

Clobetasol propionate 0.05% cream

2. Intralesional - Prednisolone sodium phosphate - upto 22mg

Triamcinolone acetonide - 2 to 3mg

Methylprednisolone acetate - 4 to 80mg

3. Systemic - Used in management of Bells palsy, pemphigus, lichen planus, recurrent aphthous ulcer

Azathioprine: 2 - 2.5 mg/kg daily

Cyclosporine: 1 - 2 mg/kg daily

Dapsone: 1 mg/kg daily

4. SIGNIFICANCE OF ANTIBIOTICS

Indications - Cervical facial space infections

Osteomyelitis

Odontogenic infections

Pericoronitis

Dry socket

Dental Abscess

Acute ulcerative gingivitis

Most commonly used penicillins.

Amoxicillin 500mg x tid

Flucoxacillin 500mg x qid

Prophylactic measures: infective endocarditis

Cerebrospinal rhinorrhea

Compound skull fractures

Immunocompromised patients

5. TMJ RADIOGRAPHY

- Normal tmj anatomy:

Condylar head, disc, glenoid fossa, condylar head, capsule

- Investigations:

a) Panoramic radiography: Direct comparison of both condylar heads

Shape of condylar head

Condition of articular surfaces

b) Transpharyngeal radiography:

TMJ dysfunction syndrome

Joint diseases

Pathological conditions

Fractures of neck and head of condyle

c) Transcranial projection: Lateral aspect of condyle and temporal component

d) Transorbital projection: Medial surface of condylar head and neck

e) CBCT: Condition of glenoid fossa and articular eminences

Shape of condyle, condition of articular eminence

Nature of disease of condylar heads

f) Arthrography

Used in: Longstanding tmj pain dysfunction

Persistent history of locking

Limited mouth opening

g) CT

h) MRI

6. SINUS VIEWS

- Submentovertex view

- Water's view

WATER'S VIEW

Film placed perpendicular to floor

Patient position - Head extended, chin touches cassette

Midsagittal plane vertical and perpendicular to plane of film

Canthomeatal line forms 37 degrees from plane of cassette

Central ray - directed perpendicular and to midpoint of film

Indications - Maxillary sinus, ethmoidal sinus, frontal sinus

Nasal cavity, coronoid process of mandible, zygomatic arch

Open mouth view - sphenoid sinus

7. TUBERCULOSIS

Causative agent - Mycobacterium tuberculi

Risk factors - Overcrowding, undernutrition

HIV

Smoking, alcohol

Pathogenesis: Airborne spread, aerosols

Clinical features: Pulmonary

Extrapulmonary

Oral manifestations: Chronic painless ulcer

Nodular, granular, firm leukoplakic areas

Enlarged regional lymph node

Management:

First line drugs - Isoniazid, Rifampin, Pyrazinamide, Ethambutol

Second line drugs - Streptomycin, Kanamycin, Cycloserine

8. SYPHILIS

- I. Sexually transmitted disease
- II. Causative agent: Treponema pallidum
- III. Pathogenesis: Invades intact mucous membrane, enters lymphatics and blood, produces systemic infections
- IV. Clinical features: Primary, secondary, tertiary stages
- V. Oral manifestations: Gumma, snail track ulcers, chancre, mucous patches, condylomata lata, Hutchinsons teeth
- VI. Treatment: Antibiotics- penicillin G
Penicillin resistance - Macrolides

9. ANTROLITH

Definition - Occurs within maxillary sinus, result of deposition of mineral salts around a nidus.

C/F: Smaller antrolith asymptomatic

Larger antrolith - associated sinusitis, blood stained nasal discharge, nasal obstruction, facial pain

R/F: Location, periphery and shape, internal structure
Management: Removal (Otolaryngologist)

10. OROANTRAL FISTULA

- a) Communication between oral cavity and maxillary antrum
- b) Etiology: Maxillary posterior extractions, root fractures, cyst and tumours, periapical lesions, osteomyelitis, malignancies, apicoectomy
- c) C/F: Nasal resonance, pain, epistaxis, escape of fluids, systemic features
- d) Management: Oaf closure techniques
Soft tissue flap, bone grafts, alloplastic material

11. METRONIDAZOLE

Antibiotic, amoebicide, antiprotozoal
Treats anaerobic bacterial infections - dental abscess, acute ulcerative gingivitis, pericoronitis
Mechanism: inhibits nucleic acid synthesis, disrupt DNA of microbial cells

12. SUBMENTOVERTEX VIEW

Film placed perpendicular to floor
Patient neck hyperextended, vertex of skull in contact with cassette
Indication - fracture of zygomatic arch
Visualise base of skull
Evaluate palate and sphenoid sinus

JUG HANDLE VIEW

- Modification to see zygomatic arch
- Decreased kVp

13. LATERAL CEPHALOMETRY

Extraoral radiographic technique
Midsagittal plane vertical and parallel to cassette
Film perpendicular to floor
Patient should close mouth, teeth in occlusion
Horizontal beam centered on external acoustic meatus, perpendicular to cassette
Indications - Evaluate hard and soft tissue of face
Assess skeletal pattern, facial growth and developmental anomalies
Assess position of teeth

14. STEPS IN QUALITY ASSURANCE

Daily: Check processing
Enter causes of retakes
Replenish processing solution
Check temp. of solution
Weekly: Replace processing sol.

Clean processing equipment
Clean viewbox
Review retake log
Monthly: Check darkroom safe lighting
Clean intensifying screen, rotate film stock
Check exposure chart
Yearly: Calibrate x ray machine

15. IMAGE CHARACTERISTICS

- Radiographic density
- Radiographic contrast
- Radiographic speed
- Film latitude
- Image quality
- Sharpness and resolution

16. MAXILLARY SINUSITIS

- Generalised inflammation of paranasal mucosa
- Etiology: allergen, bacterial, viral
- 3 types: Acute, subacute, chronic
- Radiography: Waters view
- Management: Control infection
Promote drainage
Relieve pain

ST. GREGORIOS DENTAL COLLEGE

ORAL MEDICINE AND RADIOLOGY

FIRST INTERNAL EXAMINATION

Time : 3 hours

Max marks 70

Long Essays

10*2

1. Classify orofacial pain .Describe in detail about the etiopathogenesis, clinical features, diagnosis, management of Trigeminal neuralgia
2. Describe in detail about Latent image formation , composition and function of processing solution

Short Essays

5*4

3. Production of X-ray
4. Fibrous dysplasia
5. Effects of radiation on bone and teeth
6. Dental considerations in hypertensive and diabetic patients

Short Notes

3*10

7. cherubism
8. Pagets disease
9. Atypical odontalgia
10. Oral cancer
11. Oral manifestations of HIV
12. Causes of light radiograph
13. Automatic processor
14. Collimators and filters
15. Bremstralung radiation
16. Electromagnetic radiation

1st internal 2018 regular batch

1. classification of orofacial pain

1. orofacial pain

Classification

a. axis I - odontogenic pain, oral soft connective tissue

pain, tmj pain, muscle pain, neuropathic pain, osseous and periosteal pain, maxillary sinus associated pain, salivary gland associated pain, ear pain, vascular pain

b. axis II - generalized anxiety disorders, post-traumatic neuralgia, mpds, burning mouth syndrome

trigeminal neuralgia

etiology - intracranial and extracranial causes

clinical features - pain manifestations

other features -

paroxysms, frozen face, clutches hands, trigger zone

- sweet criteria TN
- diagnosis - chairside investigation, advanced investigation

- management - pharmacological- carbamazepine, oxycarbazepine, gabapentine, b aclofen
- surgical therapy

2. latent image formation

- Latent image formation
- Composition
- Functioning of processing solution

3. production of X -ray

- What is x -ray
- Mech of x-ray production

4. fibrous dysplasia

- etiology
- clinical features
- radiographic features-ground glass appearance, cotton wool , moth eaten appearance
- diagnosis
- mgt

5. effect of radiation

- teeth-inhibit cellular differentiation, defect in permanent dentition,
- radiation caries
- mgt-neutral sodium fluoride gel, topical fluoride, avoidance of dietary sucrose, restorative dental procedures
- bone-osteoradionecrosis-exposed bone with pus, bad odour, swelling, ulceration, xerostomia
- mgt-pre radiation protocol, intraradiation protocol, post radiation protocol
- antibiotic therapy, analgesics, antifungal, antiviral therapy, wound care, ozone therapy ultrasound therapy, hyperbaric oxygen therapy

6. dental considerations in hypertensive and diabetic patients

- consultation with pts physician
- early morng appointments
- LA-safe

- Orofacial infections treated immediately by antibiotics, appropriate incisions and drainage if needed

7. cherubism

- Definition
- Etiology
- Clinical features
- Radiographic features
 - Management

8. pagets disease

- Bone pain, deformities, fractures
- Pelvic, leg bones, skull, lower spine -affected
- Mgt

9. atypical odontalgia

- Chronic pain in tooth
- Continuous, burning, aching
- Mgt-antidepressants

10. oral cancer

- TNM staging
- Clinical features

- investigation
- mgt

11.oral manifestations of HIV

- group 1-lesions strongly associated with HIV
- grp 2 lesions less commonly associated with HIV
- grp 3 -lesions seen HIV

12.causes of light radiograph

- developing time too short
- low temperature of developer
- contaminated developer
- excessive fixation

13.automatic processor

- automates all the film processing steps
- can be used with day light loader
- advantages
- disadvantages

14.collimators

- lead metallic barrier with window
- funct-reduce film fogging,improve film contrast

- dis advg-increased pt exposure
- filters-removal of low energy x ray
- decreased pt exposure
- types-inherent,external,total filtration

15.bremstrahlung radiation

- breaking radiation
- sudden stoppage of electrons at the target
- 2 ways of production-direct hit,near miss

16.EM radiation

- Types-micro wave,infrared,visiblelight,uvlight,x-ray,gamma rays
- Teories-wave,quantum
- Properties-no mass,electric charge ,alltravel within a wave motion, $E=h\nu$,inverse square law

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Essays:

(2x10=20)

1. Classify Fibro osseous lesions. Describe etiology, clinical features, diagnosis and management of fibrous dysplasia
2. Describe in detail the production of x rays with diagram. Add a note on properties of x rays.

Short Notes:

(4x5=20)

3. Trigeminal neuralgia
4. DD of endogenous pigmentation
5. Effect of radiation on oral cavity, salivary gland, teeth, muscles
6. Dosimetry x *Acute Radiation Syndrome*

Answer Briefly:

(10x3=30)

7. Cherubism
8. Melanoma
9. Paget's disease
10. Burning mouth syndrome
11. Burtonian line/Plumbism
12. Periapical Cementosseous dysplasia(PCOD)
13. Filters and collimators *~ Intensity Screen*
14. Grids
15. Osteoradionecrosis
16. Brehmstrahlung radiation

35
15
8

FINAL YEAR PART 1 FIRST INTERNAL EXAMINATION

ORAL MEDICINE AND RADIOLOGY

ANSWER KEY (2016 SCHEME)

1. FIBRO OSSEOUS LESIONS

- Classification:

Fibrous dysplasia – Monostotic, Polyostotic, Craniofacial

Osseous dysplasia – Periapical, Focal, Florid

Ossifying Fibroma – Juvenile trabecular, Juvenile psammomatoid

Fibrous dysplasia

- Definition
- Etiology: Gene mutation encoding for sub unit of stimulatory G protein
Increased cAMP protein production
- Clinical features: Sites of involvement
 - Jaw involvement
 - Involvement of orbital and periorbital bones
 - Involvement of sphenoid and temporal bones
- Diagnosis: Biochemical investigations – Alkaline phosphatase, urinary hydroxyproline
 - Histopathology - Chinese letter pattern
 - Radiological – Different phases appearance: Radiolucent, mixed, Radiopaque stage
- Management: Surgical treatment
 - Pharmacological – Bisphosphonates, Calcitonin

2. PRODUCTION OF X RAYS

- What is an X ray
- Mechanism of production of X rays.

PROPERTIES OF X RAYS

- Physical properties
- Chemical properties
- Biological properties
- Physiochemical properties

3. TRIGEMINAL NEURALGIA

- Definition
- Etiology: Intracranial and extracranial causes
- Types: Pre trigeminal neuralgia, Typical, Atypical, Failed
- Clinical features: Pain manifestation
 - Other features – paroxysms, frozen face, clutches hands

- Trigger zones
- Sweets criteria for TN
- Differential diagnosis: Facial pain, migraine, odontogenic pain, post herpetic neuralgia
- Treatment: Pharmacological – Carbamazepine, Oxycarbazepine, Gabapentin, Baclofen
- Surgical therapy

4. D/D OF ENDOGENOUS PIGMENTATION

- Definition
- Endogenous pigmented lesions: Brown melanotic lesions – nevus, melanoma, smokers melanosis
- Brown haem lesions – Ecchymosis, petechiae, haemochromatosis
- Bluish purple lesions – Varix, haemangioma, AV malformations
- Clinical feature and differentiating factor

5. EFFECTS OF RADIATION

Oral cavity: Radiation mucositis – Definition
Clinical feature
Management

Salivary glands: Xerostomia – Definition
Mechanism
Clinical feature
Management

Teeth: Effect on tooth development
Radiation caries – Definition and mechanism
Types
Treatment

Muscles: Trismus – Definition and mechanism
Clinical features
Recovery and treatment

6. DOSIMETRY

- Determining the quantity of radiation exposure or dose
- Dose of different radiographs: Intra oral film, full mouth x ray, panoramic techniques, lateral ceph, cbct

7. CHERUBISM

- Benign dysplastic bone disease
- Clinical features: Affected age groups
Classic presentation – cherubic facies, eye to heaven appearance
Intra oral manifestations
- Radiographic features: Bilateral, multilocular, multicystic, expansile lesion

- Syndromes associated: Noonam, Ramon syndrome
- Differential diagnosis: clinically and radiographically
- Treatment

8. MELANOMA

- Malignant neoplasm
- Etiology: Sun exposure, artificial uv source, pre existing disease, genetics
- Clinical features: growth pattern, colour of pigmentation, presence of nodules/macules
- Oral manifestation: age, sex, site, appearance
- Diagnosis: ABCDE rule
 - Ugly duckling sign
 - Clark system and Breslow depth
- Treatment: surgical excision

9. PAGET'S DISEASE

- Bone disease characterized by abnormal resorption and bone deposition
- Clinical features: Age group, appearance of bone, Simian stance, bone pain, leontiasis ossea
- Radiographic features:
 - Stages – Radiolucent resorptive stage
 - Ground glass appearing stage
 - Radiopaque stage: cotton wool appearance
 - Black beard / Lincoln's sign
 - Osteoporosis circumscripta
 - Generalised absence of lamina dura
 - Hypercementosis
 - Tom O' Shanter appearance
- Treatment: calcitonin, sodium etidronate

10. BURNING MOUTH SYNDROME

- Definition
- Classification
- Contributing factors: local and systemic
- Clinical aspect: Age, sex, site
- Treatment: causative therapy
 - Pharmacological treatment

11. PLUMBISM

- Pigmentation due to lead intoxication
- Mechanism: production of lead sulphide
- Oral manifestation: Burtonian line
 - Ulcerative stomatitis

Tongue tremors

Excess salivation, metallic taste

- Treatment: chelating agents – EDTA, dimercaprol

12. PERIAPICAL CEMENTOSSEOUS DYSPLASIA

- Replacement of normal bone by tissue
- Characterised by focal involvement
- Features: age, gender, site, clinical characteristics
- Radiographic features: 3 stages
Loss of lamina dura

13. FILTERS

- Removal of low energy x ray
- Decreased patient exposure
- No loss of radiographic information
- Types: Inherent, External, Total filtration

COLLIMATORS

- Lead metallic barrier with window
- Functions: Control of size and shape of x ray beam
Better image quality
- Types: Round, tubular, rectangular, slit

14. GRIDS

- Reduction of scattered radiation
- Composition: Radiopaque and radiolucent strips
- Advantages: Reduce film fogging, improve film contrast, calculation of bone height
- Disadvantages: Increased patient exposure

15. OSTEORADIONECROSIS

- Radiation induced bone necrosis
- Mechanism: Marx's theory, radiation induced fibrosis
- Clinical features
- Treatment: preventive and therapeutic management

16. BREHMSTRALUNG RADIATION

- Breaking radiation
- Sudden stoppage of electrons at the target
- 2 ways of production: Direct hit
Near miss

ST.GREGORIOS DENTAL COLLEGE,CHELAD
II INTERNAL EXAMINATION SUPPLEMENTARY BATCH

ORAL MEDICINE AND RADIOLOGY

TIME:3 HOURS

MAX MARKS:70

LONG ESSAYS

(10X2=20MARKS)

1. CLASSIFY VESICULOBULLOUS LESIONS DESCRIBE IN DETAIL ETIOLOGY,CLINICAL FEATURES,DIAGNOSIS AND MANAGEMENT OF HERPES ZOSTER.WRITE A NOTE ON RAMSAY HUNT SYNDROME. (2+6+2)
2. DESCRIBE THE PRINCIPLES OF OPG. DESCRIBE INDICATIONS, USES, ADVANTAGES AND DISADVANTAGES OF OPG. (6+4)

SHORTESSAYS

(5X4=20MARKS)

- 3.RHEUMATOID ARTHRITIS
- 4.IDEAL RADIOGRAPH
- 5.RADIATION PROTECTION FOR PATIENT,OPERATOR AND ENVIRONMENT
- 6.DENTAL CONSIDERATION OF RHYPERTENSIVE AND DIABETIC PATIENT

SHORTNOTES

(3X10=30 MARKS)

- 7.LAMINA DURA
- 8.CAUSES FOR LIGHT RADIOGRAPH
- 9.SUBLUXATION
- 10.PEMPHIGUS VULGARIS
- 11.MEDICAL MANAGEMENT OF ASTHMATIC PATIENT
- 12.STEVEN JHONSON'SSYNDROME
- 13.FAULTS DUE TO IMPROPER ANGULATION
- 14.TLD BADGE
- 15.MEDICAL MANAGEMENT OF RENAL PATIENT
- 16.COIN PENNY TEST

2018 ADDITIONAL BATCH 2ND INTERNAL EXAMINATION

DEPARTMENT OF ORAL MEDICINE AND RADIOLOGY

ESSAY

1. CLASSIFY VESICULOBULLOUS LESION. DESCRIBE IN DETAIL ETIOLOGY CLINICAL FEATURES DIAGNOSIS AND MANAGEMENT OF HERPES ZOSTER.

Classification

Classification 1

- hereditary white lesions
- developmental white lesion
- Congenital white lesion
- Inflammatory white lesion
- Infectious white and red lesion

Classification 2

- Normal variants
- Nonkeratotic white lesion
- Candidiasis
- Keratotic lesions with no malignant potential
- Potentially malignant lesion
- Herpes Zoster

transmitted by droplets infection by saliva or direct contact like kissing.
The incubation period appears to range from 2 to 20 days

ETIOLOGY

- Following infection and local replication at mucosal surfaces, HSV-1 enters sensory nerve endings then transported to the nerve ganglia

- The virus reaches nerve ganglia, and remains latent there until reactivated and young adults.

Clinical Features

- Age: It affects children mucosa,
- Presence of prodromal features fever, irritability, headache, pain upon swallowing, regional lymphadenopathy
- Then the mouth becomes painful and the gingiva becomes inflamed
- Formation of multiple vesicles, which are clustered together
- Vesicles ruptured to form shallow ulcers surrounded by an erythematous halo
- They heal spontaneously within 7-14 days and leave no scar.

Investigations

Diagnosis can be done by both clinically and by laboratory procedures.

1. Cytosmear/ Exfoliative cytology
2. Isolation and Tissue culture
3. Detection of viral DNA

Treatment

1. To relieve pain
 - Dyclomine hydrochloride 0.5%
 - Diphenhydramine hydrochloride 5 mg/ mL, rinse 3-4 times
 - NSAIDS
2. To maintain proper fluid balance
 - Fluid replacement

3. Mild-to-moderate cases

Topical drugs with antiviral drugs like Acyclovir - 5% cream, to be applied 3-4 times/day for 7 days

4. Severe cases to prevent further re-infection

Acyclovir - 200-400 mg five times a day for 7 days

Valacyclovir - 1 g twice a day for 7 days

Famciclovir - 500 mg three times daily for

Foscarnet - 3% foscarnet cream

2. DESCRIBE THE PRINCIPLES OF OPG. DESCRIBE INDICATIONS, USES, ADVANTAGES AND DISADVANTAGE OF OPG.

PRINCIPLE

- It is based on the principle of tomography.

There are two movement, which occur together:

- First the opposite movement of X-ray machine and film holder, which are mechanically interconnected.
- Movement of film in its own axis, which will be in the opposite direction to film holder.
- Rotation is around 180°

Advantages

Disadvantages

Indications

- a) Pathologies of tooth
- b) Pathologies of alveolar bone
- c) Pathologies of surrounding bone
- d) Pathologies of condyle/TMJ
- e) Pathologies of maxillary sinus

f) Styloid process

Short essays

3. RHEUMATOID ARTHRITIS

- Rheumatoid arthritis is an autoimmune disease that results in a chronic, systemic inflammatory disorder that may affect many tissues and organs, but
- principally attacks flexible (synovial) joints.
- Is a progressive disorder that involves peripheral joints first in symmetrical pattern and then lastly involves TMJ.

Clinical Features

- ✓ Peak age incidence reported in between 35 and 45 years.
- ✓ More common in females.
- ✓ The incidence increases with increasing age.
- ✓ The small joints of the hands, wrists, knee and feet are affected in a bilateral symmetrical manner.
- ✓ Felty syndrome.
- TMJ involvement:
 - ✓ Percentage of RA patients with TMJ involvement ranges from 40 to 80%.
 - ✓ The TMJ involvement varies and is usually bilateral and symmetrical.

The characteristics feature are:

- Flatness of face on affected TMJ area
- Pain, tenderness
- Swelling
- Stiffness on opening
- Limited range of movement
- Crepitus
- An anterior open bite and receded chin

Management

- pain relief (analgesics), reduction of inflammation (non-steroidal anti-inflammatory drugs, gold salts, corticosteroids, etc) and prevention of muscle and joint dysfunction
- Joint replacement surgery may be necessary in some cases.

4) Ideal radiograph

An ideal radiograph is one which has desired density and overall blackness and which shows the part completely without distortion with maximum details and has the right amount of contrast to make the details fully apparent.

Ideal Properties

- A. Proper density, contrast.
- B. No magnification and distortion-
- C. Maximum details and sharpness.
- D. Proper resolution -

5. PROTECTION FOR THE PATIENT

It is easy to learn the notes in the given sequence as the same sequence is used to take radiographs.

- a) Patient selection
- b) Use of proper equipment
- 1. Proper Imaging Technique
- 2. Proper Processing
- 3. Proper Interpretation of Film

PROTECTION FOR THE OPERATOR

PROTECTION FOR THE ENVIRONMENT

6. DENTAL CONSIDERATION FOR HYPERTENSIVE AND DIABETIC PATIENT

- Consultation with the patient's physician if patient has systemic complications of diabetes such as heart or renal disease.
- The patient has difficult to control diabetes or is under high insulin dosage
- The patient has an acute oral infection
- Blood sugar level (Glucometer) should be checked and controlled.
- Early morning appointments are preferred
- LA can usually be safely used.

- Oral manifestations: have slightly more periodontal diseases, dry mouth, and glossitis should be checked thoroughly and treated.
- Orofacial infections should be treated immediately by antibiotics and appropriate incision and drainage if needed.

SHORT NOTES

7. LAMINA DURA

- Radiological term for the lining of the alveolar bone proper that surrounds each tooth during development.
- Lamina = layer and dura = tough
- Seen as thin radiopaque layer
- Surrounds outside the radiolucent periodontal space
- Peripheral egg shell effect
- Wider and denser in roots of teeth
- Thinner and less dense around teeth
- Double lamina dura
- Loss of lamina dura seen in

8. CAUSES OF LIGHT RADIOGRAPH

- Exposure errors:-
 - Less exposure time, kVp, Ma
 - Increase in film to source distance distance
- Processing errors:-
 - Developing time is too short
 - Low temperature of developer
 - Contaminated developer
 - Excessive fixation

9. SUBLUXATION

- Refers to partial or incomplete dislocation actually a form of hypermobility
- c/f; normal mouth opening
painless
- Investigation
- Management-
The conservative method
Surgical intervention

10. PEMPHIGUS VULGARIS

- Most common form
- Etiological factors- drugs, viruses, other autoimmune disease
- Pathogenesis
- c/f; presence of bulla
nikolskys sign
- age
- site
- clinically
- investigation; tzanck test
- Treatment

11. MEDICAL MANAGEMENT OF ASTHMATIC PATIENT

- Avoid anxiety
- Bring their regular medication
- Schedule appointments for late morning
- Avoid inhalational anaesthetics
- Avoid use of LA containing vasoconstrictor

12 STEVEN JOHNSON SYNDROME

- Etiology- type 4 hypersensitivity
- Involves multiple mucous membrane
- Presents with flu like symptoms
- Oral manifestations
- Mucosal vesicles and bullae occur and rupture forms scar
- Erosion of pharynx
- Ocular and genital changes

13. FAULTS DUE TO IMPROPER ANGULATIONS

- Foreshortening
- Elongation
- Cone cut
- Overlapping

14. TLD BADGE

- TLD is a small device used to measure radiation exposure by measuring amount of visible light emitted from crystal
- Works on the principle thermoluminescence
- parts include TLD card holder cassette and TLD card

15. MEDICAL MANAGEMENT OF RENAL PATIENT

- Dental procedures should be scheduled on nondialysis day
- Monitor BP
- BP should not be measured on arm where vascular access was done for dialysis
- Hemostatic investigations should be done

16. COIN PENNY TEST

- To check safe light conditioning
- Procedure
- Diagram
- If coin visible on resultant film room is not light safe

ST.GREGORIOS DENTAL COLLEGE, CHELAD

Q P Code:411002

Reg. No.:

III Internal Final Year Part I Internal BDS Degree Supplementary Examinations, MAY 2023.
ORAL MEDICINE AND RADIOLOGY(2016 Scheme)

Time: 3 hrs

Max marks: 70

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers
- Indicate the question number correctly for the answer in the margin space • Answer all parts of a single question together • Leave sufficient space between answers • Draw Diagrams wherever necessary.

	<u>LONG ESSAY(10 X 2=20 MARKS)</u>	CO	K
1	CLASSIFY RED AND WHITE LESIONS.DESCRIBE IN DETAIL DEFINITION,ETIOLOGY,CLINICAL FEATURES,DIAGNOSIS AND MANAGEMENT OF OSMF.	CO 1, CO 4	K 6
2	DESCRIBE LATENT IMAGE FORMATION.DISCUSD IN DETAIL PROCESSING.	CO 2,CO 5	K 1,K2,K 5
	<u>SHORT ESSAYS (5X4=20 MARKS)</u>		
3	DD OF MULTILOCLAR RADIOLUCENCIES	CO 8	K 1,K 5
4	LICHEN PLANUS	CO 7	K 1
5	SIALOGRAPHY	CO 1	K 1,K5
6	DD OF SINGLE ULCERS	CO 2	K 1,K 5
	<u>SHORT NOTES (3X10=30 MARKS)</u>		
7	ADVANTAGES OF PARELLING TECHNIQUE	CO 2	K 1
8	DD OF PERICORONAL RADIOLUCENCIES	CO 2	K 5
9	APHTHOUS ULCER	CO 2	K 1
10	ORAL THRUSH	CO 2	K 1
11	AUTOMATIC PROCESSOR	CO 2	K 1
12	ARTHROGRAPHY	CO 8	K 1
13	BECHET'S SYNDROME	CO 7	K 1
14	ERYTHROPLAKIA	CO 8	K 1
15	ATROPHIC CANDIDIASIS	CO 8	K 1
16	MUCOCOELE	CO 8	K 1

2018 Supplementary batch
III Internal examination
Oral medicine and Radiology
Answer key

1. Classify red and white lesions. Describe in detail definition, aetiology, clinical features, diagnosis and management of OSMF.

Ans.

Classification – Hereditary white lesions, Developmental white lesion, Congenital white lesion, Reactive/ inflammatory white lesion, Infectious white and red lesion, Miscellaneous, Normal variants, non keratotic white lesion, candidiasis, Keratotic lesions with no malignant potential, Differential malignant lesions and conditions with malignant potential

Definition- any part of oral cavity even pharynx, vesicle formation, juxta-epithelial inflammatory reaction, fibrous elastic change of lamina propria, epithelial atrophy, stiffness of mucosa, trismus, inability to eat

Etiology- Local factors: areca nut, capsaicin

Systemic factors: nutritional deficient, autoimmunity, genetic susceptibility

Clinical features- Age, Sex, Prodromal symptoms, Advanced OSF: blanching & fibrotic bands, Classification: group I, group II, group III, group IVa, group IVb.

Diagnosis- Haematological, Serological, Cytogenetics, Histopathological, Immunohistochemical and differential diagnosis.

Management- group I: quit habit, pharmacotherapy, antioxidants

group II: group I + intralesional injection, physiotherapy

group III: group I + surgical treatment

2. Describe latent image formation. Discuss in detail processing.

Ans.

Definition and formation diagram.

Steps- silver halide in lattice form, crystals with interstitial sites, interactions with bromide, removal of electron and shift to sensitive site, attraction of opposite charged site, formation of neutral metallic silver.

Composition- Developer: initiator, activator, preservative, restrainer

Fixer: clearing agent, acidifier, preservative, hardener

Water

Processing method- Manual processing: visual, time temperature, self developing, monobath, rapid processing, with daylight loader, without daylight loader.

Automated processing: with and without daylight loader

3. DD of multilocular radiolucencies.

Ans. Definition

Lesions presenting multilocular radiolucencies -ameloblastoma, odontogenic myxoma, OKC, central giant cell granuloma, aneurysmal bone cyst, central hemangioma, hyperparathyroidism.

Definition and clinical features of lesions

Radiographic appearance of lesions :

- ameloblastoma – honeycomb/soapbubble
- odontogenic myxoma – tennis racket
- aneurysmal bone cyst – honeycomb/soapbubble
- central hemangioma – soap bubble
- hyperparathyroidism – ground glass appearance

4. Lichen planus

Ans. Definition of lichen planus

Aetiologic factors – immunologic reaction, trauma, diabetes & hypertension, genetics, hepatitis C infection

Pathogenesis

Classification – reticular, papular, plaque, atrophic, erosive, bullous

Clinical features – site, 6P, appearance of lesion (wickham's striae),

Syndromes associated- Grinspan syndrome, overlap syndrome etc.

Investigations – chairside investigations, laboratory based investigations

Differential diagnosis

Treatment

5. Sialography

Ans. Definition

Indications

Contraindications

Disadvantages

Sialographic contrast media

Phases of sialography – preoperative ,filling & emptying phase

Sialographic appearance of salivary gland disorders – normal parotid gland
:tree in winter appearance, normal submandibular gland :bush in winter
appearance, normal parotid and submandibular glands :leafless tree appearance,
sialodochitis :sausage link appearance, Sjogren's syndrome
:cherryblossom/branchless fruit laden tree, intrinsic tumours :ball in hand

6. DD of single ulcer

Ans. Definition

Single ulcers – recurrent aphthous stomatitis, traumatic ulcer, deep fungal infection, tuberculous ulcer, chancre of syphilis, necrotizing sialometaplasia, malignant ulcer

- **Etiology**
- **Pathogenesis**
- **Clinical features**
- **Investigation**
- **Management**

7. DD of Pericoronal Radiolucency

Ans. Dentigerous cyst, Adenomatoid odontogenic tumour, Calcified epithelial odontogenic tumour, unicystic ameloblastoma.

- **Clinical features**
- **Radiographic features-** dentigerous cyst
:central,lateral,circumferential, AOT- radioopaque foci scattered ,
CEOT- snow driven appearance ,unicystic ameloblastoma: similar
to dentigerous cyst with extensive involvement of ascending
ramus.
- **Diagram**

8. Aphthous ulcer

Ans:

- **Clinical features:** females, 2nd decade, tingling and burning,
- **Treatment:** type A, type B and type C

9. Oral thrush

Ans:

- **Etiology:** local irritants, denture, immunosuppression, broad-spectrum antibiotic therapy
- **Pathogenesis**
- **Classification:** primary and secondary
- **Clinical features** cotton cheese or curdled milk appearance, burning sensation and foul taste

10. Automatic Processor

Ans:

- **Procedure** of processor
- **Advantages:** rapidity, less floor space, no wet films, density and contrast is consistent
- **Disadvantages:** equipment may break down, expensive

11. Arthrography

Ans:

- **Procedure:** catheter into femoral artery and contrast medium is injected
- **Indications:** haemangiomas, av malformations

12. Bechet's Syndrome

Ans:

- Pathergy test positive
- **Ocular oral disease:** papilledema, corneal ulceration, conjunctivitis

13. Erythroplakia

Ans:

- **Etiopathogenesis:** Tobacco and Alcohol
- **Classification:** homogenous, patches of leukoplakia, granular erythroplakia
- **Clinical features:** soft to palpation, asymptomatic, red velvety texture
- **Investigations:** conventional and advanced investigations
- **Treatment:** surgical excision, regular follow up

14. Atrophic Candidiasis

Ans:

- **Acute atrophic candidiasis:** red lesions, burning sensation
- **Chronic atrophic candidiasis:** denture stomatitis, angular cheilitis, median rhomboid glossitis
- **Treatment:** strict denture hygiene

15. Mucocele

Ans:

- **Types:** extravasation and retention
- **Etiopathogenesis:** trauma, lip biting, obstruction of duct
- **Clinical features:** dome shaped, lower lip, soft inconsistency, non tender
- **Treatment:** surgical removal, cryosurgery, marsupialization.

16. Bisecting Angle Technique

Ans:

- **Principle:** Cieszyski's rule or rule of isometry
- **Steps in taking periapical radiograph**
- **Advantages:** simple and quick, comfortable, less overlap
- **Disadvantages:** magnification, cone cut, distortion. no reproducible views.