Viva in

Oral Surgery

For Dental Students

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Message

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Foreword

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Viva in Oral Surgery for Dental Students

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Dedicated to

My beloved parents,
family members and Almighty

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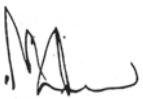
26th November, 2011

Message

I am happy to know that Dr V Ramkumar, Associate Professor in Oral and Maxillofacial Surgery is publishing a book titled *Viva in Oral Surgery for Dental Students*.

I hope the book contains valuable information which will be useful to the students' community. I wish to congratulate Dr V Ramkumar and the staff members of the Division of Oral and Maxillofacial Surgery for their hard work, and the students for all success.



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Foreword

Viva in Oral Surgery for Dental Students is indeed a laudable effort by Dr V Ramkumar, Associate Professor of Oral and Maxillofacial Surgery.

The book covers the most important areas of the specialty. The pattern of presentation is simple and concise. I am sure, it will be of immense value to the graduate students preparing for the examinations in the subject of Oral and Maxillofacial Surgery, Oral Medicine and Radiology, and Oral and Maxillofacial Pathology.

Ravi David Austin
Dean
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Preface

The field of maxillofacial surgery has been ever-changing since past seventy-five years. The newer advances in the field of reconstruction, repair , reanimation, anesthesia, pain has made it a branch of interest not only for the people belonging to the fraternity but even to other specialties.

In this new era of tough competition, I felt that undergraduate students should do something related to my field reading under night lamp for their life-support. I felt that this book is a bread and butter in the field of oral and maxillofacial surgery.

This is a comprehensive book comprising of about 600 viva questions shuffled from all topics of oral surgery. I have tried to include all possible questions in the recent advances in one or other form, that can be asked in the forthcoming undergraduate viva examinations in their syllabus.

The book also tends to need postgraduate students in giving them an eagle's eye view of the subject which can aid them in viva voce. It is a matter of pride that the book has been undertaken for publishing by M/s Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, India whose name in publishing parallels minimal authenticity.

I sincerely thank my department colleagues for their timely help and support during the writing of the book.

I am also indebted for life to my family for their belief in me and their unconditional support to guide me in this publication.

I extend my heartful greetings and gratitude to the Division of Oral and Maxillofacial Surgery, Rajah Muthiah Dental College and Hospital, Annamalai University for the kindness and cooperation. Last but not least, I thank Almighty for the blessings.

V Ramkumar

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Contents

1 Introduction to Oral Surgery

1. **What is oral and maxillo facial surgery ?**

   Oral and maxillo facial surgery is a branch in dentistry that deals with the art of diagnosis and treatment of various diseases, pathological defects involving the Oro facial region.

2. **Define Exodontia or tooth extraction.**

   According to Geoffrey L Howe, tooth extraction is the painless removal of the whole tooth or tooth root with minimal trauma to the investing tissues, so that the wound heals uneventfully and no postoperative prosthetic problem is created.

3. **Define scope of oral surgery.**

   The scope of oral surgery ranges from dental extraction to major oral and maxillo facial surgery eventually there may be two types of oral surgeons, practicing minor and major oral surgery respectively each acceptable in one owns national and regional situation by virtue of the training or personal relationship with the surgical colleague.

CASE HISTORY

1. The complaint
2. History of present illness:
3. Personal history:
   a. School life
   b. Occupation
   c. Recreation
   d. Habituation

e. Environment
f. Meals
g. Holidays
h. Has he lived abroad
i. Worries

4. Previous diseases
5. Family history

PAIN

1. Its character.
2. The severity.
3. Date of onset.
4. Is the pain continuous or have there been remissions?
5. Is it increasing or decreasing in severity?
6. Where is the point of maximum intensity?
7. Area to which pain spreads.
8. Area to which the pain radiates.
9. What makes the pain worse?
10. Are there other symptoms?

THE EXAMINATION OF A LUMP

1. The exact anatomical situation of the Mass.
2. Are the associated lymph nodes enlarged.
3. Is the swelling single or multiple?
4. The shape.
5. The size.
6. The surface of the Mass.
7. The Edge.
8. The consistency.
9. Is the lump tender or warm on palpation?
10. Is the lump attached to the skin?
11. Care must be taken to ascertain whether the lump arises from deeper structures.
12. Is fluctuation present?
13. Are there signs of inflammation present?

14. Transillumination (Positive in cystic hygroma, naso labial cysts).
15. Is there an impulse on coughing and crying?
16. Does the lump pulsate?
17. Any mass may produce pressure effects on.
18. The colour of the lump.
19. The general condition of the patient.

EXAMINATION OF AN ULCER

1. The situation of the ulcer.
2. Is the ulcer single or multiple?
3. Note the size of the ulcer.
4. Examine the shape of the ulcer—Ulcers may be round, oval, crescentic, serpiginous, irregular, punched out, etc.
5. Note the base of the ulcer.
6. The floor of the ulcer may be covered by:
   a. Granulations. These may be red, pale or fabby that may or may not bleed
   b. The floor may be smooth.
   c. It may be covered with slough, membrane, scab, etc.
   d. The floor may be adherent to soft parts or bone.
   e. The floor may be fungating as seen in some clinical varieties of malignant disease.
7. The edge of the ulcer may be:
   a. Undermined (as seen in tubercular ulcers)
   b. Punched out (as found in gummatous ulcers)
   c. Rolled out (as characteristically occurs in rodent ulcers)
   d. Rolled, raised and everted (as characterized by malignant ulcers)
8. The condition of the parts surrounding the ulcers must be examined.
9. If there is a discharge from the ulcer, its colour and smell should be noted and bacteriological smear taken for culture.
10. Is the ulcer painful.
11. The general conditioning the patient must always be considered.

2 Diagnostic Aids

1. **Classify diagnostic aids.**
   1. Clinical diagnostic aids.
   2. Radiological diagnostic aids.
   3. Biochemical diagnostic aids.
   4. Histopathological diagnostic aids.
2. **Mention a few examples of clinical diagnostic aids.**
   1. History taking.
   2. Medical examination.
   3. Clinical examination.
      a. Extra oral
      b. Intra oral
3. **Classify radiographic examination.**
   1. Intra oral radiographic examination.
   2. Extra oral radiographic examination.
4. **Mention a few common examples of intra oral radiographic techniques.**
   1. IOPA.
   2. Occlusal view of maxilla.
   3. Occlusal view of mandible.
   4. Bite wing radiograph.
5. **Classify extra oral radiograph.**
   1. Ortho pantamogram.
   2. Lateral oblique view of mandible (postero anterior view).
   3. PA view of mandible.
   4. Waters view.
   5. Transorbital view.
   6. Transcranial view.

7. Lateral skullview.
8. Submento vertex view.

6. Enumerate different types of specialized imaging techniques.

1. Computed tomography.
2. Ultrasonography.
3. Magnetic resonance imaging.
4. Radionuclide imaging.
5. Sialography.
6. Arthrography.
7. Angiography.
8. Lymphoscintography.

7. Define ECG.

Electrocardiogram is a device which records the change in the electrical potential associated with the contraction of the heart.

8. Define EEG.

Electro encephalogram is a device which records the changes in the electrical potential associated with the contraction of the brain.

9. Classify hematological investigations.

1. Hemoglobin- Hb, Male 16 g/dl, Female 14g/dl
3. Red blood cell count – Men 4.5 - 6.2 millions U/L
   – Women 4 - 5.5 millions U/L
4. White blood cell count – 4000 - 11,000 cells cc
5. Platelet cell count – 2,00,000 - 5,00,000 cells/ cubic mm

10. Classify laboratory investigations of bleeding and clotting disorders.

1. *Bleeding time* - 3 to 5 minutes Dukes method.
2. *Clotting time* - 4 to 10 minutes - Lee white method.
3. *Prothrombin time* - 12-14 seconds extrinsic methods of coagulation.
4. *Partial thromboplastin time* (PTT) - 25 to 45 seconds intrinsic method of coagulation.
5. *Thromboplastin generation time* - It is used to differentiate specific factor deficiency.
6. *Erythrocyte sedimentation rate* (ESR) - It is a non specific test for chronic infection and inflammatory process.

11. Mention a few renal function tests.

1. Blood urea nitrogen/normal level 10-20 mg /100 ml
2. Serum creatinine/normal level 0.7-1.8 mg /100 ml.

12. Classify various serum electrolytes.

1. Normal sodium level 135-145 meq/l
2. Normal potassium level 3.2-5.5 meq/l.
3. Normal chloride level 95 - 105 meq/l.

13. What are the various types of liver functions test?

1. Alkaline phosphatase - 60-170 IU/L (Adults)
2. Normal serum albumin/bilirubin - 38-50 g/dl
3. Serum Glutamic oxalacetic transaminase [SGOT] - 10-40 IU/L
4. Serum Glutamic pyruvic transaminase [SGPT] - 9-32 IU/L
5. Serum calcium - 8.5-10.3 mg/dl
6. Serum phosphorus - 3-4.5 mg/dl
7. Blood glucose - 70-110 mg/dl (Fasting)
   Post prandial 90-130 mg/dl

14. Mention a few Antigen, Antibody reaction. (Immunological test).

1. ELISA for HIV (Enzyme linked immunosorbent assay).
2. Complement fixation test (CFT).
3. Australian antigen test.

15. What are the different types of histopathological examination?

1. Exfoliative cytology.
2. FNAC - fine needle aspiration cytology.
3. Biopsy.

16. Define - Biopsy.

Biopsy is a specimen taken from living tissue for histopathological examination.

17. Classify different types of biopsy.

1. Punch biopsy.
2. Excisional biopsy.
3. Incisional biopsy.
4. Brush Biopsy.

18. Classify newer diagnostic aids.

1. Computed tomography (C.T.)
   - Axial view.
   - Coronal.
2. Magnetic resonance imaging (MRI).
3. Positron emission tomography (PET)
4. Single photon emission computed tomography (SPECT).
5. Radio nuclide imaging.
6. Steriolithography.
7. Endoscopy.
8. Ultrasonography.
9. Digital radiography.

19. Define Aspiration.

It is a process by which *removal of suction of air* or fluid from a body cavity or cystic swellings where unusual collections have accumulated.

20. Define subtraction angiography.

Digital subtraction angiography is a type of fluoroscopy technique used in interventional radiology to clearly visualize blood vessels in a bony or dense soft tissue environment.

3 Medical Emergencies in Dental Office

1. **Define fever or pyrexia.**

   It is defined as gradual raise in the body temperature above the normal temperature 98.6°F [37°C].

2. **Define angina pectoris.**

   It is the name given to paroxysms of severe chest pain, they are caused by higher myocardial oxygen demands. The usual underlying cause is coronary atherosclerotic plaques that ruptures.

   They are classified into:
   - Stable angina.
   - Unstable angina.
   - Prinzmetal angina.

3. **Define myocardial infarction. (Coronary thrombosis or heart attack).**

   Myocardial infarction is the most severe and lethal form of coronary heart disease and almost invariably caused by artherosclerosis.

4. **Define Hypertension.**

   It is generally defined as persistent raised blood pressure resulting from raised peripheral arteriolar resistance of systolic pressure over 140 mm hg and diastolic pressure over 90 mm hg is regarded as hypertension.

5. **Define diabetes mellitus.**

   It is a disorder caused by an absolute or relative lack of insulin. There can be a low output of insulin from the pancreatic beta cells, or the peripheral tissues may resist insulin.

6. Define Epilepsy.

This is a symptom of brain disorder involves paroxysmal neuronal discharge sufficient to cause effects such as recurrent seizures with disturbances of loss of consciousness. They are classified intracranial, tonic clonic epilepsy, petitmal, grandmal epilepsy.

7. Define chronic obstructive pulmonary disease.

It is a chronic obstructive airway disease slowly progressive characterized by breathlessness and wheeze (airway obstruction) cough and sputum production. It is a combination of chronic bronchitis and emphysema.

8. Define postural hypotension (orthostatic hypotension).

Postural hypotension is defined as a disorder of the autonomic nervous system in which syncope occurs when the patient assumes an up right position.

9. Define Syncope.

Syncope is defined as transient loss of consciousness due to reduction in cerebral blood flow.

10. Define Asthma.

It is defined as paroxysmal disease of the respiratory organs, characterized by great difficulty of breathing, tightness across the breast, and a sense of impending suffocation, without fever or local inflammation.

It is also defined as chronic inflammatory disorder that is characterized by reversible obstruction of the airways.

11. Classify Asthma.

1. Extrinsic asthma.
2. Intrinsic asthma.
3. Mixed asthma (combination).
4. Status asthmaticus.

12. What is CPR ratio (Cardiopulmonary resuscitation) ?

- One rescuer – 30:2 (30 compression, 2 ventilation) – Adult
- Other rescuer – 15:2 (15 compression 2 ventilation) – Children

13. Define Hemorrhage.

Hemorrhage (hemorrhage) denotes the escape of blood from a blood vessel. The word hemorrhage is synonymous with bleeding.

14. Classify different types of hemorrhage.

A 1. Arterial
2. Venous
3. Capillary hemorrhage.

B
- Primary hemorrhage.
- Secondary hemorrhage.
- Reactionary hemorrhage (Occurs after the passage of few hours).

15. Define primary hemorrhage.

Primary hemorrhage occurs at the time of injury. It resolves by itself by means of haemostatic mechanism.

16. Define secondary hemorrhage.

Secondary hemorrhage occurs 24 hrs after the bleeding stops after several days, it may be due to dislodgement of the clot, infection, secondary to trauma and wound dehiscence.

17. List down various clotting factors.

- Factor I – Fibrinogen.
- Factor II – Prothrombin.
- Factor III – Tissue factor (Thromboplastin).
- Factor IV – Calcium.
- Factor V – Proacclerin, labile.
- Factor VI – No such factor.
- Factor VII – Proconvertin.
- Factor VIII – Anti hemophilic factor.
- Factor IX – Christmas factor.
- Factor X – Stuart power factor.
- Factor XI – Plasma Thromboplastin antecedent.
- Factor XII – Hageman factor.
- Factor XIII – Fibrin stabilizing factor.

18. Enumerate various methods to control bleeding?

1. Mechanical methods.
2. Thermal agents.

3. Chemical methods.
4. Ligation of major vessels.

19. Classify mechanical agents to control haemostasis?

1. Pressure.
2. Use of haemostatic agents.
3. Sutures for ligation
4. Embolization of the vessels.

20. Classify thermal agents?

1. Cautery.
2. Electro surgery.
3. Cryosurgery.
4. Argon beam coagulators.
5. Lasers.

21. Classify chemical methods?

I. Local agents

1. Astringent agents of styptics.
2. Bone wax.
3. Thrombin
4. Gel foam.
5. Oxygen.
6. Surgicel.
7. Fibrin glue.
8. Adrenaline.

22. Classify systemic agents?

A. Whole blood.
B. Platelet rich plasma.
C. Fresh frozen plasma.
D. Cryoprecipitate.
E. Adrenochromemonosemicarbazonetamsylate.

23. Define vitamin K dependent clotting factors?

Factor II, VII, IX, X.

24. Define INR (International Normalized Ratio)?

INR system is the generally recognized as the most current and acceptable method of laboratory measurement of oral

anticoagulation therapy. INR is expressed as a ratio of the patient prothrombin time.

- INR value for patients or oral anticoagulants
- Varies from 2.0 to 3.0.
- INR value for artificial mechanical heart value ins 3.0 to 4.5.
- INR value for P.T time is below 3.5, simple extraction can be done without altering oral anticoagulant.

25. Define shock.

Shock is defined as pathophysiologic condition clinically recognized as state of inadequate perfusion, due to inadequate blood flow, there is adequate removal of cellular waste products from tissue cells, which results in description of vital organ function.

26. Classify shock.

1. Hypovolaemic shock.
2. Cardiogenic shock.
3. Septic shock.
4. Neurogenic shock.

27. What type of disorder is Haemophilia.

Haemophilia is a coagulation disorder with prolonged clotting time. It is classified into Haemophilia A and Haemophilia B. It is a sex linked X-chromosome disorder with deficiency of factor VIII.

28. What is von Wille brand disease?

It has also been known as pseudo haemophilia and was first described in 1926. It is an autosomal dominant disease occurs as frequently in men or in women. It is due to increased bleeding time without normal combustion of capillaries, there is an associated deficiency of antihaemophilic factor VIII.

29. Elaborate various procedures in management of shock.

1. IV fluids (Ringer Lactate, Dextrose normal saline, Normal saline).
2. Plasma expanders (Dextran).
3. Blood transfusion

30. What are the various methods in management of medical emergencies in dental office?

1. Abdominal thrust.
2. Helmhich maneuvore.
3. Mouth to mouthbreathing.
4. External cardiac massage.

31. Define tracheotomy.

Tracheotomy is incision of the trachea through the skin of muscles of the neck for exploration and removal of foreign bodies, obtaining a biopsy specimen or removal of lesion.

32. Define tracheostomy.

It is the surgical creation of an opening into the trachea through the neck for insertion of tube to facilitate the passage or air into lungs for the evaluation of secretions.

33. Define cricothyriodectomy.

It is the surgical creation of opening into the larynx through cricothyroid membrane.

34. What is the composition of Bone Wax (Horsley's)?

Bees wax – 7 parts
Olive oil – 2 parts
Phenol – 1 part

4 Therapeutics in Oral Surgery

1. **Define an antibiotic.**

   Antibiotics are defined as substances produced by micro organisms that acts in minute concentrations to kill other organisms and to prevent them from multiplication without affecting the host.

2. **Define bacterostatic agent.**

   A bacterostatic agent is a drug that stops the bacteria from dividing but does not kill the bacteria.
   (e.g.) Erythromycin, sulpha group, tetracycline.

3. **Define bactericidal agent.**

   A bactericidal agent is a drug that kills the bacteria.
   (e.g.) Penicillin, cephalosporin, metronidazole.

4. **Define bacterimia.**

   The term refers to the presence of bacteria in the blood stream occurring in relation to any surgical dental procedure lasting for 30 to 45 min.

5. **Define septicemia.**

   The term refers to the presence of bacteria in the blood stream causing the symptoms of infection.

6. **Classify antibiotic therapy.**

   1. Curative.
   2. Prophylactic.

7. **Mechanism of action of antibiotic therapy.**

   1. Inhibition of cell wall synthesis.
   2. Inhibition of protein synthesis.
   3. Disrupting the cytoplasmic membrane of the microorganisms.

4. Inhibition of nucleus metabolism.
5. Inhibition of paraamino benzoic acid synthesis.

8. Classify antibiotics.

I. Sulfonamides PABA inhibitors (Para amino benzoic acid).
II. Immidazole derivative – metronidazole.
III. Penicillins.
1. Natural
   a. Acid labile – Benzyl penicillin.
   b. Acid resistant phenoxy methyl penicillin.
2. Semi synthetic.
3. Cephalosporins – Macrolide antibiotics.
4. Broad spectrum antibiotics – Tetracycline
5. Aminoglycocidal antibiotics – Gentamycin

9. Classify maxillo facial wound infection.

Class I – Clean surgery.
Class II – Clean and contaminated surgery.
Class III – Contaminated surgery.
Class IV – Infectious wound.

10. Define synergism.

It is defined as combination of drugs, which can be an effective form of therapy. It may also prevent the development of resistant strains.
(e.g.) Sulpha drugs, Penicillin and Gentamycin.

11. Classify prophylactic antibiotics for oral regimen.

Situation	*Antibiotics*	*Regimen*
Standard general prophylaxis	Amoxicillin	Adults 2 g children 50 mg/kg orally one hr
Cannot use oral medications before	Ampicillin	Adults 2.0 g IM / IV children 50 mg/kgIM / IV within 30 minutes procedure.
Allergic to penicillin	Clindamycin	Adult 500 mg children 20 mg/kg-orally.
Allergic to penicillin unable to take oral medication	Cephalexin	Adult 2g children 50 mg/kg
	Clindamycin	Adult 600 mg child 15 mg/1g IV one hour procedure
	Cephazolin	Adult 1g children 25 mg/kg IV within 30 min before procedure

12. Classify NSAIDS.

• Acetyl salicylic acid derivatives	Aspirin	50-150 mg orally
• Para amino phenol derivatives	Paracetamol	300-600 mg orally
• Pyrlazone derivatives	Phenylbutazone	200-400 mg orally
• Indole derivatives	Indomethacin	50-150 mg orally
• Phenyl acetic acid derivatives	Dicofenac	75-100 mg orally
• Propionic acid derivatives	Ibuprofen	200-400 mg orally
• Femanates derivatives	Mefanamic acid	500 mg orally
• Oxicams derivatives	Piroxicam	20-40 mg orally

13. Classify narcotic analgesics (Opioid analgesics).

1. Natural opium alkaloids	
a. Phenanthrene derivatives	Morphine Codeine
b. Benzylisoquimline derivatives	Papaverine Noscapine
2. Semisynthetic derivatives of opium alkaloids	Heroin Dihydromorphine
3. Synthetic substitutes of opium alkaloids	Pethidine Pentazocine Buprenorphine

14. Define rule of two (Corticosteroids).

The dose is doubled 2days before the day of surgery and 2days after surgery later gradually the dose is tapered during the following week.

15. Classify antifungal agents.

1. **Immidazole:** Clotrimazole, Econazole, Miconazole.
2. **Triazole:** Fluconazole and Itacanazole.

16. Describe various role of antibiotics in oral surgery.

1. Maxillo facial trauma.
2. Orthognathic surgery.
3. Prevent post operative surgical infections.
4. Infective endocarditis.
5. Surgical endodontics and periodontics.

17. Classify antidiabetic drugs.

1. Sulphonyl ureas (tolbutamide, chlorpropamide)
2. Biguanides (phentformin, metformin)

18. Classify different types of insulin.

No.	*Types of insulin*	*On set of action*	*Duration of action*
1.	Quick action (e.g.) insulin plain	1 hr	10 hrs
2.	Intermediate acting (e.g.) Insulin zinc suspension [lente insulin]	2 hrs	24 hrs
3.	Long acting protamine zinc insulin suspension	7 hrs	36 hrs

19. Classify hypertension.

1. Primary hypertension [anxiety, sodium intake]
2. Secondary hypertension [Adrenal tumor]
3. Malignant hypertension [Renal disorder]

It is also classified into:

I. Mild – Diastole between 90 to 100 mm Hg
II. Moderate – Diastole between 100 to 120 mm Hg
III. Severe – Diastole above 130 mm Hg.

20. Classify antihypertensive drugs.

1. Centrally acting (Methyl dopa)
2. Calcium channel blocker (Nifedipine).
3. β – blocker (Propranolol).
4. Rennin angiotensin converting enzyme inhibitor (Enalopril).

21. Classify anticoagulants.

1. Heparin.
2. Warfarrin (dicoumarol)

If can be also classified into invitro or invivo.

22. Define chemotherapeutic agent.

It is a drug which is used clinically to destroy or to suppress the multiplication and spread of neoplastic cells to the other parts of the body at the levels of treatment of malignancy.

23. Classify antineoplastic agents.

1. Alkylating agents
2. Antimetabolites.
3. Miscellaneous (Vincaalkaloids).
4. Hormones (adreno corticosteroids).

24. Classify different type of hypersensitivity.

Type I [anaphylaxis] blood.
Type II [cytotoxic] transfusion reaction.
Type III [immune complex – complement fixation]
Type IV [cell mediated – delayed hypersensitivity]

25. Classify diabetes mellitus.

- Type I – Insulin dependant diabetes [IDDM]
- Type II – Non-insulin dependent diabetes. [NIDDM]
- Gestational diabetes.

26. Classify emergency drugs.

No	*Drugs*	*Formulations*	*Route of administration*	*Indication*
1.	Oxygen	Cylinders	Inhalation	All emergency
2.	Adrenaline	1 mg in 1ml (1:1000) solution	Intra muscular	Anaphylaxis
3.	Hydro-cortisone	100 mg powder plus 2 ml distilled water	Intra muscular	Anaphylaxis and adrenal crisis
4.	Glucose	Powder	Oral	Diabetic hypoglycemia
5.	Aspirin	300 mg dispensable tablets.	Oral	Myocardial infaction
6.	Chlorphe-niramine maleate	10 mg in 1 ml solution	Intra muscular	Anaphylaxis.

Contd…

Contd…

No	*Drugs*	*Formulations*	*Route of administration*	*Indication*
7.	Glucagon	1 mg powder plus 1 ml sterile water	Intra muscular	Diabetic hypo-glycemia
8.	Solbutamol inhaler	0.1 mg per dose	Inhalation	Asthma
9.	Glyceryl trinitrate	0.5 mg tablet or 0.4 mg per dose spray	Sublingual	Angina
10.	Midazolam	10 mg in 2 ml solution	Intra muscular	Status epileptics.
11.	Dexame-thasone	8 mg	Intramuscular or Intravenous	Allergy

27. Define anaphylaxis.

The form is commonly used to denote the immediate transient kind of immunologic (allergic) reaction characterized by contraction of smooth muscle and dilation of capillaries due to release of pharmacologically active substances (histamine, bradykinin, serotonin slow reacting substance) classically impacted by combination of antigen C bar cell fixed.

28. Define Tachyphylaxis.

Tachyphylaxis – rapid appearance of progressive decrease in response to given dose following repetive administration of a pharmacologically or physiologically active substance.

29. Define Placebo.

An inert substance given as medicine for its suggestive effect.

30. Define Allergy.

Hypersensitivity caused by hyperexposure to a particular antigen [allergen] resulting in a marked increase in reactivity to that antigen upon subsequent exposure, some times resulting in harmful immunologic consequences.

31. Define analgesic.

A compound capable of producing analgesia that relives pain by altering perception of noceptive stimuli without producing anesthesia or loss of consciousness.

32. Define narcotic analgesics.

The drug was originally derived from opium or opium like compounds C patent analgesic effects associated with both significant alteration of mood or behavior and potential for dependence of tolerance.

33. Classify antidote.

Heparin	–	Protamine sulphate
LA	–	Phentolamine mesylate
Diazepan	–	Fumanzenil

34. Classify costicosteroids.

1. Glucocosticoids
2. Mineralo corticoids

35. Classify glucocorticoids.

1. Short acting	Hydrocortisone (Cortisol)	20 mg
2. Intermediate acting	Prednisolone	5 mg
3. Long acting	Dexamethasone	8 mg

36. Classify cephalosporins.

First generation	
Parenteral	***Oral***
Cephalothin	Cephalexin
Cefazolin	Cephradine, Cefadroxil
Second generation	
Parenteral	***Oral***
Cefuroxime	Cefaclor
Cefoxitin	Cefuroximeaxetil
Third generation	
Parenteral	***Oral***
Cefotaxime	Cefixime
Ceftazidime	Cefilinir
Ceftriaxone	Ceftibuten
Fourth generation	
Parenteral	***Oral***
Cefepime	Cefpirome
Cefpirome	Cefoselis
Fifth generation	
Parenteral	***Oral***
Ceftobiprole	-do-
Ceftarolirne	-do-

5 Sterilization and Asepsis

1. **Define Antiseptic.**

   It is a chemical applied to living tissues such as skin or mucous membrane to reduce the number of micro organisms present by inhibition of their activity or by destruction.

2. **Define Disinfection.**

   It is a process which reduces the number of viable pathogenic microorganisms to acceptable level, but may not inactivate some viruses of bacterial endospores.

3. **Define Sterilization.**

   It is a process of destruction or removal of all microbial forms including spores.

4. **Define Disinfectant.**

   It is a chemical substance, which causes disinfection. It is used on nonvital objects to kill surface vegetative pathogenic organisms, but not necessarily spore forms of viruses.

5. **Classify cleansing agents.**

   1. Soaps.
   2. Detergents.
   3. Fat solvent solution.

6. **Classify sterilization.**

   1. Moist heat sterilization.
   2. Dry heat sterilization.
   3. Gas heat sterilization.
   4. Irradiation.

7. Define moist heat sterilization.

Steam sterilization involves heating water to generate steam in closed chamber [autoclave] producing moist heat at 121ºC (250ºF) which destroys all micro organisms rapidly.

8. Classify test for efficiency of heat sterilization.

1. Spore testing.
2. Thermo couple.
3. Brown's test.
4. Auto clave tape.

9. Define dry heat sterilization.

Dry heat sterilization involves heating air with transfer of heat energy from the air to the instruments. It is an alternative method of sterilization of instruments particularly, the sharp instruments hot air oven.

1. Dry heat oven type. (Static air) 60-120 min at 320 to 160ºC.
2. Dry heat rapid heat transfer (forced air) 12 minute at 375°F/ 190°C.

10. Explain about Ethylene oxide gas sterilization.

Ethylene oxide gas at a temperature above 108ºC is a highly penetrative, non corrosive agent with bactericidal action against bacteria, spores and viruses. It destroys micro organisms by alkylation and causes denaturation of nucleicacids of micro organisms. It is highly toxic inflammable. It can be used to sterilize plastic, rubber syringes.

11. Explain in detail about Radiation type of sterilization.

Radiation is of two types

1. Ionizing radiation [X-rays, gamma rays, high speed electron]
2. Non-ionizing radiation.

12. Define Ionizing radiation.

It acts by depleting the DNA nucleus of the other vital cell components. There is no appreciable rise in temperature. High energy gamma rays from cobalt 60 are used to sterilize needles, syringes, swabs, culture plates.

13. Classify types of Non-ionizing radiation.

1. Ultra violet [less than 3000 atmospheric pressure to destroy bacteria].
2. Infra red rays.

14. Classify chemical disinfectants.

1. Aldehydes. (Formaldehyde, Gluteraldehyde) (2% cidex).
2 Biguanides [0.5% chlorhexidine] (70% alcohol).
3. Halogens [sodium hypochlorite].

15. Classify Antiseptic agents.

1. Alchohols (Isopropyl alcohol, ethyl alcohol).
2. Aqueous quaternary ammonium compounds.
3. Hexa chlorophene.
4. Iodophor compounds.

16. Mention the aims of waste treatment.

1. Disinfection.
2. Reduction in black volume.
3. Making surgical waste un recognizable.
4. Rendition of the dangerous recyclable items usable.

17. Classify colour coding bags.

Colour coding	*Type of container*	*Waste category*	*Treatment options as*
Yellow	Plastic bag disinfected container	Categories 1, 2, 3, 2, 8	Per schedule Inceneration/deep burial.
Red	Disinfected container/ plasticbag	Category 3	Autoclaving/ Microwaving/ Chemical treatment
Blue/ white	Plastic bag	Category 427	Autoclaving/ Microwaving/ Chemical treatment of destruction/ Shredding.
Black	Plastic bag	Category 5, 9, 216	Disposable secured land fill

18. Classify types of waste and methods of disposal.

	Waste	*Method of disposal*
1.	Liquid waste, bloody body fluids. Excretions, secretions	Burried in deep pit with bleeching powder, lime
2.	Solid wastes of dressings	Incineration.
3.	Laboratory of pathological wastes	Deep burial

6 Armamentarium and Suturing Techniques

1. **How do you classify instruments?**
   a. Hand cutting instruments.
   b. Rotary instruments.
2. **Classify hand instruments.**
   1. Instruments used for extraction.
   2 Instruments used to incise tissue.
   3. Instruments used for elevating mucoperiosteum.
   4. Instruments for controlling hemorrhage.
   5. Instruments for suturing the mucosa.
   6. Instruments for irrigation and suction.
3. **Classify B-P blade. Surgical blades and its uses.**
   - B-P blade denotes - Bard parker blade.
   - B.P. Blade No-15- } intra oral surgery.
   - No-12-hookedshape mucogingival surgical procedures.
   - No-10- skin incisions.
   - No-11- small stab incisions.
4. **Classify different types of periosteal elevator.**
   1. Dial mucoperiosteal elevator.
   2. Molt no 9-mucoperiosteal elevator.
   3. Howarth's - periosteal elevator.
   4. Farabeuf- bone rugine.
   5. Wards periosteal elevator.
5. **How do you classify retractor?**
   1. Soft tissue retractors.
   2. Hard tissue retractors.

6. Mention soft tissue retractor.

1. Austin check retractor
2. C- shaped retractor.
3. Lingual shaped third molar retractor.

7. Mention few examples of bone retractor.

1. Channel retractor.
2. Reverse langen back retractor.
3. Langen back retractor.
4. Coronoid retractor.

8. Classify bone cutting instruments.

1. Chisel, mallet and osteotome (hand cutting instrument)
2. Rotary instrument (Bur, Hand Piece, Micro Motor).

9. Mention the difference between chisel and osteotome.

1. Chisel- mono bevel it is usually used to remove the bone.
2. Osteotome- It is a bibevel instrument used to section the teeth.

10. Define bone file (miller colbourn bone file).

It is a double ended instrument with a small and large end. They are used to remove the bone. Pushing the bone file results only in burnishing, crushing the bone should be avoided.

11. Define bur and hand piece.

Bur and hand piece are defined as rotary instrument for removing bone, sectioning the tooth, and used for various surgical procedures. It should have relatively a high speed and torque.

12. Define curette.

The curette is an angled double-ended instrument used to remove soft tissue from bony defects (e.g.) Lucas bone curette.

13. Define Needle holder.

The needle holder is an instrument with a lock handle and a short, stout beak for intra oral placement of sutures. The size is approximately 6 inch (15 cm).

14. Classify different type of scissors.

1. Iris scissor-} fine scissor
2. Metzenbaum- scissor - for undermining soft tissue.
3. Dean scissor- curved and serrated blades for cutting tissues.

15. Mention common examples of suction tip.

1. Fraser suction tip.
2. Nuober.

16. Define scalpel.

This is an instrument used for making an incision. It has two parts namely blade and handle.

17. What are the methods of elevating periosteum?

1. Pyring motion: The pointed end can be used in Pyring motion to elevate the soft tissue for example reflecting dental papilla.
2. Push stroke: It is given with broad end of the periosteal elevator and is most efficient stroke to reflect the periosteium from the bone.
3. Pull stroke: It is also called the scrape stroke and is most likely to tear the periosteum and should be used carefully.

18. Define haemostatic forceps.

Haemostatic forceps are unidirectional, transverse serration on the blades which are used for catching both arteries and veins.

19. Mention the types of hemostats.

1. Large
2. Medium straight, curved.
3. Small

20. Classify instruments used for holding soft tissues.

1. Allis soft tissue holding forceps.
2. Lanes tissue holding forceps.
3. Babcock's tissue holding forceps.
4. Adson/gilles tissue holding forceps.

21. Define bone scoop.

Bone scoop is an instrument used to scrape the contents of a

cavity. It is similar to a curette; both the concavity of the working edges is more pronounced. It may also be used as a spoon.

22. Define bone rongeur.

- It has a curved blade that has spring action. The spring increases the force applied and hence efficiency of the instrument is increased there can be either one spring or double springs.

  (e.g.) Double action [Jensen Middleton double action rongeur forceps]
- Single action [Blumenthal]

23. Define Bone cutter.

Bone cutter is aside cutting instrument with sharp blade, it has spring action it has similar working principle to bone rongeur.

24. Define Mallet.

- A Mallet is made up of steel, lead or wood. It is similar to a hammer and is used for giving controlled taps on the chisel, bone gouge or osteotome. The mallet should be used in a loose, free swinging movement.
  $K.E = 1/2MV^2$
- Six inch mallet is used for minor oral surgical procedures.

25. Define Bone gouge.

It has round handle and a blade that has sharp working tip that is concave on the inner side. The working tip is half round and has a long working area.

26. Define arch bar.

Arch bar is a stainless strip which may be rigid or malleable, that can be adapted to contour the maxillary or mandilbular arch, which can be fixed to the teeth by wires.
(e.g.) Erich, jenlenko, custom made, etc.

27. Define wire.

Wire is a thin metal which is malleable and ductile and can be made into a preform shape and size. It is of usually of different gauge. 26, 28, 29 gauges.

28. Classify instruments used for reduction of maxillary fractures.

1. Rowes disimpaction forceps.
2. Hayton Williams forceps.
3. Walshman's forceps.
4. Asch forceps.

29. Define Drain.

Drain is the provisional device for mechanical removal of contents of the body organs, cavities or tissues.

30. Mention the indications for drainage.

1. Abscess cavities.
2. Surgical defects where post operative collection of Blood / inflammatory fluid is expected.
3. Urinary infection.
4. Intra operative ingestion of blood during general anesthesia.

31. Classify different types of drains.

1. Simple rubber catheter.
2. Corrugated rubber drain.
3. Infant feeding tube.
4. Foley's catheter.
5. Ryles tube.

32. Define cryosurgery.

Cryosurgery is the technique of using extreme rapid cooling ice (nitrous oxide gas) to freeze and their by it destroy tissues.

33. Define Laser.

LASER- is defined as Light amplification by stimulation emission of radiation.

34. Define cautery.

The term is coined as heating or burning the tissue by using red hot irons and boiling tar by this process.

35. Define diathermy.

The process involves a high frequency alternating current and it is the wave form of this alternating current that imparts the wide range of clinical effects that can be achieved.

36. Mentions the various modes of electrical diathermy.

- Coagulation.
- Fulguration.
- Cutting.
- Blending of cutting and coagulation.

37. Define photo dynamic therapy.

Photo dynamic therapy is a complex treatment modality that relies on the interaction of a photo sensitizer on an appropriate wave length of light and oxygen.

38. Define suture.

A suture is a strand of material used to ligate blood vessels and to approximate tissues together.

39. What is cat gut?

The Arabic word kit means dancing a master fiddle, the musical string of which were made up of sheep intestines. The word gradually evolved into "catgut" or "surgical gut".

40. What are the ideal requisites for suture materials?

1. Adequate strength.
2. Low tissue irritation and reaction.
3. Low capillarity.
4. Good handling and knotting properties.
5. Sterilizations without deterioration in properities.

41. How do you classify sutures?

1. Absorbable.
2. Non absorbable.
3. Mono filamentous.
4. Multifilamentous.

42. What are the parts of suture needles?

1. Eye.
2. Body
3. Point.

43. Mention the different types of suturing technique.

1. Interrupted sutures.
2. Continuous sutures.

3. Continuous lock suture.
4. Figure of eight suture.
5. Subcuticular suture.

44. Classify different types of mattress suture.

1. Vertical mattress suture.
2. Horizontal mattress suture.

45. Define surgical staples.

They are stain steel skin staples which are placed uniformly to span the incision line.

46. What are the principles of suturing?

1. Needle should be grasped at approximately 1/3rd the distance from the eye and 2/3rd from the point.
2. The needle should enter the tissues perpendicular to the tissue surface.
3. The needle should be passed through the tissues along its curve.
4. The needle always passes from the movable tissue to fixed tissue.
5. The needle always passes through the thinner tissue to the thicker tissues.
6. The needle always passes from the deeper tissue to superficial tissue.
7. Tissues must never be closed under tension.
8. The knot should never lie on the incision line.
9. Suture margin should be everted.
10. Sutures on the skin are usually removed in 5 days and intra oral sutures in 7 days.

47. What are the different types of typing the knot?

1. Square knot.
2. Surgeons knot.
3. Granny's knot.

48. Define tissue adhesives.

Tissue adhesives are polymers of epoxy resins and cynoacrylates which have high bond strength.

49. Define biomaterials.

Biomaterials are synthetic, alloplastic biodegradable polymers. Mostly applicable for reconstructive and cosmetic surgery of the face and oral tissues.

50. Classify Biomaterials.

1. Alloplastic biomaterials.
2. Biodegradable polymers.
3. Biologically derived materials.
4. Non osseous biologically implants.
5. Sutures.
6. Haemostatic agents.

51. Define magills forceps.

It is an equipment which is most often used for guiding an endotracheal tube, from the pharynx into the larynx during nasal intubation. It is also useful to pack the throat.

52. Define bite block (mouth prop).

A bite block, or [mouth prop] is metallic or rubber device which is placed between the teeth or gums to prevent them from occluding an endotracheal tube and to keep the mouth wide open for surgical access. It is generally placed between the occlusal surfaces of upper and lower molar teeth.

53. Define Scalp needle.

It is a modified hypodermic needle, to the stainless steel needle (a beveled needle without a hub), a plastic flange and a thin tube has been attached, at the end of the tube is a port (hub) to which a syringe nozzle, a three way or an in fusion set can be attached.

54. What is an IV cannula.

It is a plastic cannula with a hub into which a metal stylet fits, which has a bevel at one end and a hub at another end.

55. Define bivalve (three ways).

It is a device which has three ports one attached to IV needle, one to the infusion set and the third port remains free, which can be closed or blocked when not in use.

56. Define infusion set.

It consist of plastic tubing have one sharp end that can enter the infusion bottle (fluid) and the other that will fit the hub of a needle, cannula or a three way. The end that fits the bottle is called murphy's chamber, which has a dropper through which the infusion fluid drips into murphy's chamber. It should be half filled with air and half with the infusion fluid. It allows to see the rate of fluid. It has ordinary dropper (15 drops 1 m1) and micro dropper (50 drops-1 m1).

57. Classify different types of IV fuids.

- Crystalloids - [5% dextrose (glucose) Normal saline [0.9% sodium chloride].
- Ringer lactate solution.
- Colloids Haemaccel, hetastarch for blood loss.

58. Classify suture needle.

- Eyed suturing needle
- Eyeless suturing needle.

59. Classify different types of suturing needle.

- Straight
- Half curve
- One fourth circle
- Three eight circle
- Half circle
- Five eight circle
- Compound curvature.

7 Local Anaesthesia

1. **Define local anaesthesia.**

   If has been defined as a loss of sensation in a circum scribed area of the body caused by depression of excitation in nerve endings or an inhibition of the conduction process in peripheral nerves.

2. **Enumerate various methods of inducing local anesthesia.**
   1. Mechanical trauma.
   2. Low temperature.
   3. Anoxia.
   4. Chemical irritants.
   5. Neurolytic agents such as alcohol & phenol.
   6. Chemical agents such as local anesthesia.

3. **What are the ideal properties of local anesthetic solution?**
   1. It should be non irritating to the tissue when applied.
   2. It should not cause any permanent alteration of nerve structure.
   3. Its systemic toxicity should be low.
   4. The time of onset should be as short as possible.
   5. The duration of action must be long enough to permit the completion of the procedure yet not so long as to require an extended recovery.

4. **What are the types of pain?**
   1. **Pricking pain (lancinating pain):**
      - Pain arising from skin, mucous membrane, dental pulp and glands.

2. **Burning pain:**
   - Pain of longer duration mediated through un myelinated nerves.
3. **Aching pain:**
   - Pain arising from muscles, Fascia, tendons. Ligaments, joints, bone, etc. usually of long duration and associated with referred pain.

5. Define saltatory conduction.

In myelinated nerves, jumping of current from node to node occurs because of the heavy insulation of the inter nodal areas of the axons which takes place. This type of conduction is known as saltatory conduction.

6. How does a local anesthetic molecule?

1. Altering the basic resting potential of nerve membrane.
2. Altering the threshold potential.
3. Decreasing the rate of depolarization.
4. Prolonging the rate of repolarization.

7. What are the various theories of LA?

1. Acetyl choline theory.
2. Calcium displacement theory.
3. Surface charge theory.
4. Membrane expansion theory.
5. Specific receptor theory.

8. Define Pain.

Pain is defined as specific sensory experience to noxious stimuli mediated through nerve structures which are separated from those which mediate other sensations like touch or pressure.

9. Enumerate various theories of pain.

1. Specificity theory of pain.
2. Pattern theory of pain.
3. Gate control theory of pain.

10. What are the various types of nerve fibers?

A α 12-22 microns.
A β 8-13 microns.

A γ 4-8 microns
A s 1-4 microns.
B 1-3 microns.
C 0.2-1.3 microns.

11. What are the advantage of vasoconstrictor ?

1. Vasoconstrictor helps by slowing down the rate of absorption of local anaesthetic.
2. If increases the depth and duration of anesthesia.
3. Vasoconstrictor reduces the bleeding in the surgical field by improving the vicinity of the operating field.

12. How do you classify local anesthetics?

A Esters:

1. Esters of Benzoic acid.
2. Esters of Para amino benzoic acid.
3. Amides.
4. Quinoline.

13. What is Felypressin?

It is a synthetic analogue of vasopressin (anti duiretic hormone) It is a non-sympatomimetic amine, categorized as a vasoconstrictor. Max dose 0.03 IU/ml

14. How many milligram of local anaesthetic molecule is present in 1:10,000 concentration of vasoconstrictor?

0.01mg/ml

15. Mention the local anaesthetic which has a longer duration action.

Bupivacaine

16. What is EMLA ?

EMLA is Eutectic Mixture of Local Anesthetic cream which consist of 2.5% lidocaine and 2.5% prilocaine.

17. How many milligram of local anaesthetic molecule is present in 1:80,000 concentration of adrenaline?

0.0125 mg.

18. How many milligram of local anaesthetic molecule is present in 2% lidocaine?

20 mg.

19. What is the maximum recommended dose of local anesthetic molecule for an adult 70 mg/kg body weight with adrenaline?

- 4.4 mg kg/body weight

20. What is the maximum recommended dose of local anesthetic molecule for and adult 70 mg kg body weight without adrenaline?

- 7.4 mg kg/body weight.

21. Define Syringe.

It is the vehicle where by the contents of the anesthetic cartridge are delivered through the needle to the patient.

22. Classify individual composition of local anesthetic solution.

1. Local anesthetic 2%
2. Adrenaline 1:80000 (Vasoconstrictor)
3. Methylparaben- 1 mg (preservative)
4. Thymol -20 mg (Fungicidal)
5. Sodium metabisul phite-0.5 mg (reducing agent)
6. Sodium chloride-6 mg (isotonicity)
7. Ringer solution (vehicle)

23. How many milligram of Local anesthesia is present in a normal cartridge?

1.8 ml (36 mg)

24. Classify different types of syringes available in dentistry.

1. *Non-disposable syringes:*
   a. Breech loading metallic-cartridge type aspirating.
   b. Breech loading plastic, cartridge type aspirating.
   c. Breech-loading metallic, cartridge type self aspirating.
   d. Pressure syringe for periodontal injection.
   e. Jet injector needle
2. *Disposable syringes.*
3. Safety syringes.
4. Computer control local anesthetic delivery systems.

25. What are the ideal requirements of syringe?

1. They must be durable and with stand repeated sterilization without damage.
2. They should be capable of accepting a wide variety of cartridges and needles of different manufacture of permit repeated use.
3. They should be in expensive, Self-contained, Light weight simple to use with one hand.
4. They should provide for effective aspiration.

26. Define Needle.

Needle is a device that permits the movement of any solution from bevel of the cartridge into the tissues surrounding the needle tip.

27. What are the parts of the needle?

1. Bevel.
2. Shaft.
3. Hub
4. Syringe adaptor.

28. Define Gauge.

Gauge refers to the diameter of the lumen of the needle. The smaller the number greater the diameter of the lumen.

- 25- Gauge long (conventional)
- 27- Gauge long (conventional)
- 27- Gauge short (conventional)
- 28- Gauge long (conventional)
- 28- Gauge short (conventional).

29. Classify different types of needle.

- Short needle – 20 mm (measured from hub tip)
- Long needle – 32 mm.

30. What are the various precautions for needle care?

1. Needle must never be used on more than one patient.
2. Needle should be changed after several tissue penetrations in the same patient.

3. Needle should be covered with protective sheath to prevent accidental damage.
4. Needle must be properly disposed after use.

31. Define barb needle.

Barb needle or fish hook may be produced by manufacturing process, it is much more likely to develop when the needle tip forcefully contacts a hard surface such as bone.

32. Define dental cartridge.

The dental cartridge is a gas cylinder containing the local anesthetic drug among other ingredients. The dental cartridge is by common usage referred to as a 'carpule' by dental professionals. It is a registered trade name for dental cartridge prepared by cook dental laboratories who introduced dentistry in 1920.

33. Define infiltration anesthesia. (supraperiosteal injection).

A procedure where anesthesia is achieved by depositing the solution at terminal branches of the nerve endings. The area into which the diffusion takes place will be insensitive to pain.

34. Define topical anesthesia.

A procedure by which anesthetic agent is applied to the terminal nerve endings in the mucosa.

35. Define field block.

In this procedure local anesthetic solution is deposited near the larger terminal nerve branches so the anesthetized area will be circum scribed preventing the passage of impulses from the tooth to the central nervous system.

36. Define nerve block.

It is a procedure in which the local anesthetic is deposited (injected) close to a nerve trunk. It blocks sensation from the region which receives the peripheral distribution of the nerve.

37. Define intra osseous injection.

Intra osseous injections are one which are used to obtain local anesthesia when conventional technique is failed, it consist of

gaining access into the cancellous bone of the alveolus with a high speed engine using small round bur. A short 25 gauge needle is used to deposit the solution directly in the cancellous bone (some time interseptal bone is penetrated in children) about 0.5 ml of plain solution is injected.

38. Define jet injection.

It is a technique where in the solution is fixed into the soft tissues under hydrostatic pressure this is useful in painful injection like nasopalatine block and anterior palatine block.

39. Define periodontal ligament injection. (intra ligamentary injection).

It is a process of injecting local anesthetic solution directly into the area adjacent to tooth to be anesthetized. It can be a substitute for a nerve block.

40. Define intra pulpal infiltration.

- It is a technique of anesthetizing the pulp canals after the pulp chamber is opened. It is a supplement to the blocks or infiltrations with a bent needle the needle tip is inserted as deeply into the canal as possible and the anesthetic fixed under pressure into the pulp tissue. The anesthesia is more due to the pressure rather than the drug.

41. Define Intra papillary infiltration.

It is basically a sub mucosal paraperiosteal infiltration. The needle is inserted approximately 1mm into the desired papillae and about 0.2 ml of the anesthetic solution deposited.

42. Classify different types of maxillary nerve block.

1. Posterior superior alveolar nerve block.
2. Middle superior alveolar nerve block.
3. Anterior superior alveolar nerve block.
4. Greater palatine nerve blocks.
5. Infra orbital nerve block.
6. Naso palatine nerve block.

43. Define intra septal injection.

The intra septal injection is similar to periodontal injection it is useful for providing osseous and soft tissue anesthesia and hemostasis for periodontal curettage of surgical flap procedures.

44. Enumerate different types of (mandibular) anesthesia.

Intra oral:

1. Incisive nerve block.
2. Mental nerve block.
3. Inferior alveolar nerve block – (Direct technique, Indirect technique)
4. Vazirani akinosi closed mouth technique.

Extra oral:

6. Gow gates nerve block.
7. Foramen rotundum nerve block.

45. What are the local complications of LA ?

1. Needle breakage.
2. Persistent paresthesia.
3. Facial nerve paralysis.
4. Trismus
5. Soft tissue injury.
6. Haematoma.
7. Burning on injection
8. Infection
9. Oedema
10. Sloughing of tissues.

46. Define paresthesia.

Paresthesia is defined as persistent anesthesia or altered sensation well beyond the expected duration of anesthesia. It also includes, hyperesthesia and dysesthesia in which the patient experience both pain and numbness.

47. Define Trismus.

It is defined as a prolonged tetanic spasm of the few muscles by which the normal opening of the mouth is restricted (locked jaw).

48. Define hematoma.

The effusion of blood into extra vascular spaces can result from in advertently nicking a blood vessel (artey or vein) during the injection of a local anesthetic.

49. Mention a few systemic complications of LA.

1. Allergy.
2. Anaphylaxis.
3. Idiosyncrasy.
4. Overdose.

50. Define Allergy.

It is defined as hypersensitive state required through exposure to a particular antigen (a substance capable of inducing altered bodily reactivity). Re-exposure to which brings about altered capacity to react.

51. Define Idiosyncrasy.

It is the term used to describe a qualitatively abnormal unexpected response to a drug differing form its pharmacological actions and thus resembling hypersensitivity.

52. Define drug over dose.

A drug over dose reaction has been defined as those whose clinical signs and symptoms that result from an overly high blood level of a drug in various target organs and tissues.

53. What is ABCD ?

A - Airway.
B - Breathing
C - Circulation
D - Definitive care.

54. Define intra oral challenge test.

About 0.9 ml of LA injected via supra periosteal infiltration atraumatically above maxillary right or left premolar or anterior tooth, this term is provoked as intra oral challenge test.

55. Mention a few drugs in the recent advances in local anesthesia.

1. Cent bucridine.

2. Ropivacaine.
3. EMLA.
4. Hyaluronidase

56. Mention few Ultra-long acting local anesthetics.

1. Tetradotoxin (TTX)
2. Saxitoxin (STX)
3. Dinofiagellates (STX)

57. Define Transcutaneous electric nerve stimulation.

Transcutaneous electrical nerve stimulation (TENS), employs electrodes buccally and lingualy, which carry a minute electrical current to interfere with local nerve conduction useful in restorative procedures where profound analgesia is not required.

58. What are the advantages of electronic dental anesthesia?

1. No need for needle.
2. No need for injection of drugs.
3. Patient is in control of the anesthesia.
4. No residual anesthesia effect at the end of the procedure.

59. Define Hyaluronidase.

It is an enzyme that breaks down intra cellular cement. It has been advocated as an additive to local anesthesia because it permits injected solutions to spread and penetrate tissue. It is widely used in plastic surgery, dermatology and ophthalmologic procedures.

60. Mention an alternative preservative of methylparaben.

Caprylhydrocuprenotoxin

61. Define verills sign.

Drooping of the upper eyelid to a position half way across the pupil is an indication that the maximum sedative dose has been administered.

62. Mention a few oropharyngeal airway.

1. Brooks airway .
2. Gudels airway

63. Explain rule of thumb (young rule).

$$\text{Child's dose} = \frac{\text{childs age}}{\text{Age} + 12}$$

64. Explain Clark's rule.

$$\text{Childs dose} = \frac{\text{Childs weight in (pounds)}}{150}$$

65. Define malignant hyperthermia.

It is a pharmacogenetic disorder that is characterized by exclusive calcium ion release from sarcoplasmic reticulum of the muscle that leads to the rapid development of metabolic respiratory acidosis.

66. Mention the branches of trigeminal nerve.

1. Ophthalmic nerve.
2. Maxillary nerve.
3. Mandibular nerve.

67. Mention the branches of ophthalmic division of trigeminal nerve.

1. Lacrimal nerve.
2. Frontal nerve. (supra trochlear, supra orbital nerve)
3. Nasocillary nerve.

68. Explain various branches of nasocillary nerve.

A. Branches in the orbit.
   1. Short ciliary nerve.
   2. Long ciliary nerve.
   3. Posterior ethmoid nerve.
   4. Anterior ethmoid nerve.

B. Branches arising in the nasal cavity.
   - These branches supply the mucous membrane lining the cavity.

C. Terminal branches of the ophthalmic divisions on the face. They pass below the trochlear nerve to supply sensory fibers to skin of the medial parts of both eyelids in lacrimalsac, lacrimal caruncle.

69. What are the branches of maxillary division of trigemminal nerve ?

I. Branches in the middle cranial fossa
II. *Branches in the Pterygopalatine fossa.*
   1. Zygomatic nerve.
   2. Zygomatico facial nerve.
   3. Zygomatico temporal nerve.
III. *B- pterygopalatine (sphenopalatine) nerves.*
   1. Orbital
   2. Nasal
   3. Palatine branches
      a. Greater or anterior palatine nerve.
      b. Middle palatine nerve.
      c. Posterior palatine nerve.

C. Posterior superior alveolar branches.
D. *Branches in the infra orbital groove canal.*
   1. Middle superior alveolar nerve.
   2. Anterior superior alveolar nerve.

E. *Terminal branches of maxillary division on the face.*
   1. Inferior palpebral branches.
   2. External or lateral nasal branches.
   3. Superior labial branches.

70. Classify branches of mandibular division of trigeminal nerve.

I *Branches from main trunk*
   - A Nervous spinosum
   - B Nerve to medial pterygoid

II *Branches from the anterior division*
   1. Branches to lateral pterygoid
   2. Branches to masseter muscle.
   3. Branches to temporal muscle.
      a. Anterior deep temporal nerve.
      b. Posterior deep temporal nerve.
   4. Buccal (longbuccal) nerve.

III *Posterior division*
   1. Auriculotemporal nerve.
   2. Lingual nerve.
   3. Inferior alveolar nerve.

8 General Anesthesia

1. **Define Anesthesia.**

   Loss of sensation resulting from pharmacologic depression of nerve function from neurologic dysfunction.

2. **Define conscious sedation.**

   It refers to a minimally depressed level of consciousness without disturbance to the protective reflex.

3. **Define Deep sedation.**

   It is defined as a controlled state of depressed consciousness with a partial loss of protective reflexes including the ability to respond purpose fully to verbal commands.

4. **Define Relative analgesia.**

   It is considered to be one of the efficient and safe methods of pain control used judiciously by combining nitrous oxide-oxygen or pre-medications to supplement local anesthesia.

5. **Define General anesthesia.**

   It is defined as a state of controlled unconsciousness from which the person cannot be roused by external stimuli.

6. **Define premedication.**

   It is defined as prior administration of drugs before anesthesia to reduce apprehension and tension.

7. **What are the ideal properties of an anesthetic agent?**

   a. Capable of producing reversible and controllable levels of anesthesia.
   b. They must have wide safety margin.

c. They should not have cytotoxic effects.
d. Recovery must be pleasant and rapid.
e. The drug should not have any undesirable interactions with drugs which are likely to be given during or after anesthesia.

8. What are the stages of general anesthesia?

- Stage I Analgesia
- Stage II Excitement
- Stage III Surgical anesthesia
- Stage IV Medullary/bulbar paralysis.

9. Define ASA classification.

- Class I: An apparently healthy patient. On whom, nothing abnormal could be detected.
- Class II: Patients with mild risk factors.
- Class III: Patients with severe risk factors, but not serious enough to in capacitate the person.
- Class IV: Patients dangerously ill and not expected to survive.

10. What are the methods of inducing general anesthesia?

a. Oral
b. Inhalation
c. Intravenous
d. Intramuscular
e. Rectal
f. Intra arterial
g. Subcutaneous.

11. Mention a few general anesthetic agents.

a. Halothane
b. Enflurane
c. Nitrous oxide
d. Ether.

12. Mention a few intravenous general anesthetic agent.

a. Ketamine
b. Diazepam

13. What is Dissociative anesthesia?

It is a state in which the patient appears to be awake, has his eyes open, and is capable of muscular movement but appears to be un aware of, or dissociated form of the environment, another term for this type of state induced by Ketamine is cataleptic anesthesia.

15. What is neuroleptic anesthesia?

A technique of general anesthesia based upon intravenous administration of neuroleptic drugs, together with inhalaton of a weak anesthetic with or without neuromuscular relaxants.

16. Mention a few intravenous sedation techniques.

1. Jorgensen technique.
2. Shane technique.
3. Bens technique.

17. Define Narcotic analgesic.

The narcotics are used primarily for their analgesia properties. They are excellent drugs for the relief of moderate to severe pain. Narcotics are classified into:

1. Narcotic agonists,
2. Narcotic agonists/antagonists
3. Narcotic antagonists.

18. Define hypnosis.

It is described as a special transient like state in which the subject's attention is focused intensely on the hypnotist, while attention to other stimuli is marked diminished.

19. Mention a few examples of narcotic analgesics.

1. Morphine
2. Pethidine
3. Pentazocine
4. Codeine.

20. Define Regional Anesthesia.

The term define the use of local anesthetic solution to produce circumscribed areas of loss of sensation a generic term including conduction nerve block, spinal block. Epidural block, etc.

21. What is an Analgesic?

A compound capable of relieving pain by altering perception of nociceptive stimuli without producing anesthesia or lossof consciousness.

22. Define General anesthetics.

General anesthetics are agents which bring about reversible use of sensation with a reversible lose of consciousness. They also bring about muscle relaxation and abolition of reflexes.

23. Mention the Indications for General anesthesia.

1. Patients allergic to local anesthetics.
2. Multiple extractions in one sitting.
3. Adults who are abnormally apprehensive about surgical procedures.
4. Open reduction of fractures and skeletal pin fixator, etc.
5. Major surgical procedures like excisions of cancers, huge tumour masses and cysts which cannot be operated under local anesthesia.
6. TMJ operations which cannot be done under local anesthesia.

24. Mention a few contraindications of General anesthetics.

1. Patient of un compensated heart disease myocarditis. Pronounced cardiac arrythmias and high blood pressure.
2. Patients on asthmatics.
3. Patients on steroids.
4. Pronounced anoxemia.
5. Respiratory tract infections.
6. Advanced pregnancy.

25. Mention the various theories of General anesthetics.

1. Meyer overtone lipid solubility theory.
2. Surface tension theory.
3. Hydrate theory
4. Cell permeability theory.
5. Theory of impairment of energy production and utilizations.

26. Classify General anesthetics.

I. Inhalation anesthetics.
II. Intravenous anesthetics.
  – Inhalation anesthetics
  – A volatile liquids
I – (e.g.) Halothane} Halogenated hydrocarbons Cholorform}
II Halogenated ether
  – Isoflurane
  – Enflurane.
III Non halogenated compound
  – Diethyl ether
  – Vinyl ether.

GASES

– Nitrous oxide.
– Acyclopropane.
II Intravenous anesthetics
  1. Ketamine
  2. Fentanyl droperido1.
  3. pentathalsodium

27. Classify various techniques of administering inhalation anesthetics?

1. Open drop method.
2. Anesthetic machines

28. Define open drop method.

Liquid GA poured on a mask with gauze, Vapour inhaled with air. It is a simple method for ether anesthesia.

29. Mention a few examples of anesthetic delivery system.

1. Gas cylinders.
2. Flow meters.
3. Specialized vaporizers, valves.
4. Reservoir bag, corrugated tubes.
5. Face mask, endotracheal tube.

30. Define open system, closed system.

- **Open system:** No rebreathing of the anesthetic exhaled gases escape, better control of concentration high flow rate.
- **Closed system:** Rebreathing of the anesthetic agent carbon dioxide is absorbed in sodalime limit, low flow rates, for expensive and explosive agents.
  (e.g.) cyclopropane, Halothane.

31. What are the complications of General anesthesia?

1. Preoperative complication (Apprehension, talkativeness).
2. Intra operative complication (vomiting, nausea, regurgitation).
3. Postoperative complication (Fever, vomiting, laryngospasm).

32. Define Anesthesia machine.

Anesthesia machine is an equipment, by which the operator can deliver a desired concentration of a mixture of anaesthetic agent (gases as well as liquids) in an inhalational (gaseous) form with oxygen and/or air which serves as vehicle to carry this mixture to the outlet of the equipment.

33. Define Breathing system.

Breathing system is an assembly of equipment that not only carries anaesthetic mixture from the outlet of anesthesia machine to the patient, but also allows to monitor and control patients breathing.

34. Classify various parts of breathing system.

1. Bag mount with reservoir bag (1.5 to 2 liter capacity).
2. Long corrugated rubber tube (one, meter).
3. Expiratory valve, ordinary spring loaded.
4. Non breathing valve (connected to mask or end tracheal tube).

35. Define mask.

Mask is an integral part of any anaesthetic breathing system / circuit during the induction phase (beginning) of anaesthesia or any resuscitation procedure. A mask allows administration

of gases from the breathing system without introducing any invasive apparatus leg (eg endotracheal tube).

36. What are the parts of mask and their sizes?

Parts:

- Connector/mount.
- Body.
- Edge seal.

Sizes. 1, 2, 3, 4, 5.

37. Define laryngoscope.

It is an instrument designed for doing direct laryngoscopy (view vocal cords) and to pass an endotracheal tube into the larynx under vision.

38. Classify various parts and sizes of blades.

- Parts - Handle, blade with light bulb.
- Sizes - Neonate (infant) pediatric (child).

39. Define endotracheal tube.

Endo tracheal tube is a specially designed tube with one end straight and the other end being obliquely cut (beveled end). Beveled end enters the trachea through the laryngeal inlet. It may be plain or cuffed plastic, rubber or latex disposable or reusable; cuff may be low volume or high volume.

40. What are the various sizes of the endotracheal tube?

Size 2, 2.5, 3, 3.5, 4, 10, 10.5 (internal diameter).

41. Define airway.

Airway is defined as a technique to lift the tongue and epiglottis away from the posterior pharyngeal wall and present them from obstructing the space above the larynx. It is through useful in maintaining a patient in unconscious or heavily sedated patient where tongue fall occurs due to relaxation of the muscles of the floor of the mouth and pharynx.

42. Classify airway?

1. Oropharyngeal airway.
2. Nasopharyngeal airway.

43. Classify parts of size Oropharyngeal airway [placed from lips to pharynx] ?

Parts: Flange, bite portion, air/suction channel [curved portion].
Sizes: 1, 2, 3, 4.

44. Classify parts and size of nasopharyngeal airway [placed from nose to pharynx] ?

Parts: [flange or a movable disc attached to a tube]
Sizes [diameter]

- 7.0/7.5 for adults male.
- 6.0/7.0 for adults female

45. Define Laryngeal mask airway [LMA].

- It is a device which is midway between mask and endotracheal tube. LMA makes an airtight low pressure seal around laryngeal in let after inflation of the cuff.

46. Classify parts, version, sizes of laryngeal mask airway.

- **Parts:** Mask, tube at an angle of 30 degrees, black line on tube to face upper incisors and pilot balloon.
- **Versions:** Plain, reinforced. Sizes 1, 1.5, 2, 2, 5.3, 4.5.

9 Exodontia

1. **Define Exodontia.**

   Exodontia is skillful removal of pain less tooth so that would heal uneventfully with minimal prosthodontic complications.

2. **Enumerate various technique of extraction.**

   1. Forceps technique
   2. Elevator technique
   3. Open method.

3. **What are types of extraction?**

   1. Simple extraction. (intraalveolarr)
   2. Surgical extraction. (transalveolar)

4. **What are the indications for forceps technique?**

   1. Fairly mobile teeth
   2. Extraction of single tooth.
   3. Extraction of multiple teeth which are scattered.

5. **What are the contraindications of extractions?**

   - Deformed roots.
   - Badly destroyed teeth.
   - Hard tissue pathology of roots like hypercementosis.

6. **What are the advantages of forceps technique?**

   - Least amount of trauma
   - Retention of good blood clot
   - Favors rapid healing.

7. Define elevator.

Elevator-is an instrument used to luxate or remove a tooth or a root from its socket.

8. What are the indications for elevator technique?

1. Luxate and extract the teeth that cannot be done by forceps.
2. Remove roots.

9. What are the Contraindications of elevator technique?

1. Fracture adjacent tooth.
2. Fracture maxilla, mandible.
3. Fracture alveolar process.
4. Injury of soft tissue if proper care is not taken.
5. Penetrating into maxillary sinus, during extraction of posterior tooth.

10. Enumerate the rules for the use of elevator:

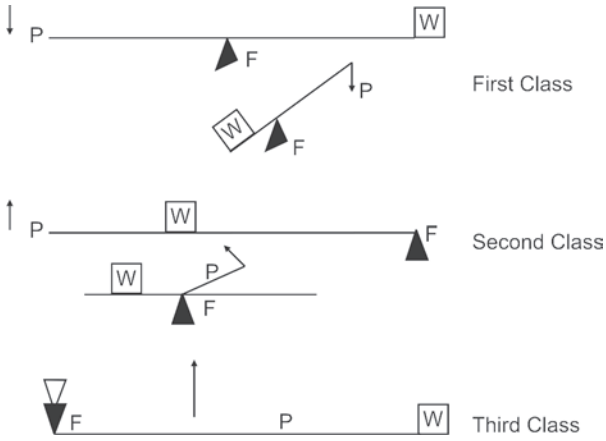
1. Never use an adjacent tooth as fulcrum unless that tooth is also to be removed.
2. Never use buccal plate at gingival line as fulcrum except in 3rd molars.
3. Never use lingual plate as fulcrum.
4. Use interseptal bone as fulcrum.
5. Always use finger guard to protect the patient.

11. What are the various principles of elevator?

- Lever
- Wedge
- Wheel and axle principle

12. What are the various principles of lever?

- Lever is a bar of rigid material moving on a fixed point of fulcrum.
- The longer arm transmits the power by which the weight is moved. The weight is the object to be raised and furnishes the resistance against which the machine acts.



- 1st order and 2nd order are in Exodontia.
- Power is through the Handle of forceps.
- Fulcrum is the osseous structure.
- Weight is the tooth or root to be dislodged.

13. How do you classify elevators?

Classification of elevators

1. According to use
2. According to form

According to use

1. Remove entire tooth.
2. Remove roots.
3. Roots broken halfway in the apex.
4. Remove apical third of the root
5. To reflect mucoperiosteum

According to form:

1. Straight.
2. Angular.
3. Crossbar.

Cryer elevators:

1. **DESIGN:** Triangular in shape, inner-concave, Outer-convex edges are sharp.

2. **FUNCTION:** To Cut cancellous bone, also, used as a lever to dislodge roots of madibular molars.

II

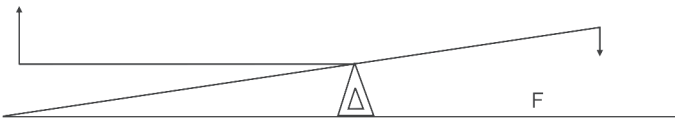
- **Winters cross bar long** - 14R 14L 11R 11L 1 Short.
- Design: Same as cryer, with larger and heavier working point.
- Function: Same as cryer.
- Uses: 14R, 14L - deep molars.
  - 11R, 11L - tooth roots near rim of alveolus.
  - Removal of impacted mandibular 3rd molars using buccal plate as fulcrum.

OTHER ELEVATORS

- Apexo elevator: Removal of fractured root apices
- Potts elevator: Removal of deciduous root tips.

Work Principle

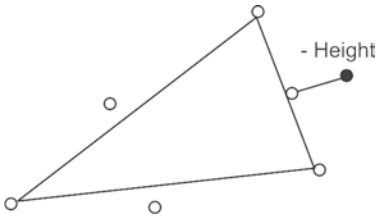
Output 30 pounds **Input 10 pounds**



Mechanical advantage = Output force = 30/10=3
Input force

Wedge principle

h = 4 mm



Length
L = 10 mm

Mechanical advantage = L/H 10/4=2.5

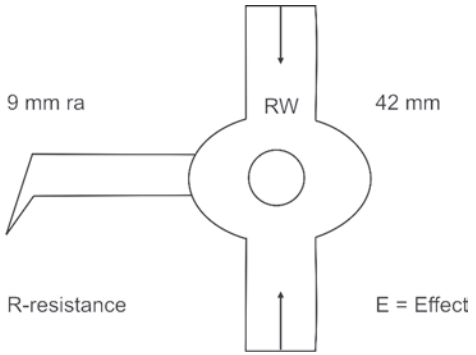
Wheel and axle

Effect x Radius of wheel = Resistance×radius of the axle

ra = 9 mm

RW = 42 mm

$$\text{Mechanical advantage} = \frac{RW}{ra} = 42 / 9 = 4.6$$



14. Define two point contact.

When there is a double linear contact between the forceps blade and the root is called two point contact.

15. Define one point contact.

When there is single linear contact between the root and forceps blade is called one point contact.

16. Define the types of blade in a forceps.

- Narrow blades - fine
- Wide blades - heavy.

17. Define Stobie's technique.

When a straight elevator is inserted between lower incisors and rotated, both the teeth are loosened and extraction is being facilitated with forceps.

18. What is transalveolar extraction?

In this technique trans-alveolar dissection was carried out, the crown was removed and the root were separated by the use of a bur or chisel in order to facilitate the dislocation of the tooth from the socket.

19. What are the principles of extraction?

1. Loose and pain full teeth are extracted
2. Roots are extracted before whole teeth
3. Upper teeth before lower teeth
4. Posterior teeth before anterior teeth in order not to obstruct the vision.

20. Define root apex.

A root-apex may be defined as a root fragment less than 5 mm in its greatest dimension.

21. Define various complications of tooth extraction.

1. Fracture of tooth
2. Dislocation of tooth
3. Excessive hemorrhage
4. Damage to soft tissues
5. Post operative pain
6. Post operative swelling.

22. Define Trismus.

Trismus may be defined as in ability to open the mouth due to muscle spasm and may complicate dental extractions. It may be caused by post operative oedema, haematoma formation, or inflammation of soft tissues.

23. Define dry socket.

This clinical entity is a localized osteitis involving either the whole or a part of the condensed bone by an acutely painful tooth socket containing bare bone and broken-down blood-clot.

24. What is the difference between dry Socket and Osteomyelitis?

Both the entity are same where in,osteomyelitis there is marked pyrexia and severe pain.

25. What are the parts of the forceps?

- Beak, joint and Handle.
- In maxillary forceps the beaks are at 180° to the handle, in mandilbular forceps the beak are at 90° to the handle.

26. Define closed beak extraction.

The beaks are identical, close, broad, straight and flat, used for extraction of maxillary incisors and canines.

27. Define open beak extraction.

The beaks are concave, rounded, or angulated which are broad and open for extraction of maxillary posterior tooth.

28. Define serial extraction.

This is an interceptive orthodontics by which sequential extractions of deciduous teeth reduce the severity of malocclusion and hopefully reduce the extent of mechanical intervention

29. Define therapeutic extraction.

Depending on the arch length deficiency and the crown size, the orthodontic decision to therapeutically extract the premolar or molar teeth is taken, so that adequate space could be gained for realigning the teeth more often the first premolar is removed as part of orthodontic treatment plan.

30. What is trendelenberg position?

This position aids in venous return from the lower portions of the body by preventing venous congestion in the upper body, in addition the weight of the viscera is not thrown onto the diaphragm which impairs respiration.

31. Define chair position for tooth extraction.

- Maxillary chair position height - Shoulder or between shoulder and elbow level
- Mandibular chair postion height - Below the elbow level.
- Maxillary chair tooth postion - In front of the patient.
- Mandilbular chair tooth postion Rightside - Behind the dental chair 10-0 clock position.
- Mandibular chair tooth position Left side - In front of dental chair 8- 0 clock position.

32. What are the various movements for extraction of individual tooth?

Various movements for extraction of individual tooth

Upper central, lateral, canine, first pre-molar, second pre-molar	First apical → slight → labial/ buccal → slight palatal rotation with traction
Upper molars	First apical → buccal → palatal deliver the tooth buccaly
Lower central, lateral, canine, first pre-molar, second pre-molar	First apical → slight labial/buccal slight lingual → rotation with traction
Lower molars	First apical → buccal → lingual → deliver the tooth buccally

33. Which is the common principle employed in tooth extraction?

Wedge principle.

34. Define Wilkinson extraction.

It is defined as prophylactic removal of all first molars to prevent dental caries measure.

35. How do you classify stages of wound healing?

1 Hemorrhage and clot formation.
2. organization of the clot by granulation tissue.
3. Replacement of granulation tissue by connective tissue and epithelization of the wound .
4. Replacement of the connective tissue by coarse fibrillar bone.
5. Reconstruction of the alveolar process and replacement of the immature bone by the mature bone.

10 Impaction

1. **Define impaction.**

   An impacted tooth is one that fails to erupt and will not eventually assume its anatomical arch relationship beyond the chronological eruption date.

   It is also defined as impedance of tooth along the path of eruption.

2. **Mention of few indications for removal of impacted tooth.**
   1. Pericoronitis.
   2. Root resorption
   3 Foci of infection.
   4. Trauma.
   5. Cyst/Tumor.
   6. Orthodontic problem.

3. **Classify impacted mandibular 3rd molars.**
   1. Winters classification.
   2. Pell and Gregory's classification.

4. **Mention the details of WHARFE's assesment.**
   1. Winters classification.
   2. Height of the mandible.
   3. Angulation of III molar.
   4. Root shape.
   5. Follicles.
   6. Path of exit.

5. **Define war lines.**
   - W- White line.

- A- Amber line.
- R- Red line.

6. Mention the types of flap for surgical removal of 3rd molar.

1. L- Shaped flap.
2. Envelope flap.
3. Bayonet – Shaped flap.

7. Enumerate the various techniques for surgical removal of 3rd molar.

1. Bur technique.
2. Chisel vs bur technique.
3. Lateral trephination technique.
4. Lingual split bone technique.

8. Mention a few complications of surgical removal of mandibular 3rd molar.

1. Alveolar osteitis.
2. Fracture of mandible.
3. Hemorrhage.
4. Displaced tooth during surgery.

9. Classify maxillary impacted tooth.

1. Mesioangular.
2. Horizontal.
3. Vertical.
4. Distoangular.

10. Which is the most difficult tooth to remove surgically?

1. Horizontal
2. Distoangular.

11. Classify canine impaction?

Ackerman has classified into – Labial/palatal

12. Mention a few radiographs to be taken for maxillary and mandilbular impacted tooth.

1. Intra oral periapical radiograph (IOPA)
2. Occlusal radiograph.
3. Orthopantamogram (OPG)
4. Others.

13. Mention the various etiology behind impacted tooth.

1. Chronology.
2. Lack of space.
3. Obstruction.
4. Dilaceration.
5. Non eruption.

14. Describe the necessity of radiological assessment of impacted tooth.

1. Assess the type of impacted tooth.
2. Surgical access.
3. To undermine the existing pathology.
4. Position and depth of impacted tooth.
5. Bone texture.
6. Relationship with inferior alveolar dental canal.

11 Cyst

1. **Define cyst.**

   A cyst is a pathologic cavity that may be filled with fluid, semi fluid or gaseous contents but never pus and may or may not be lined by epithelium.

2. **Define odontogenic cyst.**

   Odontogenic cysts are derived from odontogenic epithelium of the stomodeum. The Odontogenic epithelium consists of enamel organ, reduced enamel epithelium, remnants of dental lamina, hertwig's epithelial root sheath.

3. **Classify cysts of oral cavity?**

   1. Odontogenic cyst.
   2. Nonodontogenic cyst.

4. **Classify Odontogenic cyst?**

   A. *Developmental:*
      1. Odontogenic keratocyst.
      2. Dentigerous cyst.
      3. Calcifying epithelial Odontogenic cyst.

   B. *Inflammatory:*
      1. Periapical cyst
      2. Radicular cyst.
      2. Residual cyst.

5. **Classify Non-odontogenic cyst?**

   A. 1. Nasopalatine duct cyst.
      2. Naso labial cyst.
      3. Maxillary antrum associated cyst.

B. *Pseudocyst.*
   1. Idiopathic bone cavity.
   2. Aneurismal bone cyst.
   3. Stafne's cyst.

C. *Retention cyst*
   1. Mucocele.
   2. Ranula.

D. *Congenital cyst.*
   1. Dermoid cysts.
   2. Thyroglossal duct cyst.
   3. Cystic hygroma.

E. *Parasitic cysts.*
   - Hydatid cyst.

6. Describe the etiopathogenesis of cyst formation.

1. Cyst initiation.
2. Cyst Enlargement.

7. Mention the theories of cyst enlargement.

1. Mural growth.
2. Peripheral cell division.
3. Accumulation of contents.
4. Hydrostatic enlargement.

8. Classify the treatment of cyst?

Marsupialization (Partsch I)
Marsupialization followed by enucleation (Partsch II)

Modifications

- Decompression followed by enucleation.
- Marsupialization with nasal antrostomy.

Enucleation

- Primary closure (partsch II)
- With open packing.

9. Define Marsupialization.

In this procedure an opening is created intraorally into the cystic cavity which releases the intra cystic pressure.

10. Define Enucleation.

Enucleation involves complete removal of the cyst lining and its contents.

11. Define curettage.

The Latin word curette means cleanse the socket or cavity there by gradual removal of the cyst wall using curettes.

12 Maxillary Sinus

1. **Mention the boundaries of the maxillary sinus.**

   Anterior – Roof – Floor of orbit (thin orbital plate).
   - **Floor:** Alveolar process of maxilla. (lateral hard palate).
   - Infra temporal surface of the body of maxilla.

   Posterior wall – Infra temporal surface of pterygopalatine fossa.
   - It is pierced by posterior superior alveolar nerves which travel to molar teeth.

   Anterior wall – Facial surface of maxilla.

2. **Mention the innervation of blood supply & nerve supply of maxilla.**

   Blood Supply:
   - Facial, maxillary, infraorbital, greater palatine arteries.
   - **Veins** Anterior facial, pterygoid plexus of veins.
   - **Lymphatic drainage** submandibular and deep cervical lymph nodes.

   Nerve supply superior dental nerve, greater palatine nerve.

3. **How does maxillary sinus grow ?**

   In early stages maxillary sinus is high, it grows by pneumatization. Occasionally the sinuses pneumatize further after removal of one or more maxillary posterior teeth and extend into the residual alveolar process. In adults, apices of the posterior teeth may extend into the sinus cavity.

4. **Explain the anatomy of maxillary sinus.**

   The sinus is lined by respiratory epithelium namely mucus secreting, pseudo stratified ciliated columnar epithelium. It is also known schneiderian membrane.

5. What are the functions of maxillary sinus?

1. Import resonance of voice.
2. Increase the surface area and lighten the skull.
3. Filter the debris from the inspired air.
4. Moisten and warm the inspired air.
5. It provides thermal insulation.

6. Classify Radiological examination of maxillary sinus.

i. Extra oral view.
ii. Lateral skull view.
iii. Submento vertex view.
iv. Linear tomography, ortho pantomography and computed axial tomography.

Intra oral:

i. Occlusal
ii. Lateral occlusal and periapical.

7. Define Maxillary sinusitis.

Maxillary sinusitis is the inflammation of mucosa of any paranasal sinuses.

8. Define Pan Sinusitis.

Inflammation of most of all paranasal air sinuses simultaneously is known as pan sinusitis.

9. Define aetiology of sinusitis.

i. Infection
ii. Periapical abscess.
iii. Upper respiratory infection.
iv. Trauma.
v. Allergy.
vi. Neoplasm.

10. Define oroantral fistula.

An oroantral perforation is an un natural communication between the oral cavity and maxillary sinus.

11. Classify etiology of oroantral fistula.

1. Extraction of teeth.
2. Chronic infection of maxillary sinus.

3. Perforation of the floor of sinus.
4. Malignant diseases.
5. Forcing a tooth or root into the sinus during attempted removal.

12. Classify various investigations of oroantral fistula.

1. Nose blow test.
2. Cheek blowtest.

13. Define Epistaxis.

It is defined as escape of blood from the sinus through the ostium into the nostril.

14. Classify local flap?

1. Buccal advancement flap (Reherman flap).
2. Palatal advancement flap (Ashley flap).
3. Combination of buccal and palatal flap.

15. Define intra nasal antrostomy.

It is a surgical procedure carried through the inferior meatus in the nasal cavity into the maxillary sinus (small size osteotome or gouge is pushed in nasal cavity).

16. Define Caldwell luc-operation.

George-Caldwell in 1893 (Newyork and Henriluc in 1897 from Paris described a method of gaining entry into the maxillary sinus via canine fossa with nasal antrostomy known as caldwell luc procedure.

17. What is the composition of white head varnish?

Benzoin	–	10	parts (4 4 9)
Iodoform	–	10	parts (4 4 9)
Storax	–	7.5	parts (3 3 9)
Balsam of to IV	–	5	parts
Solvent ether	–	100	ml

13 Orofacial Infections

1. **Mention the spread of infections.**
   1. Spread of infection within the dental structures.
   2. Spread into the bone.
   3. Spread into the soft tissue.
2. **Explain the detail stages of spread of infections.**
   a. Stage of infection.
   b. Stage of triggering infection.
   c. Stage of abscess formation.
   d. Stage of resolution.
3. **Defined fascial spaces.**

   Shapiro defined as fascial spaces are potential spaces that exsist between the layers of the tissue. They are normally filled by loose connective tissue.
4. **Define cellulitis.**

   It is defined as infection and inflammation of subcutaneous tissue and fascial planes.
5. **Define pericoronitis.**

   It is defined as infection and inflammation of the soft tissues of varying severity around an erupting or partially erupted tooth with breach of the follicle.
6. **Classify fascial compartments.**
   1. Maxillary fascial compartments.
      A Canine space
      B Buccal space
      D Pterygo palatine space.

2. Mandilbular fascial compartments.
   A. Masticator space
   B. Submandibular space and sublingual space.
   C. Pterygo mandilbular space.
   D. Lateral pharyngeal space.
   E. Retropharyngeal space.

7. Define Ludwig's angina.

This term was coined by camerer in 1837. It involves bilaterally three fascial spaces submandibular, submental and sublingual spaces.

8. Classify deep cervical fascia.

A. Superficial investing layer of deep cervical fascia.
B. Pretracheal fascia.
C. Prevertebral fascia.
D. Carotid sheath.

9. Classify boundaries of buccal space.

- Medially - Buccopharyngeal fascia and buccinator muscle.
- Laterally - Skin of cheek.
- Superiorly - Zygomatic arch.
- Inferiorly - Lower border of mandible.
- Anterorily - Zygomatic and depressor anguli oris.
- Posteriorly - Buccinator and pterygomandibular raphe.
- Contents - Parotid duct.
  - Buccal pad of fat.
  - Facial artery.

10. Define Operculectomy.

Operculum is defined as dense fibrosis of flap which covers about 50% of occlusal surface of a completely or partially erupted mandibular third molar. The removal of this flap is known as operculectomy. It is not easy to remove this flap as the tissues are freely movable and slides away beneath the usual scalpel or scissors. This flap can be best removed with the help or electrosurgical scalpel or radio surgical void.

11. Define infection.

Infection is defined as invasion and colonization of pathogenic microorganisms body tissues resulting in local cellular injury due to competitive metabolic toxins intracellular replication or antigen antibody response.

12. Define odontogenic infection.

It is defined as infection that originates in the dental pulp, periodontium, and jaw bones or in the tissues that closely surround it. The odontogenic infections are mostly bacterial in origin.

13. Classify oral facial infection.

1. Based on organism causing infection.
2. Based on the tissue affected.
3. Based on the route of entry.
4. Based on clinical presentation.
5. Based on fascial compartment.

14. Define an Abscess.

An abscess is a thick wall cavity that contains pus.

15. Define periapical abscess.

An abscess of Odontogenic origin mainly in relation to root apices that arises and is constrained within the alveolar bone.

16. Differentiate periapical and periodontal abscess.

Features	*Periapical abscess*	*Periodontal abscess*
Age	Young and middle-aged	Milder to older age
Site	Usually over the apex of the tooth	Usually over gingival third of alveolar Process
Aetiology	Necrosis of the pulp	Periodontal pockets
Tooth mobility	Late stages	Early stages

17. Mention the Differences between cellulitis and abscess.

No.	*Features*	*Abscess*	*Cellulites*
1.	Duration	5 days	3-7
2.	Size	Small	Large
3.	Localization	Circumscribed	Diffuse
4.	Palpation	Fluctuant	Hard and tender
5.	Skin	Shiny under mined	Thickened
6.	Temperature	Moderately hot	Hot
7.	Tissue fluid	Pus	Serosanguous
8.	Loss of function	Moderalately Severe.	Severe
9.	Bacteria	Anaerobic	Mixed
10.	Degree of seriousness	Moderately severe	Very severe

18. Mention the boundaries of canine space.

1. Superiorly - Quadratus labisuperiors.
   Inferiorly - Orbicularis oris
   Deep - Levator anguli oris, anterior surface of maxilla.
   Medially - Levator labio alaeque nasii
   Laterally - Zygmomaticus major.

Contents:

- Angular artery and vein.
- Infraorbital nerve.

Likely source of infection:

- Maxillary canine.
- First premolar

19. Mention the boundaries of submandibular space.

Boundaries:

- Superiorly: Inferior and medial surface of the mandible and attachment of mylohyoid.

Inferiorly:

- Anterior and posterior belly of digastric.

Laterally:

- Skin, superficial fascia, platysma, investing fascia.

Medially:

- Mylohyoid, hyoglossus, superior constrictor, styloglossus.

Contents:
- Sub mandibular gland
- Facial artery and vein
- Lymph nodes.

Source of infection:
- Mandibular molars.

20. Mention the boundaries of Sub mental space.

Boundaries:
- Anteriorly - Mandible.
- Posteriorly - Hyoid.
- Superiorly - Mylohyoid.
- Inferiorly - skin of subcutaneous tissue, platysma, and deep cervical fascia.
- Medially - common space, no medial wall
- Laterally - anterior belly of digastric.

Contents:
- Anterior jugular vein.
- Lymph nodes.

Source of infection:
- Mandibular anterior teeth.

21. Mention the boundaries of sublingual space.

Boundaries:
- Anteriorly - lingual surface of mandible.
- Posteriorly - body of hyoid bone.
- Superiorly - oral mucosa.
- Inferiorly - mylohyoid of muscle.
- Medially - muscles of the tongue.
- Laterally - lingual surface of mandible.

Contents:
- Sublingual gland.
- Wharton's duct.
- Sublingual artery and nerves.
- Lingual nerve.

Likely source of infection:
- Mandibular premolars.
- Mandibular molars.
- Trauma.

22. Define the anatomy of Pterygomandibular space.

Boundaries:

- Anteriorly - Buccal space.
- Posteriorly - Parotid gland with lateral pharyngeal space.
- Superiorly - Lateral surface of medial pterygoid muscles.
- Inferiorly - Inferior border of mandible.
- Medially - Laterally surface of medial pterygoid muscles.
- Laterally - Medial surface of ramus of mandible.

Contents:

- Mandibular division of the trigeminal nerve.
- Inferior alveolar artery, vein and nerve
- Lingual nerve
- Mylohyoid nerve.

23. Define the boundaries of sub massetric space.

- Anteriorly - Buccal space, parotidomassetric fascia.
- Posteriorly - Parotid glands and its fascia
- Superiorly - Zygomatic arch.
- Inferorly - Inferior border of mandible.
- Medially - Ramus of the mandible.
- Laterally - Masseter and mandible.

24. Define the anatomy of lateral pharyngeal space.

Boundaries:

- Anteriorly - Superior middle pharyngeal constricter muscle.
- Posteriorly - Carotid sheath, stylohyoid, styloglossus and stylopharyngeus.
- Superiorly - Base of skull.
- Inferiorly - Hyoid bone.
- Medially - Superior pharyngeal constrictors.
- Laterally - Medial Pterygoid muscle & capsule of parotid gland.

Contents:

- Carotid artery
- Internal jugular vein.
- Vagus nerve.
- Cervical sympathetic chain.

Likely source of infection:

– Mandibular third molars.
– Tonsillar infections.
– Pharyngitis.
– Parotitis.

25. Define the boundaries of parotid space.

- Superiorly - Zygomatic arch.
- Anteriorly - Lower border of mandible.
- Posteriorly - Retro mandibular region.

26. Define the boundaries of infra temporal space.

Boundaries:

- Superiorly - Infra temporal crest of greater wing of sphenoid bone.
- Inferiorly - Lateral pterygoid.
- Posteriorly - Mandibular condyle.
- Anteriorly - Maxillary tuberosity [infratemporal surface of maxilla]
- Laterally - Temporalis tendon, coroniod process.
- Medially - Lateral pterygoid plate.

Contents:

- Pterygoid plexus.
- Internal maxillary artery.
- Mandibular division of trigeminal nerve.

Likely source of infection:

- Maxillary molars.
- Local infiltration of maxillary nerve.

27. Define the boundaries of temporal space.

Temporal space has superficial and deep compartments.

Superficial compartment:

Laterally - Temporal fascia.
Medially - Lateral surface of temporalis muscle.

Deep compartment:

Laterally - Medial surface of temporalis muscle.
Medially - Temporal bone.

28. Define Lincoln's highway.

A viscerovascular space is the carotid sheath from the jugular foramen of carotid canal at the base of the skull to the pericardium or middle mediastinum. Infections in this spaces are usually associated with internal jugular vein thrombophlebities or carotid artery erosion.

29. Define cavernous sinus thrombosis.

- It is defined as spread of infection from the dangerous zone of the face along deep facial vein in retrograde direction.
- The infected thrombus from this region ascends along the vein against the venous stream due to absence of valves in the angular facial and ophthalmic veins, the infection spreads along the pterygoid plexus of veins reaching through the emissary veins into cavernous sinus, resulting in cavernous sinus thrombosis.

30. Define mediastinitis.

This is an infection involving the connective mediastinal tissue that fills the inter pleural space and surrounds the median thoracic regions.

31. Define supra sternal space (space of burns).

It is a potential space which lies below the level of hyoid bone where the superficial fascia splits to form two spaces.

Space 1:

It forms the roof of the posterior triangle.

Space 2:

It forms the lower part of the roof of the anterior triangle and the fascia splits to form supra sternal space are the space of burns.

Structures present:

1. Sternal head of sternocleidomastoid
2. The communication between the anterior jugular veins.
3. Lymph glands.
4. Inter clavicular ligament.

32. Classify the spread of fascial spaces.

i. Direct - (a) Maxillary space (b) Mandibular spaces.
ii. Indirect - Secondary spaces.

33. Define Osteomyelitis.

The word osseous in Latin means bony and osteon in Greek means bone and myelo means marrow and its in Greek means inflammation.

OML - is an inflammation of medullary portion of bone or bone marrow or cancellous bone.

34. Classify Osteomyelitis.

A. 1. Acute.
   2. Chronic.

B. 1. Suppurative osteomyelitis.
   2. Non - Suppurative osteomyelitis

35. Classify staging of Osteomyelitis.

I. Anatomic types.
II. Physiological types.
III. Systemic or local factors that effect the immune surveillance metabolism and local vascularity.

Anatomy types:

- Stage I medullary - OML
- Stage II superficial - OML
- Stage III localized - OML
- Stage IV diffuse - OML

36. Define Garre's screlosing osteomyelitis.

It was first described by Carl Garre (1893) it was defined as non-suppurative inflammatory process, where there is peripheral subperiosteal bone deposition caused by mild irritation and infections.

37. Define actinomycotic osteomyelitis of jaws.

It is a chronic infection manifesting both granulamatous suppurative features and usually involves soft tissues and occasionally bone.

Types:

Cervicofacial, thoracic, abdominal.

38. Define Necrotizing fasciaitis.

It is characterized by the formation of large necrotic lesions and gas formation, located in the sub cutaneous cell tissue and in the superficial fascia.

39. What is the etiology of osteomyelitis.

1. Odontogenic infections.
2. Trauma.
3. Infections of orofacial regions.
4. Infection derived by hematogenous route.

40. Define sequestrum.

Formation of dead pieces of bone from granulation tissue of new blood vessels is called sequestrum.

41. Define involucurum.

Formation of new bone around the dead pieces of bone is called involucurum, is a rare process.

42. Define cloacae.

This is characterized by perforation of the soft tissue by revascularization process through which pus escapes towards the epithelial surface.

43. Classify treatment for Osteomyelitis.

1. Antibiotics.
2. Culture and sensitivity.
3. Incision and drainage.
4. Sequestrectomy.
5. Decortication.
6. Saucerization.
7. Segmental or Enbloc resection.

44. Define sequestrectomy.

This is the process by which the entire sequestrum is removed from the soft tissue and the bone via extraoral or intra oral incision there by the cavity is exposed and almost filled with granulation tissue. The defect is packed with iodform gauze and the wound is irrigated daily.

45. Define Decortication.

It was introduced in 1917 by mowlum decortication involves removal of the chronically infected cortex, usually the buccal and the inferior border are removed 1-2 cm beyond the affected area.

46. Define segmental resection.

Excision of a part of a mandibular segment with out sparing the lower border.

47. Define Enbloc resection.

Excision of a part of a mandibular segment sparing the lower border.

48. Define hemimandiblectomy.

Excision of one side of the mandible leaving the other side intact.

49. Define Osteo-radio necrosis.

Osteoradionecrosis is an exposure of nonviable, non-healing, non-septic lesion in the irradiated bone, which fails to heal with out intervention. It is a sequelae of irradiated tissue injury, in which hypocellularity, hypovascularity and hypoxia are the underlying causes.

50. Mention the etiology behind osteoradionecrosis.

1. Hypo cellularity.
2. Hypoxia.
3. Hypovascularity.

51. Define Hyper baric oxygen therapy.

Hyper baric oxygen therapy is the intermittent and daily inhalation of 100% oxygen at a pressure greater than lithosphere absolute.

52. Define saucerization.

This is defined as cleaning of the bony cavity of removal of over hanging bony margins render the bony cavities broad, this is known as saucerization.

53. Define Hilton's methods of incision of drainage.

This method consist of opening an abscess that no blood vessel or nerve in the vicinity is damaged.

54. Define Hydro therapy.

It consist of application of cold water by means of small gauze pieces over the most indurated area there by reducing, oedema, tissue tension and aids in fast recovery.

14 Endodontic Surgery

1. **Define Endodontic surgery.**

   Endodontic surgery is defined as surgical aid to treat endodontic problems such as acute apical abscess, pulpo periodontal problems, etc.

2. **Classify endodontic surgery.**
   1. Incision and drainage.
   2. Periapical surgery.
   3. Curettage.
   4. Apicoectomy.
   5. Retrograde filling.

3. **Define periapical surgery.**

   This surgery consists of root amputation, curettage retrograde filling and api coectomy.

4. **Classify various zones of facial infection in surgical pathology [fish 1936].**
   1. Zone of infection.
   2. Zone of contamination.
   3. Zone of irritation.
   4. Zone of stimulation.

5. **Classify various surgical flaps for Endodontic surgery.**
   1. Semilunar flap.
   2. Triangular flap.
   3. Trapezoidal flap.
   4. Rectangular flap.
   5. Lubekoschben flap.

6. Define Reimplantation.

The term refers to intentional removal of tooth and its insertion into its socket after endodontic therapy and root section invitro.

7. Define Endodontic implant.

The Endodontic implant is a rigid structure which extends through the root canal into the periapical osseous tissue to lengthen teeth the existing root anchorage and to provide stability to the tooth.

8. Mention various indications for endodontic implants.

1. To reinforce the management of transverse root fracture.
2. To stabilize the over denture abutment.
3. To stabilize during auto transplantation.
4. An as adjuvant aid in pulp-periodontal therapy.

9. Classify various indications for periapical surgery.

1. Predisposing factors for the failure of conservative root canal therapy.
   a. Unfavourable curved root apex.
   b. Root resection.
   c. Accessory root canals.
   d. Cyst formation.
2. Failure following root canal therapy.
   a. In adequate or over filled root canal.
   b. Fragmentation of the instruments inside the root canal.
   c. Lateral perforation.
   d. Persistent periapical radiolucency.
3. Inaccessibility to conservative root canal therapy.
   a. Anatomical defect – densin dente.
   b. Calcified root canal.
   c. Broken R.CT. Instruments in the root canal.
   d. Non-vital teeth used as abutments for bridges.

10. Define incision and drainage.

This procedure is carried out to drain the pus and toxins from periapical lesion under antibiotic cover so that the patient is relieved of discomfort pain and swelling.

15 Tumors

1. **Define Neoplasia.**

   Abnormal uncontrolled purposeless proliferation of new cells that persist even after the cessation of original stimulus.

2. **Define papilloma.**

   Benign tumor of epithelial origin.

3. **Define carcinoma.**

   Benign tumor of malignant origin.

4. **Define fibroma.**

   Benign tumor of connective tissue origin.

5. **Define sarcoma.**

   Malignant tumor of connective tissue origin.

6. **Define pre malignant lesion.**

   A morphologically altered tissue in which cancer is more likely to occur than its apparently normal counter part.

7. **Define premalignant condition.**

   A generalized state where there is increased risk of cancer.

8. **Define carcinoma insitu.**

   Abnormal proliferative disorder of the epithelium whose architectural disorganization and histological atypia exceeds that is associated with dysplasia.

9. **Define leukoplakia.**

   Clinical whitish patch or plaque that cannot be characterized clinically or histopathologically as any other disease and is

not associated with any physical or chemical causative agent except the use of tobacco.

10. Define Erythoplakia.

Clinical lesions of the oral mucosa that present as bright red patches or plaques that cannot be characterized clinically or pathologically as any other condition.

11. Define Naevus.

It is a congenital developmental tumor like mal formation of skin or mucous membrane.

12. Define Hamartoma.

It is a clinical malformation that presents as a mass of disorganized tissue indigenous to the particular site with cessation of the growth period.

13. Define odontoma.

It is an hamartomatous growth in which both the epithelial and mesenchymal cells exhibit complete differentiation with the result that the functional ameloblast and odontoblast form enamel and dentin.

14. Define teratoma.

True neoplasm made of a number of different types of tissues that are not native to the area in which the tumor occurs. (It arises from three different tissues ectoderm endoderm mesoderm).

15. Define odontogenic tumor.

The term encompasses a wide range of neoplasms and hamartomatous growths involving tooth forming tissues [enamel organ, reduced enamel epithelium hertwig epithelial root sheath].

16. Define Ameloblastoma.

According to Robinson it is a true epithelial odontogenic tumor usually unicentric, nonfunctional, anatomically benign and clinically persistent.

17. Define Lymphoma.

They constitute a group of neoplasms of varying degree of malignancy which are derived from the basic cells of lymphoid

tissue, the lymphocytes, and the histiocytes in any of their developmental stages.

18. Define leukemia.

Disease characterised by progressive over production of white cells in an uncoordinated and independent fashion which usually appears in the circulating blood in an immature form.

19. Define oral sub mucous Fibrosis.

It is defined as a chronic insidious disease affecting any part of the oral cavity and some times pharynx, occasionally preceded associated with vesicle formation and always associated with juxtra epithelial inflammatory reaction followed by fibroblastic change of the lamina Propria with epithelial atrophy leading to stiffenes of oral mucosa causing trismus and inability to eat.

20. Define hyperkeratosis.

Abnormal thickness of the orthokeratin or Para keratin layer of a particular location.

21. Define metaplasia.

It is a reversible change of one type of epithelial or mesenchymal adult cells to another type of adult epithelial or mesenchymal cells usually in response to abnormal stimuli.

22. Define dysplasia.

It is loss in uniformity of the cells along with loss of cellular organization.

23. Define Poikilokaryosis.

It is defined as division of nucleus with the division of cytoplasm.

24. Define Grading.

It is defined as histopathological evaluation of degree to which the tumors resemble their parent tissue and produce their normal product is called grading.

25. Define staging.

It is defined as quantifying the clinical parameters of tumor size of extent of metastatic spread of tumor which indicates the patient's prognosis.

26. Define TNM classification.

T – Tumor – N – Node M – Metastasis.
T1 – Tumor 2 cm or less in greatest dimension.
T2 – Tumor more than 2 cm but not more than 4 cm in greatest dimension.
T3 – Tumor more than 4 cm in greatest dimension.
T4 – Tumor invades adjacent structures.
NX – Regional lymph nodes cannot be assessed.
N0 – No Regional lymph metastasis.
N1 – Ipsilateral single lymph node less than 3 cm.
N2a – Single Ipsilateral lymph node, greater than 3 cm not less then 6 cm.
N2b – Multiple Ipsilateralnodes up to 6 cm.
N2c – Bilateral or contralateral lymph nodes up to 6 cm.
N3 – Metastases in lymph nodes greater than 6 cm.
MX – Distant metastases cannot be assessed.
M0 – No distant metastasis.
M1 – Distant metastasis.

27. Mention the various treatment of cancer management.

1. Surgery.
2. Chemotherapy.
3. Radio therapy.

28. Define pinborg tumor.

1. Calcifying epithelial odontogenic tumor is known as pinborg's tumor.

29. Classify odontogenic tumors.

According [Gorlin chaudhry pinborg]

I. Epithelial odontogenic tumors.
II. Mesenchymal odontogenic tumors.

Epithelial odontogenic tumors.

A. Minimal inductive change in connective tissue. [Ectodermal origin]
   A. Ameloblastoma.
   B. Adenomatoid odontogenic tumor.
   C. Classifying epithelial odontogenic tumor.

B. Marked inductive change in connective tissue.
   A. Amelobastic fibroma.
   B. Ameloblastic odontoma.
   C. Odontoma.

Mesodermal odontogenic tumors

A. Odontogenic fibroma.
B. Odontogenic myxoma.
C. Cementoma.
   i. Periapical cemental dysplasia.
   ii. Benign cementoblastoma.
   iii. Cementifying fibroma.

30. Classify different types of Ameloblastoma (clinical type)?

1. Unicystic.
2. Multicystic or solid ameloblastoma.
3. Pituitary ameloblastoma.
4. Malignant ameloblastoma.

31. How do you classify ameloblastoma according to histopathology?

1. Follicular type.
2. Plexiform type.
3. Acanthomatous type.
4. Basal cell type.
5. Granular cell type.
6. Desmoplastic type.

32. Classify fibro-osseous lesions.

I Fibrousdysplasia.
- Polyostotic
- Monoostotic.

II Reactive dysplastic lesions. (periodontal ligament in origin)
- Periapical cemento – osseous dysplasia
- Florid cemento osseous dysplasia
- Focal cemento osseous dysplasia.

III Fibro-osseous neoplasms.
- Cemento ossifying fibroma.

33. Define chemotherapy.

It is a process by which neoplastic disease are treated by means of chemical substances or drugs.

34. Define radiotherapy.

It is a medical speciality concerned with the treatment of malignant disease by means of electro magnetic or particulate radiation.

35. Classify radio therapy.

1. Tele therapy.
2. Brachy therapy.

36. Define immunotherapy.

It is defined as therapeutic administration of serum or gammaglobulin containing preformed antibodies produced by another individual to destroy malignant cells. Currently new forms of immunotherapy include the use of monoclonal antibodies.
(e.g.) interferon's, interleukins.

37. Define Brachytherapy.

It is a type of radiotherapy in which the source of irradiation in place close to the surface of the body or within the body cavity.

38. Define teletherapy.

It is a type of radiation therapy administered with the source at a distance form the body.
(e.g.) interstitial therapy.

39. Define Hemangioma.

Hemangioma is a true vascular tumor that results from a neoplastic overgrowth of normal vascular tissue. Hemangioma grows by endothelial proliferation, during the rapid growth phase an increased number of mast of cells is seen within the endothelial wall.

40. Define vascular malformations.

Vascular malformations are thought to arise during interruption at a particular stage of development of a vessel.

41. Classify vascular anomalies.

I. 1. Biological behavior arterial, venous, lymphatic, combi nation capillary.
   2. A. High flow } Arterial
   3. B. Low flow }

II. Clinical appearance.
- Port wine stain.
- Strawberry lesion.
- Cherry angioma.
- Angel kiss.
- Salmon patch.

III. Histologic appearance.
Hemangioma.

42. Enumerate the diagnostic aids of Hemangioma.

Non invasive

1. OPG
2. CT
3. MRI
4. Doppler invasive.
5. Digital subtraction angiography.

43. Classify various treatment of Hemangioma.

1. Sclerosing agents.
2. Embolization
   - Temporary or absorabable.
   - Permanent – or non absorbable.
3. Surgery.

44. Classify different types of chemotherapy.

1. Combination chemotherapy.
2. Induction chemotherapy.
3. Concomitant chemo radiotherapy.
4. Adjuvant chemotherapy.
5. Palliative chemotherapy.
6. Chemoprevention
7. Topical chemotherapy.
8. Intra lesional chemotherapy.

45. Define Oncogenesis.

Oncogenesis is a multistage process involving three major process involving three major phases initiation, promotion and progression, which results in loss of differentiation increased invasiveness and ability to metastasize.

46. Define dentigerous cyst.

The dentigerous cyst by definition must be associated with the crown of an unerupted tooth, developing tooth or odontoma.

47. Define Eruption cyst.

It is a form of dentigerous cyst found in soft tissue overlying an erupting tooth. It occurs during the ages of tooth development.

48. Define lateral periodontal cyst.

They are thought to be derived form the dental lamina and are located on the lateral surface of vital tooth, unless the tooth has been rendered nonvital by dental caries or trauma un related to cyst formation.

49. Define Botryoid odontogenic cyst.

Botryoid odontogenic cyst presents as a multilocular lesion and is a special variety of the lateral periodontal cyst. Botryoid refers to grape like cluster these lesions are minimal.

50. Define Radiation Measurement.

Radiation is usually measured in gray which represents the absorption of 1 joule/kg.

51. Define one gray.

1 GY = 100CCG = 100 rad.

52. Classify surgical treatment of head of neck malignancy.

1. Maxillectomy.
2. Hemimandiblectomy.
3. Segmental resection.
4. Enbloc resection.

53. Classify Non-odontogenic tumor.

1. Central fibroma.
2. Myxo fibroma.

3. Ossifying fibroma.
4. Osteoma
5. Osteoid osteoma.
6. Benign osteoblastoma.
7. Chondroma.
8. Giant cell granuloma.
9. Central heamangioma.
10. Benign tumors of nerve tissue.

54. Enumerate various principles of surgical management of jaw tumors.

i. Enucleation.
ii. Curettage.
iii. Marsupialization.
iv. Recon touring.
v. Resection without continuity defect.
vi. Resect with continuity defect.
vii. Disarticulation.

55. List various guidelines for oral cancer therapy

Staging	*At primary site*	*Management of regional lymphnodes*
Stage 1-T2 No	Surgery or radiation	Periodical review.
Stage 2-T2No	Surgery and radiation [Chemotherapy optional]	Radiotherapy Pre or post surgical Or either surgery or radiation.
Stage III-T3N0T1N1T2-N1T3N1	Pre or post surgical radiation with chemo-therapy	Pre or post surgical radiation.
Stage IV-T1 T2 or T3 With N2, N3, N4	-do-	-do-

56. Define Field Cancerization.

Repeated exposure of the entire tissue to carcinogenic insult will increase the development of multiple independent pre-malignant foci with the concept of Field-cancerization.

16 Salivary Gland Disorders

1. **Classify salivary secretion?**
   1. Serous.
   2. Mucous.
   3. Mixed.
2. **Classify salivary gland.**
   1. Parotid gland [serous].
   2. Submandibular [mixed predominantly mucous].
   3. Sublingual [mixed].
3. **Define Anatomical opening of the parotid duct.**

   Parotid duct [stenson's duct] opening is seen as a papilla in the buccal mucosa opposite the maxillary second molar.
4. **Define Anatomical opening of Wharton's duct [submandibular duct].**

   The submandibular duct opens at the sublingual papilla in the floor of the mouth.
5. **Define salivary calculus.**

   It is defined as proteinaceous substances formed due to the obstruction of salivary flow, it is commonly seen in the salivary gland duct.
6. **Define sialorrhoea or ptyalism.**

   It is defined as excessive salivation seen in the affected patients. It can be mild intermittent or continuous profuse drooling, it can cause severe drooling, choking and social embracement to the patient.

7. Define sialolithiasis.

Sialolithiasis is the formation of sialolith (salivary calculi, salivary stone) in the salivary duct or the gland, restricting or the obstruction of the salivary flow.

8. Define sialolith.

The sialolith is a calcified mass with inorganic substance. It results from the crystallization of salivary solutes. The sialolith is yellowish white in colour, Single or multiple, may be round, ovoid, or elongated having the size of 2 cms or more in diameter.

9. Define sialadenitis.

It is defined as inflammation of the salivary gland. It may be a cute or chronic, the main etiology is due to bacterial or viral infection.

10. Define Mucocele.

It is defined as salivary sweating due to obstruction of salivary gland duct or due to trauma.

11. Classify Mucocele?

1. Extravasation type.
2. Retention type.

12. Define ranula.

It is a type of Mucocele which occurs in the floor of the mouth. Since the lesion appears like the belly of frog it is called ranula [Rana-Frog].

13. Define sialadenosis.

It is a non inflammatory, non-neoplastic.swelling of the salivary gland.

(e.g.) Auto immune disorder, diabetesmellitus, Malnutrition.

14. Define Necrotizing sialometaplasia.

It is an inflammatory lesion of unknown aetiology, which affects the minor salivary glands trauma, which leads to ischemia, acinar necrosis and squamous metaplasia of ductal epithelium is through of to be the pathogenesis.

15. Define sialography.

It is defined as specialized radiographic procedure performed for detection of disorders of the major salivary glands. The technique was described by carpy in 1902 using mercury as contrast agent the technique is employed for examination of both parenchymal (acinal) and ductal abnormalities.

16. Mention the phases of sialography.

1. Ductal phase.
2. Acinar phase.
3. Evacuation phase.

17. Classify sialographic agents.

1. Lipid soluble or oil based agents.
2. Water soluble or water based agents.

18. Classification of salivary gland diseases.

I Developmental

II Enlargement → Inflammatory
II Enlargement → Non-inflammatory.

III Cysts

IV **Tumors Benign:** pleomorphic adenoma
Warthins tumor
Basal cell adenoma.
Ductal papiloma.
Malignant: Mucoepideomoid carcinoma
Adenoid cystic carcinoma.

V Necrotizing sialometaplasia.

VI Salivary gland dysfunction.
1. Xerostomia.
2. Sialorrhea.

19. Classify salivary gland surgical procedures?

1. Superficial parotidectomy.
2. Deep parotidectomy.

20. Define salivary fistulae or sialocele.

They consist of collection of saliva under the skin flap with drainage through the wound.

17 Maxillofacial Injuries

1. **Classify the etiology behind maxillofacial injuries?**
   1. First fights.
   2. Industrial accidents
   3. Sports injuries
      (e.g.) Hockey, football, cricket, boxing injuries.
   4. Train accidents
   5. Occupational hazards
      (e.g.) Fall from a height while at work.
   6. Gun shot injuries.
   7. Miscellaneous.

2. **Define Primary care.**

   The prime concern is to keep the patient alive before instituting any definitive treatment for maxillofacial injuries.

3. **Classify primary care?**

   A - Airway
   B - Breathing
   C - Circulation
   D - Definitive treatment.

4. **Define cerebral concussion.**

   A transient state (due to head injury) of instaneous onset manifests as wide spread of symptoms with out any evidence of structural cerebral injury followed by amnesia of the actual moment of the head injury.

5. **Define Amnesia.**

   It is the form refers to loss of memory some persons may not able to remember the events before or after the accident.

6. Criteria for clinical evaluation of maxillofacial injuries?

1. Facial asymmetry.
2. Edema.
3. Occlusion.
4. Ecchymosis.
5. Loss of function.
6. Anesthesia
7. Bleeding from ear, nose of mouth.
8. CSF Rhinorrhea.
9. Neurological examination.
10. Radiological examination.

7. Classify wound healing?

1. Primary healing.
2. Secondary healing.

8. Classify different type of callus formation?

1. Anchoring callus (Periosteal).
2. Bridging callus.
3. Uniting callus.
4. Sealing callus.

Introduction to Mandible:

Mandible is a sturdy horse-shoe shaped mobile bone, located prominently among the facial bones. The configuration of the mandible varies in different areas. Basically, the bone has a lateral and a medial compact bone with an area of central spongiosa. Ramus is relatively thinner than the body. The cortex is thick in the angle and mental foramen region laterally rein forced by the external oblique ridge and lingualy by internal oblique ridge. There are bony trajectories transmit and disperse the trajectory of forces towards the middle cranial fossa by virtue of its articulation with temporal bone.

9. Classify Mandibular fractures?

1. Anatomical locations (symphysis, body, angle, ramus, condyle, coronoid)
2. Fracture in relation to site (Direct, indirect)

3. Injury condition of fractured bone fragments at the fracture site (simple, green stick, compound and comminuted).
4. Type of displacement of the fractured fragments (Favourable, unfavorable).
5. Fracture with reference to dentition (Dentulous, edentulous jaw, pediatric fracture).

10. Define simple Fracture.

It is a defined as the fracture in the bone and overlying soft tissues which are intact and the bony fragments are not exposed to the external environment.

11. Define green stick fracture.

This is an incomplete fracture of flexible bone in children only on one cortex is involved and the other is bent and exhibit minimal mobility when palpated.

12. Define comminuted fracture.

This type of fracture is involved in voilent trauma when the fragments are multiple, coughed and splintered. (e.g.) Gun shot injuries.

13. Define compound fracture.

If the fractured fragments communicate to the external environment through the wound is called compound fracture, if such fracture are communicated it is called compound comminuted fracture.

14. Define favourable fracture.

In favourable fracture the muscle pull approximates the displaced fragments, that cares the direction of muscle pull at right angle to the fracture line.

15. Define unfavourable fracture.

In unfavourable fracture the muscle pull distracts the fragments away from each other and result in displacement.

16. Define Anatomical angle.

It denotes the union where the inferior border of the mandible joins the posterior border of ramus.

17. Define clinical angle.

It represents the junction between the alveolar bone and the ramus of the mandible where the internal oblique ridge originates.

18. Define surgical angle.

It is defined as the junction between the ramus and the body where the external oblique ridge originates.

19. Define Horizontally unfavourable Fracture.

When the fracture is viewed in horizontal plane, an imaginary line in the form of an arc crossing the fracture line with the condyle as the centre of the circle (arc is defined as part of a circle) this represents the possible range of movements of ramus.

If the fracture line and arc of circle are parallel to each other, then anterior fragment is not likely to obstruct the movement of the ramus, this was considered to be unfavourable fracture.

20. Define horizontally favourable fracture.

If the imaginary line in the form of arc crosses the fracture line, then it implies that the anterior segment will present the ramus to swing upwards due to the physical obstruction caused by the body of the mandible and hence considered favourable fracture. In these type of fracture displacement masseter and medial pterygoid muscles play major role.

21. Define vertically favourable fracture.

- When angle fracture is viewed in a vertical plane. The displacement of the posterior fragment can be noticed in a medial direction by the contraction of medial pterygoid and mylohyoid muscles.
- The configuration in the bucco lingual direction determines the medial displacement of ramus.
- If the lingual plate is longer than buccal plate of body of mandible at the site of fracture, ramus is presented to move medially, muscle fragment result in close approximation it is called vertically favourable.

22. Define vertically unfavourable fracture.

In this fracture the fracture line runs in such a way that the lingual plate is shorter than buccal plate of body of mandible the ramus is pulled medially hence fragments are distracted away from each other. It is called vertically unfavourable fracture.

- HF and VF - No displacement
- HUF and VF - minimal displacement
- HF and VUF - minimal displacement in medial direction disturbing superior constrictor of dysphagia
- HUF of VUF - maximal displacement.

23. Classify Condylar Fractures?

Lindhal (1977)

I. Fracture level
   a. Condylar head fracture, intracapsular fracture
   b. Condylar neck
   c. Sub-condylar

II. Relationship of condylar fragment to mandible
   a. Undisplaced
   b. Deviated
   c. Displacement-medial, lateral
   d. Dislocated

III. Relationship of condylar head to fossa
   1. Non displacement
   2. Displacement

IV. Injury to meniscus

Maclenan (1952)

   a. No displacement
   b. Deviation
   c. Displacement
   d. Dislocation

24. Mention the diagnostic findings of condylar fracture.

1. Pain and swelling in the TMJ region
2. Deviation of mouth opening in the involved site
3. Posterior open bite on contra lateral side (Unilateral fracture dislocation)

4. Shift of occlusion toward the ipsilateral side with posterior crossbite (Unilateral fracture displacement)
5. Blood in the external auditory canal
6. Anterior open bite, posterior crossing of occlusion in bilateral condylar fracture.

25. Explain various management of condylar fracture.

1. Non surgical management
2. Surgical management

26. Classify various non surgical methods in the management of mandibular fracture?

1. Maxillo mandibular fixation or Inter maxillary fixation [IMF]
   - Direct wiring
   - Ivy eyelet wiring
   - Arch bar wiring

27. Classify surgical methods in management of mandibular fractures?

I. **Transalveolar wires.**
   1. Transalveloar wiring [upper border]
   2. Trans osseous wiring [lower border]
   3. Circum mandibular wiring.

II. **Plate fixation [Plate osteosynthesis]**
   A. Compression plate osteosynthesis
   B. Mini plate osetosynthesis

III. **Osteosynthesis using lag screws.**

28. Enumerate the advantage of bone plating osteosynthesis.

1. Rigid or stable fixation
2. Advantages in mentally retarded and physically handicapped patients
3. Soft diet can be taken orally
4. Maintenance of oral hygiene
5. Maintanence of airway in multiple fractures.

29. Define Bucket handle type of fracture.

This type of fracture is seen in atrophic edentulous mandible

which is resorbed in front of the posterior attachment of mylohyoid muscle.

30. Define cold man sign.

Sublingual ecchymosis which is seen in mandibular fracture.

31. Classify various surgical approaches to mandibular fracture.

1. Intra oral [body, angle, ramus, transbuccal]
2. Extra oral [submandibular, preauricular]

32. Classify complications of mandibular fractures.

I. Immediate
   1. Nerve injury.
   2. Infection
   3. Displaced teeth of foreign bodies.

II. Late complications
   1. Malunion
   2. Non-union
   3. Delayed union.

33. Classify management of edentulous fracture of the mandible?

1. Gunning type of splint with circumferential wiring.
2. Open reduction and interosseous wiring.
3. Open reduction and plate fixation.
4. Extra oral pin fixation.

FRACTURES OF THE MIDDLE THIRD OF FACIAL SKELETON

Anatomy

The middle third of the face is bounded superiorly by a transverse line joining the fronto Zygomatic, frontomaxillary, and frontonasal suture along the supra orbital margins. Inferiorly it is limited by the occlusal plane of the maxillary teeth. Posteriorly it is bounded by the sphenoethmoidial junction. How ever it includes the pterygoid plates of the sphenoid bone postero inferiorly.

The bones which constitute middle third of facial skeleton are grouped into paired and unpaired bone.

Paired	*Unpaired*
1. Maxilla. 2. Palatine bones. 3. Zygomatic bones. 4. Zygomatic process of temporal of Temporal bones. 5. Lacrymal bones. 6. Nasal bones. 7. Inferior concha.	1. Vomer. 2. Ethmoid 3. Sphenoid

34. Classify middle third fractures?

I Fractures not involving occlusion.
  A Central region (nasoethomoidal complex)
  B Lateral region (Zygomatic complex)
II Fracture involving dentition
  Dentoalveolar and Lefort fractures.

35. Define Lefort 1 fracture (Guerin fracture, lower level fracture horizontal fracture).

They are called horizontal fracture because of the horizontal direction of the fracture line and low level fractures, since they involve the lower portion of maxilla. The fracture line runs along the apex of all maxillary teeth involving the lower third of nasal septum lower thirds of the pterygoid plates, and the associated portions of the palatine process.

36. Define Lefort II fracture. (Pyramidal fracture or mid level fracture).

The mobile fragment is pyramidal in shape, the fracture line runs from nasal bridges crosses orbital rim, at junction of lateral 2/3 rds and medial 1/3rd of infraorbital foramen, it also passes Zygomatic maxillary suture line on the lateral wall of maxillary sinus it extends. Posteriorly crossing the pterygoid plates. The fracture line runs below the Zygomatic region the entire mid-face is edematous with sub conjunctival hemorrhage and CSF rhinnorhea.

37. Define Battles sign.

Battles sign is characterized by Ecchymosis along the course of posterior auricular artery in the mastoid region and rise in body temperature.

38. Define Lefort III Fracture (transverse or high level fracture).

Craniofacial dysjunction, where the fracture line runs parallel to the base of the skull separating the mid facial skeleton from the skull base, the fracture line crosses the ethmoid, lesser wing of sphenoid, and may even involve optic foramen to reach the pterygo maxillary fissure. Thus it is supra Zygomatic with elongated face, and anterior open bite (Dish Face deformity).

39. Classify signs and symptoms of Lefort fractures?

1. Pain or tenderness
2. Facial deformity
3. Ecchymosis
4. Epistaxis
5. Otorrhea
6. Anesthesia
7. Malocclusion
8. CSF Rhinorhea
9. Decreased mouth opening
10. Gagging sensation of throat.

40. Classify management of middle third fractures?

A. External fixation.
   1. Plaster of Paris head cap.
   2. Halo frame.

   Extra oral fixation.

Cranio maxillary:

- Fixation between the skull and maxillary fixation this is a rigid direct suspension of detached middle third of facial skeleton, which is achieved by connecting the maxillary arch bars to an external head gear.

Cranio Mandibular:

- Fixation between the mandilbular arch of the skull is termed craniomandilbular fixation. The fractured area of the middle third of face, is sandwiched between intact skull and rigid mandible this is achieved by.
  1. Connecting mandilbular splint to a pop head cap via an anterior protecting bar of vertical rod.

2. Bilateral transbuccal wires from the head caps to mandibular arch bar.
3. Halo frame.

Internal fixation:

This type of fixation is achieved entirely or primarily by passing wires within the tissues.

- Direct suspension.
- Indirect support.
- Transosseous or intra osseouswiring.

41. Define pure blow out fracture.

Fractures of floor of the orbit without the involvement of the orbital rim are called pure blow out fractures.

42. Define impure blowout fracture.

- Fractures involving the infra orbital rim with other compartments of orbit is known as impure blowout fracture.

Anatomy of Zygomatic Bone

- The zygoma is a major buttress of the facial skeleton is the principal structure of the lateral mid face the zygoma is the four sided pyramid which has temporal, orbital, maxillary and frontal process that articulates with four bones namely frontal, sphenoid, maxillary and temporal bone respectively.

43. Classify Zygomatic complex fracture?

According to radiological classification [water view]

- Group I - No significant displacement.
- Group II - Zygomatic arch fractures.
- Group III - Unrotated body fractures.
- Group IV - Medial rotation.
- Group V - Lateral rotation.
- Group VI - Complex fractures.

44. Classify clinical features of Zygomatic complex fracture?

1. Fattening of cheek.
2. Periorbital edema of ecchymosis.
3. Sub conjunctival hemorrhage [blood shoot eye].

4. Unilateral epistaxis.
5. Infra orbital anesthesia.
6. Trismus.
7. Diplopia.

45. Classify diagnostic aid in the management if Zygomatic complex fracture?

1. Waters view (maxillary sinus view)
2. Caldwell luc view (rotation around longitudinal axis)
3. Submento vertex (rotation around vertical axis)
   - Zygomatic arch fracture
   - Posterior displacement
   - Medial and lateral rotation around the longitudinal axis)

46. Classify treatment of Zygomatic complex fracture?

1. No treatment.
2. Indirect reduction and fixation
   - Towel clamps.
   - Gilles temporal approach.
3. Direct reduction and fixation
   - Upper buccal sulcus approach.
   - Lateral coroniod approach.
   - Lateral eye brow approach.
   - Percutaneous approach.
   - Antral pack via caldwell luc approach.

47. Classify nasoethmoid fractures?

I. Degree: Involving nasal bones/septum
II. Degree: Involving nasal bones of frontal process of maxillae.
III. Degree: Involving I, II and ethmoid bone
IV. Degree: Involving I, II, III and frontal bones (frontonaso ethmoidal)

48. Classify clinical features of naso ethmoial fractures?

1. Epistaxis.
2. Prominent epicanthal fold.
3. Traumatic telecanthus.
4. CSF Rhinorrhea.

49. Mention the diagnostic aids of naso ethmoidal fracture.

1. Lateral cephalogram.
2. True nasal view.
3. PNS view.

50. Classify various treatment modalities of nasoethomoidal fracture?

1. Closed reduction [walsham of ash nasal septal forceps)
2. Open reduction [open sky approach].

51. Define concussion.

An injury to the periodontal tissues without abnormal loosening or displacement of the tooth but with marked reaction to percussion of the tooth.

52. Define subluxation.

An injury to the periodontal tissues with abnormal loosening but without displacement of the tooth.

53. Define Dislocation.

Displacement of the tooth into the alveolar bone accompanied by comminution of fracture of the alveolar socket.

54. Define Avulsion.

It is defined as complete loss of tooth from the socket.

55. Define plate.

Plate is defined as a metallic or non metallic device which reduces torsional and shear forces during fracture management.

56. Define screw.

Screw is defined as metallic or non metallic device which is used to reduce the fracture by means of interfragmentary pressure.

57. What are the parts of the screw?

- Thread
- Shaft
- Flute
- Tip.

18 Orthognathic Surgery

Orthognathic surgery is the art and science of diagnosis treatment planning and execution of treatment by combining orthodontics and oral and maxillofacial surgery to correct musculoskeleton, dentoosseous, soft tissue deformities of the jaws and associated structures.

1. **Define orthodontic surgery.**

   Orthodontic surgeries broadly refers to the role of surgery in achieving the objectives of orthodontic treatment it includes surgical aids in orthodontics and orthodontic surgery.

2. **Classify surgical aids?**

   1. Serial extraction.
   2. Therapeutic extraction.
   3. Urerupted teeth.
   4. Removal of impediments.
   5. Diaestema.
   6. Corticotomy.

3. **Define Diaestema.**

   The term median diaestema refers to the persistence of the space between the two maxillary central incisors.

4. **Classify surgical orthodontic aids?**

   1. Clinical evaluation.
   2. Dental analysis.
   3. Cephalometric analysis.
   4. Model analysis.

5. Classify mandibular skeletal morphology?

i. ***Mandibular excess*** (protrusion)
   a. Unilateral
   b. Bilateral

ii. ***Open bite deformity***
   a. With mandibular excess.
   b. Without mandibular excess.
   c. With maxillary excess.

iii. ***Mandibular deficiency*** (retrusion)
   a. Unilateral.
   b. Bilateral.

iv. Combination with maxillary deficiency

v. Bilateral mandilbular and zygomatic deficiency.

6. Classify etiology of mandibular skeletal deformity?

I. ***Congenital anomalies of condyle***
   a. Macrognathia
   b. Micrognathia.
   c. Aperthognathia.
   d. Agenesis of condyle.

II. ***Inherited anomalies***
   a. Condylar hyperplasia.

III. ***Initating factors for acquired anomalies***
   a. Trauma to condyle.
   b. Infection of condyle
   c. Abnormal habits.
   d. Radio therapy.

IV. ***Pathologic anomalies***
   a. Neoplasm
   b. Endocrine disorder
   c. Fibrous dysplasia cherubism.

7. Classify Cephalometric radiographic reference points?

- **S –** (sella turcia) – Geometric mid point of pituitary fosse.
- **N** (nasion) – Deepest concavity of the fronto nasal suture in midsaggitalplane. The inclination of SN line remains essentially un charged through out eye. Hence it can be used as a constant reference point against which maxillo mandibular deviations can be measured.

- **A** (subspinale) – point of deepest concavity on the maxillary alveolar ridge (at the midline) in the mid sagittal plane.
- **B** – (supra mental) – point of deepest concavity on the mandibular alveolar ridge at the mid line.
- **Gn** – (Gnathion) – the most anterior inferior point on the convexity of the mandibular body at the midline.
- **MP** (mandibular plane) – a plane constructed from menton to the angle of the mandible.
- **Me** (Menton) – the lower part of the contour of mandilbular symphysis.
- **Go** (Gonion) – the most posterior inferior point on the convexity of the mandibular symphysis.
- Angle this can be located by bisecting posterior ramus plane of mandibular plane angle.
- **Pog** (Pogonion) – the most anterior point on the convexity of the mandibular body at the Mid line.
- **ANS** (anterior nasal spine) – the most anterior point of the nasal floor and the tip of the pre maxilla in the midline.
- **PNS** – (posterior nasal spine) – the most posterior point on the contour of the palate.
- **AIS** – line drawn through the incisal tip and root apex of the maxillary central incisor as it appears in the radiograph.
- **BIS** – Line drawn through the incisal tip and root apex of the mandibular central incisor as it appears in the radiograph.
- **SNA** angle – the degree of variation from the preserved norm indicates maxillary. Prognathia or retrognathic 82 ± 2.
- **SNB angle** – The degree of variation from the prescribed norm indicates the mandibular prognathia or retrognathia 80 ± 2.
- **ANB angle** – Indicates maxillo mandibular relationship (SNA – SNB).
- **Frank fort horizontal plane** – this plane is constructed from porion to orbitale for comparison of base line date. Most of the projections are made either parallel or perpendicular to angle to horizontal plane.

- **Horizontal plane –** (H- P plane)
- This plane is constructed at an angle 7°. SN Plane.

SN Plane:

- This plane is constructed from sella to nasion.

FRONTAL VIEW

Lip incompetence

Measured from upper lip stomion to lower lip stomion with lip in repose and teeth incenrtic occlusion (0-3 mm).

Smile line:

During smiling the vermilion of upper lip should fall at cervico gingival margin not more than 1 to 2 mm of exposed gingiva patient should be associated to give full smile to detect gummy smile.

1. Normal intercanthal distance 32 ± 3 mm
   Normal interpupillary distance 65 ± 3 mm
   Inter canthal distance alar base width and palpebral width should all be equal.

Face is divided into:

- Upper third – Hareline to glabella.
- Middle third – Glabella tosubnasale.
- Lower third – subnasale to soft tissue menton.
- Lower third can be divide into –
- Lower 1/3rd – subnasal to upper lip stomion.
- Lower 2/3rd – lower lip stomion to soft tissue menton.

LATERAL VIEW

Naso labial angle

The angle formed by a tangent to the columella of the nose (base of the nose) and the upper lip tangent. This angle is a further aid in planning maxillary surgery. Value less than 90º acute in class II, Value of 114º is of obtuse as in class III normal value - 90-110º.

Chin angle

The angle formed between the nasion – pogonion line (NPG) to the true horizontal line (TH) it is a very reliable measure of chin prominence or its retrusiveness or chin deficiency.

Inter incisal angle

This is an angle formed by a line passing through the incisal edge and apex of the root of the maxillary and mandibular central incisor value less than 115° indicates upper lip protrusion. More than 150° - retrusion.

Incisor mandibular plane angle

It is an angle formed by a line passing through the axis of the lower incisor to the mandibular plane value less than 90° mandibular incisor protrusion. Value<110° upper incisor retrusion >110° upper incisor protrusion.

Facial contour angle

It is a measure of relative concavity or convexity of facial profile. Normal range 8 to 11, this angle is formed between the upper facial contour plane of upward extension of lower facial contour plane. The angle is anterior to the upper facial contour plane the measurement is quoted as negative.

Lip position

The upper lip should protrude a head of the lower facial contour plane by 3.5 mm the lower lip should protrude by 2.2 mm.

Lower lip chin throat angle

The angle between a line drawn from lower lip to the soft tissue pogonion and a line drawn tangent to the soft tissue contour below the body of mandible normal angulation 110° ± 8° large angulation shows recessive chin, while low angulation shows excess chin.

The chin throat length

The distance between the angle of the throat of soft tissue menton. Normal 5 mm ± 6 mm. increased value indicates mandibular prognathism, associated with concave face, acute lower lip, chin throat angle.

8. Define osteotomy.

Osteotomy is defined as simple splitting of bone.

9. Define ostectomy.

It is defined as removal of a part of bone.

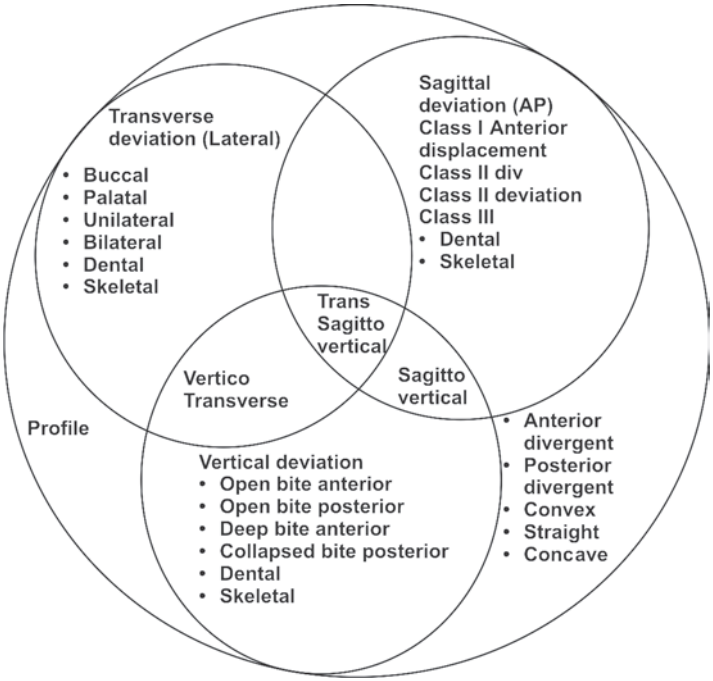
10. Classify dento fascial deformity?

a. Antero posteroplane.
b. Vertical plane.
c. Trans verse plane.

11. Classify different types of skeletal dentofacial deformities?

1. Mandible Excess: Mandibular prognathism.
   - Deficiency: Mandibular retrognathism.
2. Maxilla Excess: Vertical maxillary excess. (VME)
   - Deficiency: Vertical maxillary deficiencies. (VMD)
3. Combination
   - Bimaxillary protrusion.
   - Nasomaxillary hypoplaisa associated with prognathic mandible.
   - Nasomaxillary hypoplasia associated with cleft lip and plate.
4. Facial asymmetry
   - Asymmetric prognathic mandible
   - Unilateral condylar hyperplasia.
   - Hemfacial hypertrophy.

12. What is ackermann and profit classification?



13. Mention the various phases in the treatment planning of orthognathic surgery.

- Phase I – Diagnosis of data base collection.
- Phase II – Tentative treatment plan/patient team conference.
- Phase III – preparatory phase, endo, perio, prosthetic definitive ortho – surgical treatment.
- Phase IV – maintence.

14. Classify various maxillary osteotomy procedure?

A. Segmental maxillary osteotomy
   a. Single tooth dentoosseous osteotomy.
   b. Interdental osteotomy
   c. Anterior maxillary osteotomy.
   d. Posterior maxillary osteotomy.

B. Total maxillary surgery lefort I osteotomy.
   a. Superior repositioning of maxilla.
   b. Superior repositioning of the maxilla leaving nasal floor of maxilla intact.
   c. Advancement of maxilla simultaneous expansion of maxilla simultaneous narrowing of maxilla.
   d. Inferior repositioning of maxilla.
   e. Leveling of maxilla.

15. Classify mandibular body osteotomy?

i. Mandibular body osteotomy.
ii. Segmental subapical mandibular surgery.
iii. Genioplasty.

Mandibular ramus osteotomy

I. Subcondylar osteotomy.
II. Intra oral modified sagittalsplit osteotomy.

19 Temporomandibular Joint Disorders

1. **Define temporomandibular joint.**

   It is a highly specialized snynovial, diarthroidal non-weight bearing joint, both the joints are independent.

2. **Mention various types of movement in temporomandibular joint.**

   - Upper joint cavity has gliding movements while lower joint cavity has hinge movements.
   - Protrusion, retrusion, opening, closing, side to side.

3. **Classify various diseases of temporomandibular joint?**

   I - Joint disorders

   A. Deviation (disc thinning of perforation).
   B. Disc displacement (with or without reduction).
   C. Disc displacement of disc condyle complex (hyper mobility of dislocation).
   D. Inflammatory conditions (capsulitis and synovitis, retro discitis).
   E. Degenerative disease (osteo arthritis, poly arthritis).
   F. Ankylosis (fibrous, bony).

   II - Masticatory muscle disorders

   A. Acute (myositis, muscle spasm).
   B. Chronic pain (myofacial pain, hypertrophy).

   III - Congenital and developmental disorders

   1. Condylar hyperplasia
   2. Hypoplaisa
   3. Aplasia

4. Define Ankylosis.

Ankylosis is a Greek word meaning "stiff joint" it also denotes abnormal immobility and consolidation of the joint.

5. Classify Ankylosis.

1. Kazanjian - true false.
2. Fibrous bony ankylosis, fibroosseous.

6. Mention various etiology of pathogenesis of ankylosis.

1. Trauma.
2. Infection.
3. Degenerative arthritis.

7. Describe various clinical features of ankylosis.

1. Malocclusion.
2. Prominent antegonial notch on the affected side.
3. Restricted mouth opening.
4. Fore shortening of wide ramus on affected side.

8. Classify various radiographs for TMJ disorders?

1. Lateral oblique view, OPG.
2. Cephalometric radiograph.
3. Submentovetex view.
4. Transcranial, transorbital, transpharyngeal view.
5. Tomogram.

9. Describe various protocol for ankylosis.

1. Aggressive resection of ankylosis.
2. Ipsilateral coronoidectomy.
3. Contralateral coronoidectomy.
4. Interpositional arthoplasty.
5. Reconstruction of the joint with costochondral graft.
6. Rigid fixation of the graft.
7. Early mobilization and active physiotherapy.

10. Mention various surgical approaches to TMJ ankylosis.

1. Pre auricular.
2. Risdon's submandibular approach.
3. Post auricular.

4. Endaural approach.
5. Retromandibular approach.
6. Temporal approach.

11. Define internalderangement.

They are defined as malrelationship of the meniscus to the condylar head and the articular eminence.

12. Classify etiology of internalderangement?

Macro trauma, micro trauma myofacial pain due to bruxism. occlusal disharmony.

13. Classify internalderangement?

a. Initial stage: Anterior displacement of disc with reduction.
b. Intermediate stage: Anterior displacement of the disc without reduction.
c. Terminal stage: Anterior displacement of disc with perforation of the disc.

14. Classify clinical features of internalderangement?

1. Occlusal disharmony.
2. Midline deviation.
3. Clicking with pain of mouth opening confirmed by auscultation.
4. Pain on the joint region of muscle of mastication.

15. Mention various treatment protocol for management of internalderangement.

1. Intra articular infection.
2. Arthroscopy, arthocentesis lavage.
3. Supportive therapy.

A. Appliances [splints]
   a. Stabilization splint.
   b. Repositioning splint.

B. Physiotherapy
   a. Joint mobilization
   b. Movement education.

Surgical movement

1. Menisectomy.
2. High condylectomy.
3. Condylectomy.
4. Capsular plication.
5. Eminectomy.
6. Temporalis fascia sling.
7. Plication of capsule.
8. Condylotomy.

16. Define dislocation.

When the mandibular condyle is displaced anteriorly the articular eminence is known as dislocation.

17. Define subluxation.

When the mandibular condyle is self reducible and liberally moves back to the glenoid fossa it is known as subluxation.

18. Enumerate various etiology for subluxation.

1. Integrity of ligaments associated with the joint is lost.
2. Bony architecture of joint surfaces.
3. Activity of the musculature acting on the joint.

19. Classify various clinical features of subluxation?

1. Inability to close the mouth.
2. Tense, spasmatic muscles of mastication.
3. Preauricular depression.
4. Severe pain of joint.

20. Classify various treatment of temporal mandibular joint dislocation?

1. Chemical capsulloraphy (alcohol, 5% sodium psyillate, sodium morrhuate).
2. Dautrey procedure.
3. Alteration of Musculature. (injection of botolinum toxoid).
4. Capsular Plication.

21. Define myofacial pain functional disorder.

Myofacial pain dysfunction is a pain disorder in which unilateral pain is referred from the trigger points in myo facial structures to the muscles of the head and neck. Pain is constant dull in nature, in contrast to the sudden sharp, shooting, intermittent pain of neuralgias (chronic pain) but the pain may range from mild to intolerable.

22. Define Temporomandibular joint arthroscopy.

TMJ arthroscopy consists of insertion of specially designed fiber optic endoscope into the joint compartment for observation (diagnostic) and therapeutic purpose. It was made popular by ohnishi in 1975, with the development of a 1.7 mm diameter needle type arthroscope.

20 Preprosthetic Surgery

1. **Define Oral and maxillo facial prosthesis.**

   Prosthesis is the replacement of missing teeth (lost or congenitally absent) and contiguous oral and maxillo facial tissues, with artificial substitute.

2. **Define Pre prosthetic surgery.**

   It is defined to reform and redesign soft/hard tissues, by eliminating biological hinderances to receive comfortable and stable prosthesis.

3. **Define the aim of pre prosthetic surgery.**

   1. Provide adequate bony tissue support for the placement of RPD/CD removable partial denture or complete denture (optimum ridge height, width and contour).
   2. Provide adequate soft tissue support, optimum vestibular depth.
   3. Elimination of pre-existing bony deformities.
   4. Correction of maxillary and mandibular ridge relationship.
   5. Elimination of pre-existing soft tissue deformities.
   6. Relocation of frenal/muscle attachments.
   7. Relocation of mental nerve.
   8. Establishment of correct vestibular depth.

4. **Classify pre prosthetic surgical procedure?**

   1. Ridge preservation procedure.
   2. Ridge extension procedure.
   3. Ridge augmentation procedure.

5. Define Alveolectomy.

Surgical removal or trimming of the alveolar process is termed as alveolectomy.

6. Define Alveoloplasty.

Alveoloplasty refers to surgical recontouring of the alveolar process. This contouring is done with the purpose to take care of bony projections, sharp crestal bone or under cuts.

7. Classify Alveoloplasty?

1. Simple alveoloplasty.
2. Intraseptal alveoloplasty/deans alveoloplasty with repositioning of labial cortical bone.
3. Obwegeser modification of intra septal alveoloplasty.
4. Alveoloplasty after the post extraction healing.

8. Define exostosis or tori.

Torus is exostosis are overgrowth of cortical, cortico cancellous bone which is localized to particular area, usually benign and asymptomatic and show growing orgin is unknown.

9. Define frenectomy.

Frenectomy is defined as detachment of a thin band of fibrous tissue and a few muscle fibrous covered by mucous membrane.

10. Define Lingual frenectomy.

It is defined as detachment of lingual frenal fibers attached to the crest of the alveolar ridge which connects to the tongue, in edentulous patient it is found below the tip of the tongue, in dentulous patient it is attached to the lingual gingiva behind the mandibular incisors.

11. Classify ridge extension procedure?

- Labial vestibular procedures – trans positional flap vestibuloplasty or lip switch.
- Kazanijian technique.
- Godwin's modification.
- Clark's technique.
- Obwegesser's modification.
- Lingual vestibuloplasty.

- Traunerstechnique.
- Caldwell's technique.

12. Classify ridge augmentation procedures?

1. Superior border augmentation.
2. Inferior border augmentation.
3. Inter positional bone grafts.
4. Visorosteotomy.
5. Modified visor

13. Define visorosteotomy.

Visorosteotomy consists of central splitting of the mandible in buccolingual dimension and the superior positioning of the lingual section of the mandible, which is wired in position.

14. Define modified visorosteotomy.

Modified visorosteotomy consists of splitting of mandible buccolingually by vertical osteotomy only in the posterior regions and a horizontal osteotomy in the anterior region.

The posterior lingual segments are then pushed superiorly on both the sides and anterior fragment is also pushed superiorly and fixed with wires to the posterior is mobilized lingual segments.

15. Define sinus lift procedure or sinus grafting.

It is mainly used to assist with the placement of osseointe grated implants in the posterior maxilla. Sinus lining at the floor is lifted up surgically, the bone graft is placed between the sinus lining and the inner aspect of the alveolar crest or floor of the maxillary sinus in the posterior maxilla.

16. Classify alveolar ridges?

- Class I – The height of the alveolar ridge is adequate but the width is in adequate. It may also exhibit significant under cut areas.
- Class II – Ridge is deficient in height and width (e.g. knife ridge.
- Class III – Ridge is resorbed up to the level of the basal bone.
- Class IV – Ridge resorption into the basal bone resulting in concave ridge. It is severe enough that it may even predispose to pathological fracture.

21 Recent Advances

1. Define cleft lip.

The dictionary meaning of cleft is a crack, fissure, split or a gap.

The oro facial clefts are congenital deformities, which manifest at birth, any disturbance during the embryological formation and development of growth or orofacial region will result in the formation of orofacial clefts. They are also seen in cranio facial birth defects.

2. Mention the zones of orofacial cleft.

1. Upper lip
2. Alveolar ridge.
3. Hard palate.
4. Soft palate.
5. Nose.
6. Eyes.

3. Classify the etiology of cleft lip and palate?

The main etiology in cleft lip is failure of fusion of lateral nasal process and medial nasal process. clefts of the secondary palate is due to failure of the palatine shelves to fuse together.

4. Classify cleft lip of palate?

A. Davis and Retchie classification [1922]

- Group I Pre alveolar clefts (unilateral, bilateral of median).
- Group II Post alveolar cysts.
- Group III Complete alveolar clefts (unilateral bilateral of median).

B Veau [1931]

- Group I Cleft of the soft palate only.
- Group II Cleft of hard and soft palate.
- Group III Complete unilateral cleft, extending from a uvula to incisive foramen and then deviates to one side extending through the alveolus.

5. What are the aims and objectives of management of cleft lip and palate?

1. To correct the birth defect surgically, so that patient can have acceptable facial aesthetics.
2. To permit intelligible speech.
3. To correct the dentition to allow normal function and aesthetics.

6. Mention the protocol for cleft lip and palate patient.

1. Immediately after birth pediatric consultation, counseling, feeding instructions, evaluation, geneticist.
2. First few weeks of time-team evaluation, include hearing testing.
3. 10-12 week's surgical repair of lip 3-6 months in India.
4. Before age 1 year to 18 months team evaluation and surgical repair of cleft palate and placement of pressure evaluation tube.
5. Three months after palate repair-team evaluation for speech and language assessment.
6. Three to six years-team evaluation, Medical, speech therapy, middle ear infection, fistula repair, soft palate, lengthening.
7. Five to six years-lip nose revision, if necessary pharyngeal surgery.
8. At seven years-orthodontic treatment phase I.
9. Nine to eleven years-pre alveolar bone grafting.
10. Twelve years-full orthodontic treatment.
11. Fifteen to eighteen years-end of orthodontic treatment placement of implants fixed bridge for missing teeth.
12. Eighteen to twenty one years-Growth completion period, surgical advancement of maxilla.
13. Final nose and lip revision-Rhinoplasty 16-18 years.

7. Mention the management of cleft lip surgery.

A. Unilateral cleft lip.
   1. Millard rotational advancement flap.

B. Bilateral cleft lip.
   1. Delaire technique.
   2. Tennision randall.
   3. Rose Thomson.

Cleft palate

1. Von langen back's palatoplastly.
2. Ward will kilner procedure.

IMPLANTOLOGY

1. Define osseo integration.

A direct structural and functional connection between the living bone and the surface of the load bearing implant.

2. Define Implant abutment.

The component attached to the implant that supports the prosthesis (interface between the implant and the prosthesis) Tran mucosal abutment passes through the mucosa overlying the implant.

3. Define Abutment screw.

A screw used to connect the abutment and the implant.

4. Define End osseous implant.

A device inserted into the bone to support the prosthesis. In case of dental implants it refers to the "root" analogue of the tooth.

5. Define single stage implant.

An implant that is left exposed to the oral cavity following its surgical insertion. It is also called non-submerged implant.

6. Define two stage implant.

An implant that is left buried under the mucosa during the initial surgical placement and subsequently exposed during a

second procedure, after a few months. It is also called submerged implant.

7. Classify Implants?

1. Dependens on implant tissue interface:
   a. Direct bone-implant interface.
   b. Indirect interface.
2. According to design and location:
   a. Submucousal.
   b. Supra periosteal.
   c. Endosseous.
   d. Transosseous.
3. Based on function:
   a. Retentive
   b. Supportive.
4. Based on implant material:
   a. Metallic implants.
   b. Polymer implants.
   c. Ceramic implants.
   d. Vitreous carbon implants.

8. Mention a few indications of implant selection.

1. Single tooth replacement.
2. Multiple teeth replacement.
3. Replacement of both edentulous jaws.
4. Multiple teeth replacement with free and edentulous area.

9. Mention contra indications for implant selection.

1. Systemic contraindications.
2. Presence of pathology within the bone.
3. Patients with bad oral hygiene and habits like smoking, chewing, etc.
4. Anatomic limitations like inferior dental canal.

10. What are the criteria for implant success?

1. Biocompatibility of implant material.
2. Nature of the implant tissue interface.
3. Status of the implant bed in the context of quality of bone on absence of infection.

4. Surgical technique.
5. Undisturbed healing phase.
6. Prosthetic design and long term loading phase.

11. Define bone graft.

Bone graft is defined as bone transposed from the donor to recipient site without anastamosing with the nutrient blood vessels.

12. Classify different types of bone graft?

1. Auto graft.
2. Homo graft.
3. Isograft.
4. Hetrograft.
5. Allograft.

13. Define Auto graft.

It denotes the graft has been derived from the same person from anatomical site to another.

(e.g.) bone graft, skin graft, tooth bud, tube pedicle, soft tissue flaps.

14. Define Homograft.

It denotes that the graft has been derived from another person of the same species differing in genetic disposition.

(e.g.) blood transfusion.

15. Define Iso graft.

It denotes that the graft has been derived from a person of the same species and genetic disposition.

16. Define Hetero graft.

It denotes that the graft has been derived from another species of different genetic disposition.

17. Define allograft.

It denotes the non-biological materials like plastics, metallic alloys, silastics, etc.

(e.g.) titanium implant root analogue.

18. Define donor area.

The area from where the graft is obtained is called donor area.

19. Define recipient area.

The area where the graft is placed is called recipient area.

20. Mention various indications for bone grating.

1. To fill defect bony cavities in large cysts.
2. To increase the height of the alveolar ridge in pre prosthetic surgery.
3. To treat non-united fractures.
4. Reconstructive surgery.
5. Orthognathic surgery.
6. Ankylosis of temperomandibular joint surgery.

21. Define distraction osteogenesis.

It is the process of generation of new bone in a gap between two bone segments in response to the application of graduated tensile strength across the gap.

22. Classify various stages of distraction.

1. Osteotomy.
2. Latency.
3. Distraction.
4. Consolidation.
5. Remodeling.

23. Mention the indications of contraindications distraction osteogensis.

A. 1. Congenital deformities (Micrognathia hemifacial microcomia)
   2. Acquired deformities (TMJ Ankylosis)

B. Contraindications
   1. Adequate bone is not available.
   2. Lack of patient co operation.

24. Classify various complication of distraction osteogenesis.

a. Pin infection.
b. Pin loosening.
c. Delayed union.

d. Fibrous union.
e. Relapse.

25. Define piezo electric surgery.

It is a new osteotomic and osteoplastic, innovative technique that uses piezo electric ultrasonic vibrations. It can perform precise and safe osteotomies due to its characteristics of a micrometric and selective cut that contracts with the traditional hard and soft tissue management methods with rotating instruments.

26. Define photo dynamic therapy.

The technique involves using anon-toxic photosensitizing agent that once inside the body is selectively absorbed or retained by malignant tissue. Then on exposure to light of an appropriate wave length (that both penetrates the tissue and activates the photosensitizing agent) releases toxic substances that selectively destroy the malignant tissue by leaving the normal surrounding tissue undamaged.

27. Define Endoscopic sinus surgery recent advances.

Endoscopic sinus surgery now reknown as functional endoscopic sinus surgery that has increased in popularity and is a substitute for some more extensive sinus procedure.

FESS (Functional Endoscopic Sinus Surgery) is a minimal invasive therapy to open normal sinus ostia more widely and to ensure adequate drainage from the sinuses and thus alleviate recurrent infection, thus under direct vision the maxillary sinus ostia can be enlarged, specific ethmoid cells, and sphenoid cells are widely opened and drained.

28. Define peri-implantitis.

It is defined as inflammatory process affecting the tissues around an osseointegrated implant in function, resulting in loss of supporting bone.

29. Define stemcells.

Stemcells are derivatives of Haemopoietic system which consists of bone marrow transplantation and peripheral cell transplantation in modern cancer treatment.

22 Miscellaneous

1. **Define trigeminal neuralgia.**

   It is defined as sudden, usually unilateral severe, brief, stabbing, lancinating, recurring pain in the distribution of one or more branches of the fifth cranial nerve. It is also called as tic douloureax, Father gill disease.

2. **Mention the various aetiology of trigeminal neuralgia.**

   1. Vascular factors.
   2. Mechanical factors.
   3. Anatomy of superior cerebellar artery.
   4. Infections.
   5. Ratners jaw bone cavity.
   6. Multiple sclerosis.
   7. Post traumatic neuralgia.
   8. Intra cranial tumors.
   9. Intra oral vascular abnormalities.
   10. Viral etiology.

3. **Explain briefly the management of trigeminal neuralgia?**

   1. Medical.
   2. Surgical.

4. **Classify medical management of trigemminal neuralgia?**

   1. Carbamazepine.
   2. Intra muscular morphine.
   3. Trichloro ethylene.
   4. Diphenyl hydantion sodium.

5. Mention in detail about extracranialy treatment of neuralgia.

1. Alcohol block in peripheral nerve.
2. Nerve section and avulsion.
3. Electro surgery.
4. Cryosurgery.
5. Radio frequency thermo coagulation.

6. Enumerate various neurectomy procedures.

1. Supra orbital.
2. Infra orbital.
3. Lingual.
4. Inferior alveolar Gin Walla's technique]
5. Braun's trans oral approach.

7. Classify various intracranial surgical procedures for neurectomy?

1. Alcohol blockade C gasserian gangilon.
2. Radio frequency thermocoagulation of gasserian ganglion.
3. Hetrogasserian rhizotomy.
4. Medullary tractotomy.
5. Mid brain tractotomy.
6. Intra cranial nerve decompression
   - Jannetta's approach
   - Dandy's approach.

8. Describe newer approaches in the treatment of trigeminal neuralgia.

1. Acupunture.
2. Physiologic inhibition of pain by transcutaneous neural stimulation.

9. Classify psychological approaches in the treatment of trigeminal neuralgia?

1. Bio feed back.
2. Psychiatric counseling.
3. Hypnosis/auto suggestion.

SENSORY DISTURBANCES OF FACE AND JAWS

1. **Define Allodynia.**

   It is defined as pain due to a stimulus that does not normally provoke pain.

2. **Define Analgesia.**

   It is defined as absence of pain in response to stimulation that would normally be painful.

3. **Define Dysesthesia.**

   An unpleasant painful abnormal sensation either spontaneous or evoked patient complains of numbness associated with burning.

4. **Define Hyperesthesia.**

   It is defined as increased sensitivity to stimulus.

5. **Define Hypoesthesia.**

   It is defined as decreased sensitivity to stimulation.

6. **Define Hypo and hypergesia.**

   It is defined as decreased or increased response to a stimulus that is normally painful.

7. **Define Ageusia.**

   It is defined as loss of taste.

8. **Define Neuritis.**

   It is defined as transmission of pain impulse passed along the course of the nerve.

9. **Classify Nerve injury.**

   Seddon (1943) of sunderland (1978) have proposed nerve Injury. It is applied to both motor and sensory nerves.

10. **Classify seddon's classification.**

    1. Neuropraxia.
    2. Axonotmesis.
    3. Neurotmesis.

11. Define Tinel's sign.

It was used as an earlier indication of the start of nerve regeneration. It is elicited by percussion over the divided nerve, which result in a tingling sensations in the part supplied by the peripheral section.

12. Define Neuropraxia.

It is defined as mild temporary injury caused by compression or retraction of the nerve. There is no axonal degeneration distal to the area of injury. There is a temporary conduction block.

13. Define Axonotmesis.

There is more significant injury, with disruption or loss of continuity of some axons, which undergo wallerian degeneration distal to the site of injury.

14. Define Neurotmesis.

It is complete severance or internal physiologic disruption of all layers of the nerve. Wallerian degeneration of all axons occurs distal to the injury. There is total permanent conduction block of all impulses.

15. Define Neuroma.

It is characterized by disorganized Micro Sprouting and formation of a disorganized mass of collagen and randomly oriented small neural fascicles.

16. Classify Neuromas.

1. Amputation/Stumpneuromas.
2. Central neuroma.
3. Electric neuroma.
   a. Lateral exophytic.
   b. Stellate neuroma.

17. Enumerate various methods of treatment of nerve injuries.

1. Medical [Vitamin B12 supplements]
2. Surgery [Neurroraphy]

ANATOMY OF FACIAL NERVE AND MOTOR DISTURBANCES OF FACE AND JAWS

18. Classify nucleus of the facial nerve?

1. Superior salivatory nucleus.
2. Nucleus of tractus solitarius.

19. Explain in detail about the branches of distribution of facial nerve.

A. Within the facial canal	1. Greater petrosal nerve. 2. The nerve to the stapedus. 3. The chorda tympani.
B. As it exists from the stylomas toid foramen.	1. Posterior auricular. 2. Diagastric, posterior belly. 3. Stylohyoid.
C. Terminal branches within the parotid gland on the face.	1. Temporal. 2. Zygomatic. 3. Buccal. 4. Mandibular. 5. Cervical.
D. Communicating branches with the adjacent cranial and spinal nerves.	

20. Classify ganglia associated with facial nerve?

1. Geniculate ganglion.
2. Submandibular ganglion.
3. Pterygo palatine ganglion.

21. Define Bell's palsy.

It is defined as an idiopathic Paresis or paralysis of the facial nerve of sudden onset. [unilateral lower motor neuron paralysis of sudden onset, not related to any other disease else where in the body] the name was described by Sir Charles bell, who in 1821, demonstrated the separation of the motor and sensory innervation of face.

22. Classify various treatment modalities in bells palsy.

I Medical management.
- A Tab prednisolone 1 mg/kg 10 to14 days Vitamins B1 B6 B12 3-4 weeks after steroid therapy is of no use.
- B Clostridium botulinum toxin [botax]

II Surgical management.
   1. Nerve decompression.
   2. Internal decompression.
   3. External decompression.
   4. Nerve anastomosis.
   5. Nerve grafting.

III Physio therapy.

23. Mention the etiology of facial nerve palsy.

I Congenital [congenital facial nerve palsy, myotonic dystrophy]
II Neurologic [myasthenia gravis, multiple sclerosis]
III Neoplastic.
IV Infections.
V Iatrogenic [parotidectomy, rhytidectomy, lateral skull base surgery]
VI Trauma.

24. Define Neurroraphy procedures.

Surgical repair of the transected facial nerve is done worth direct end to end approximation and suturing [lacerations, iatrogenic injuries, benign condition]

25. Define crocodile tear syndrome.

Injury to the facial nerve proximal to the geniculate ganglion, there may be a misdirection of the nerve fibers to the lacrimal gland instead of going to sub mandibular gland, through the greater petrosal nerve, as result patient lacrimates while eating. This paroxysmal lacrimation is termed as crocodile tear syndrome it can be treated by dividing the greater petrosal nerve.

26. Define facial paralysis.

Total flaccidity of facial muscles to perform motor functions is called facial paralysis.

27. Define Paresis.

Weakness of facial muscles to perform motor functions is called paresis (partial dysfunction).

28. Define supranuclear facial paralysis.

It is defined as hemiplegia in which lower part of the face is chiefly affected, the upper part remains unaffected. [frontalis and orbicularis occuli].

29. Define Infra nuclear facial paralysis.

In this condition the upper part of the face is chiefly affected, the lower part is unaffected.

30. Classify facial paralysis.

1. Intracranial.
   a. Vascular abnormalities.
   b. Tumors of the intra cranial cavity.
2. Infra temporal.
   a. Bacterial and viral infection.
   b. Cholesteatoma.
3. Trauma.
   a. Blunt temporal bone trauma.
   b. Gun shot wounds.
   c. Tumors invading facial nerve.
4. Extra cranial
   1. Malignant tumors.
   2. Trauma.
   3. Iatrogenic causes.
   4. Malignant tumors.