



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 / Periodontology

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. The difference in scaling and root planing procedure is _____
 - A. Both are the same
 - B. Scaling removes plaque, and root planing removes calculus
 - C. Scaling does not remove altered cementum
 - D. Scaling is non- surgical procedure, and root planing is a surgical procedure
37. The depth of clinical gingival sulcus is the distance between the gingival margin to the _____
 - A. Cementoenamel junction
 - B. Alveolar crest
 - C. Apical extension of junctional epithelium
 - D. Apical penetration of the probe
38. On which teeth and surfaces would you use a mini-gracey 11/12 hand scaler?
 - A. Distal surfaces of posterior teeth
 - B. Mesial surfaces of posterior teeth
 - C. Buccal and lingual surfaces of posterior teeth
 - D. All surfaces of anterior teeth
39. What instrument is used for supragingival scaling, has 2 cutting edges used for Anterior teeth, and is triangular in cross-section?
 - A. Jacquette
 - B. Curette
 - C. Sickle scaler
 - D. Push scaler



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40. Which of the following is the main mechanism of action of subantimicrobial dose doxycycline (SDD) in periodontics?
- A. Inhibition of bacterial protein synthesis
 - B. Inhibition of matrix metalloproteinases (MMPs)
 - C. Enhancement of neutrophil chemotaxis
 - D. Promotion of collagen degradation
41. NSAIDs help in host modulation primarily by _____
- A. Inhibiting cyclooxygenase enzymes and prostaglandin synthesis
 - B. Stimulating osteoblast differentiation
 - C. Increasing neutrophil adhesion
 - D. Promoting fibroblast apoptosis
42. In the Modified Widman Flap procedure, which of the following is the first incision made?
- A. Internal bevel incision
 - B. Crevicular incision
 - C. Interdental incision
 - D. Releasing incision
43. Which of the following is an indication for performing an apically repositioned flap?
- A. Regeneration of deep intrabony defects
 - B. Widening the zone of attached gingiva
 - C. Mucogingival defect correction
 - D. Root coverage in recession
44. Which of the following is the primary indication for a free gingival graft (FGG)?
- A. Root coverage in Miller's Class II recession
 - B. Increasing width of attached gingiva
 - C. Correction of mucogingival defects in esthetic zone
 - D. Ridge augmentation
45. The "double papilla flap" technique is primarily indicated for _____
- A. Generalized gingival recession
 - B. Single tooth root coverage with limited adjacent tissue
 - C. Augmentation of vestibular depth
 - D. Ridge preservation after extraction



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46. Which of the following wavelengths is typically used in diode lasers?
- A. 1064 nm
 - B. 2940 nm
 - C. 810–980 nm
 - D. 10,600 nm
47. One of the disadvantages of laser use in periodontal therapy is _____
- A. Reduced postoperative discomfort
 - B. Inability to precisely remove granulation tissue
 - C. Potential for thermal damage to root surfaces
 - D. Sterilization of the surgical site
48. The primary function of the barrier membrane in guided tissue regeneration is to _____
- A. Prevent epithelial and gingival connective tissue migration into the wound site
 - B. Enhance osteoclastic activity
 - C. Deliver local antibiotics
 - D. Increase the vascularity of the flap
49. Which of the following defects shows the best prognosis for GTR procedures?
- A. One-wall intrabony defect
 - B. Two-wall intrabony defect
 - C. Three-wall intrabony defect
 - D. Horizontal bone loss
50. Which of the following stem cell types is most commonly investigated for periodontal regeneration?
- A. Embryonic stem cells
 - B. Periodontal ligament stem cells (PDLSCs)
 - C. Hematopoietic stem cells
 - D. Adipose-derived stem cells
51. Stem cell-based periodontal regeneration primarily aims to restore which triad of structures?
- A. Gingiva, junctional epithelium, and alveolar bone
 - B. Cementum, periodontal ligament, and alveolar bone
 - C. Cementum, dentin, and pulp
 - D. Gingiva, cementum, and enamel
52. Which of the following best differentiates peri-implantitis from peri-implant mucositis?
- A. Absence of bleeding on probing
 - B. Presence of radiographic bone loss beyond initial remodeling
 - C. Suppuration
 - D. Pocket depth greater than 4 mm



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53. Which implant surface characteristic has shown the strongest correlation with early osseointegration?
- A. Polished surface with low surface energy
 - B. Machined titanium with smooth topography
 - C. Moderately roughened surface (Sa 1–2 μm)
 - D. Highly roughened surface (Sa > 4 μm)
54. Which of the following mechanical decontamination methods has the least potential for altering the titanium surface during peri-implantitis therapy?
- A. Ultrasonic scaler with metal tip
 - B. Titanium brush
 - C. Carbon fiber curette
 - D. Air-abrasive system with glycine powder
55. Which host factor has the strongest evidence-based association with increased risk for peri-implantitis?
- A. History of periodontitis
 - B. Controlled hypertension
 - C. Female gender
 - D. Short implant length (<8 mm)
56. Which property is most critical for a scaffold to support periodontal ligament regeneration?
- A. Radiopacity
 - B. Bio inertness
 - C. Controlled biodegradability
 - D. High compressive strength
57. Among the following, which combination is most suitable for cell-based periodontal tissue engineering?
- A. Hydroxyapatite + Collagen + PDGF
 - B. Chitosan + Cementum-derived cells + BMP-2
 - C. Titanium mesh + PDL fibroblasts
 - D. ePTFE + Dentin chips
58. Which of the following is not an advantage of local drug delivery over systemic therapy?
- A. Achieves higher local concentration at the site of infection
 - B. Minimizes systemic side effects
 - C. Provides uniform drug distribution throughout the body
 - D. Reduces the risk of bacterial resistance development



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59. Which of the following is a biodegradable local drug delivery system?
- A. Chlorhexidine chip (PerioChip)
 - B. Tetracycline fiber (Actisite)
 - C. Metronidazole gel
 - D. all of the above
60. Which polymer is most commonly used in the fabrication of biodegradable local drug delivery devices?
- A. Polyethylene
 - B. Polytetrafluoroethylene
 - C. Polyvinyl chloride
 - D. Polylactic-co-glycolic acid (PLGA)
61. The objective of osseous resective surgery is to _____
- A. Regenerate lost attachment
 - B. Create physiologic bone contours
 - C. Preserve alveolar bone at all cost
 - D. Eliminate need for flap reflection
62. Which of the following is a contraindication to osseous resection?
- A. One-walled angular defect
 - B. Thick alveolar bone
 - C. Proximity to vital structures
 - D. Shallow bony crater
63. Ostectomy differs from osteoplasty in that _____
- A. Ostectomy involves bone removal not supporting teeth
 - B. Osteoplasty includes recontouring of supporting bone
 - C. Ostectomy removes bone that supports the tooth
 - D. Osteoplasty removes cortical bone only
64. The most common bone defect treated by resective osseous surgery is _____
- A. One-walled defect
 - B. Two-walled crater
 - C. Three-walled defect
 - D. Combined defect
65. The term “root planing” specifically refers to _____
- A. Smoothing the root surface after scaling
 - B. Removal of plaque and calculus only
 - C. Curettage of the inner pocket wall
 - D. Removal of the junctional epithelium



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66. Which Gracey curette is designed for use on the distal surfaces of posterior teeth?
- A. Gracey 11/12
 - B. Gracey 13/14
 - C. Gracey 7/8
 - D. Gracey ½
67. Which of the following systemic antibiotics is most commonly used as an adjunct in aggressive periodontitis?
- A. Metronidazole alone
 - B. Amoxicillin-clavulanic acid
 - C. Combination of amoxicillin and metronidazole
 - D. Tetracycline
68. After scaling and root planing, epithelial reattachment to the tooth surface occurs by _____
- A. New cementum formation
 - B. Long junctional epithelium
 - C. Connective tissue attachment
 - D. Sharpey's fiber reformation
69. Which of the following graft materials is xenogeneic?
- A. Freeze-dried bone allograft (FDBA)
 - B. Demineralized freeze-dried bone allograft (DFDBA)
 - C. Bovine-derived hydroxyapatite
 - D. Autogenous bone from mandibular ramus
70. Which graft material acts both as osteoconductive and osteoinductive under certain conditions?
- A. DFDBA
 - B. Bioactive glass
 - C. Synthetic hydroxyapatite
 - D. Tricalcium phosphate

