



VINAYAKA MISSION'S RESEARCH FOUNDATION, SALEM
(Deemed to be University under section 3 of the UGC Act 1956)

Ph.D Entrance Test – November – 2025

Faculty of Dentistry / Orthodontics & Dentofacial Orthopaedics

Instructions / Note:

1. Answer all the questions. Each question carries one mark.
2. No negative marks for wrong answers.
3. Read each question carefully and answer in the OMR sheet provided for each question with only blue/ black pen to fill the circles in the OMR Sheet.
4. Question number 1 - 35 questions belong to Research Methodology component and Question number 36-70 questions belong to the subject at PG level
5. Return the question paper along with the OMR sheet.

36. In Begg's technique, the light differential forces are primarily achieved by _____
 - A. Light round wires
 - B. Ribbon arch wires
 - C. Auxiliary springs
 - D. Edgewise rectangular wires
37. According to Enlow's counterpart principle, the forward growth of the mandible is balanced by _____
 - A. Resorption at anterior ramus border
 - B. Apposition at condylar head
 - C. Resorption at posterior ramus border
 - D. Apposition at symphysis
38. The major cause for relapse after extraction space closure is _____
 - A. Incomplete root parallelism
 - B. Inadequate overbite
 - C. Poor retention design
 - D. Elastic recoil of periodontal fibres
39. The bone-borne maxillary expander differs from tooth-borne in that it _____
 - A. Produces more skeletal and less dental expansion
 - B. Produces faster relapse
 - C. Is less effective in adults
 - D. Requires interseptal corticotomy



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40. The optimum force for tipping movement of a premolar is approximately ____
- A. 5–10 gm
 - B. 20–30 gm
 - C. 35–60 gm
 - D. 100 gm
41. The “Beta angle” used for sagittal skeletal assessment is described by _____
- A. Baik and Ververidou
 - B. Ricketts
 - C. Tweed
 - D. Downs
42. A patient with increased lower anterior facial height and open bite tendency shows _____
- A. Clockwise mandibular rotation
 - B. Counter-clockwise mandibular rotation
 - C. Matrix rotation dominance
 - D. Reduced gonial angle
43. The principal site of growth rotation in the mandible according to Björk is _____
- A. Chin
 - B. Ramus
 - C. Condyle
 - D. Alveolar process
44. Titanium molybdenum alloy (TMA) wire offers _____
- A. High stiffness and low springback
 - B. Intermediate stiffness and high springback
 - C. Very low formability
 - D. High modulus and low working range
45. Which of the following improves the accuracy of digital model analysis in orthodontics?
- A. Manual landmark plotting
 - B. 2D photographic overlay
 - C. 3D intraoral scanning
 - D. Use of lateral cephalogram superimposition
46. In Class III camouflage, lower premolar extraction is indicated when _____
- A. Mild skeletal discrepancy with proclined lower incisors
 - B. Severe skeletal discrepancy
 - C. Open bite tendency
 - D. High mandibular plane angle



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47. Anchorage reinforcement using temporary anchorage devices (TADs) is contraindicated in _____
- A. Patients with active periodontal disease
 - B. Fully erupted molars
 - C. Adolescents over 15 years
 - D. Patients with mild crowding
48. Root resorption risk is highest with _____
- A. Heavy continuous forces
 - B. Light intermittent forces
 - C. Short-term orthodontic forces
 - D. Self-ligating brackets
49. Cephalometric point "Gn" (Gnathion) is located by _____
- A. Intersection of facial plane and mandibular plane
 - B. Most anterior-inferior point on bony chin
 - C. Most posterior point on mandibular symphysis
 - D. Tangent to pogonion and menton
50. Which cephalometric analysis emphasizes vertical proportions of the face?
- A. Sassouni analysis
 - B. Steiner's analysis
 - C. Ricketts analysis
 - D. Downs analysis
51. The interincisal angle normally decreases in _____
- A. Class II division 1 cases
 - B. Class II division 2 cases
 - C. Class III cases
 - D. Deep bite cases
52. The principal advantage of friction-free mechanics (loop mechanics) is _____
- A. Reduced anchorage strain
 - B. Increased force magnitude
 - C. Reduced control on tipping
 - D. Continuous heavy load application
53. Piezoelectric effect in orthodontic tooth movement is due to _____
- A. Ionic diffusion in bone
 - B. Compression and tension generating electric potentials
 - C. Reversal of magnetic polarity
 - D. Collagen denaturation



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54. The ideal force for intrusion of a single incisor is approximately _____
- A. 5 gm
 - B. 10 gm
 - C. 15–25 gm
 - D. 50 gm
55. Anchorage loss is best minimized in extraction cases by _____
- A. Reciprocal tooth movement
 - B. Segmental mechanics and TADs
 - C. Increasing wire stiffness
 - D. Increasing loop height
56. The functional regulator II (Frankel II) appliance is indicated in _____
- A. Class II Division 1 malocclusion
 - B. Class II Division 2 malocclusion
 - C. Class III malocclusion
 - D. Open bite
57. The primary purpose of a quad-helix appliance is _____
- A. Distalization of molars
 - B. Expansion of maxillary arch
 - C. Correction of crossbite only
 - D. Anchorage control
58. Reverse pull headgear applies _____
- A. Upward-forward traction to maxilla
 - B. Downward-forward traction to maxilla
 - C. Downward-backward traction
 - D. Upward-backward traction
59. Chin-cup therapy for skeletal Class III aims to _____
- A. Restrict mandibular growth
 - B. Stimulate maxillary sutures
 - C. Retract lower dentition only
 - D. Expand nasal floor
60. The “W” arch appliance provides _____
- A. Transverse expansion with minimal tipping
 - B. Distalization of upper molars
 - C. Vertical control of anterior teeth
 - D. Anteroposterior correction



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61. The commonest site of failure of a mini-implant is _____
- A. Attached gingiva
 - B. Alveolar mucosa
 - C. Between molar roots with inadequate bone
 - D. Palatal midline
62. The total amount of mandibular growth from condyle to chin in males averages _____
- A. 10 mm
 - B. 15–20 mm
 - C. 25 mm
 - D. 35 mm
63. Which of the following is NOT a skeletal maturity indicator on hand-wrist radiograph?
- A. Adductor sesamoid ossification
 - B. Epiphyseal capping
 - C. Fusion of radius
 - D. Appearance of pisiform
64. In distraction osteogenesis, the latency period typically lasts _____
- A. 12 hours
 - B. 1–2 days
 - C. 5–7 days
 - D. 14 days
65. The key difference between orthodontic relapse and post-treatment settling is _____
- A. Relapse involves periodontal fibre rebound; settling involves occlusal adjustment
 - B. Both are same phenomenon
 - C. Settling occurs before appliance removal
 - D. Relapse occurs only in growing patients
66. MRI is superior to CBCT in orthodontics for evaluation of _____
- A. Root morphology
 - B. Temporomandibular joint soft tissues
 - C. Airway volume
 - D. Alveolar bone width
67. In cleft lip and palate patients, presurgical orthopaedic correction aims to _____
- A. Reduce nasal deformity
 - B. Align alveolar segments before primary surgery
 - C. Accelerate speech development
 - D. Strengthen orofacial muscles



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68. The “three-plane” cephalometric analysis for asymmetric cases was proposed by _____
- A. Grummons
 - B. Steiner
 - C. McNamara
 - D. Broadbent
69. Which growth modification approach enhances condylar cartilage adaptation?
- A. Herbst appliance
 - B. Twin block
 - C. Bionator
 - D. All of the above
70. The contemporary philosophy of evidence-based orthodontics primarily emphasizes _____
- A. Randomized trials and systematic reviews guiding clinical decision-making
 - B. Expert opinion over data
 - C. Case reports as highest level of evidence
 - D. Traditional dogma

