

**SYLLABUS FOR PhD ENTRANCE EXAMINATION
IN
ORAL & DENTAL SCIENCES
JIS UNIVERSITY
KOLKATA**

A. RESEARCH METHODOLOGY

1. Basic Principles of Statistics and Bio-Statistics
2. Selection of Research topic
3. Study Design and Methodology in the field of Medicine and Dental Science
4. Formulating Objectives in Research Study
5. Review of literature
6. Hypothesis and Research Queries
7. Research Instrument with Reliability and Validity
8. Sampling Technique and Sample Size Estimation
9. Data Management and Preliminaries of analysis
10. Preparation and Presentation of a Research Report
11. Research Publication and Ethics

B. ORAL ANATOMY, HISTOLOGY, PHYSIOLOGY, BIOCHEMISTRY AND DENTAL BIO-MATERIALS

1. Structure of the Oral Tissues
2. General Embryology
3. Embryology of the Head, Face and Oral Cavity
4. Head & Neck Anatomy
5. Cell Biology, Cytoskeleton, Cell junctions, Fibroblasts and Extracellular Matrix
6. Development of Tooth and Its Supporting Tissues
7. Bone
8. Enamel: Composition, Formation and Structure
9. Dentin-Pulp Complex
10. Periodontium
11. Physiology of Tooth Movement: Eruption and Shedding
12. Salivary Glands
13. Oral mucosa
14. Temporomandibular joint
15. Facial Growth and Development
16. Repair and Regeneration of Oral Tissues
17. Overview of Preventive and Restorative Materials
18. Structure of Matter and Principles of Adhesion
19. Physical and Chemical Properties of Solids
20. Mechanical Properties of Dental Materials
21. Structures and Properties of Cast Dental Alloys
22. Dental Polymers

23. Biocompatibility
24. Impression Materials
25. Gypsum Products
26. Dental waxes, Casting Investments and Casting Procedures
27. Materials and Processes for Cutting, Grinding, Finishing and polishing
28. Bonding and Bonding Agents
29. Resin Based Composites
30. Dental Cements
31. Dental Amalgam
32. Dental Casting Alloys and Metal Joining
33. Wrought Metals
34. Dental Ceramics
35. Prosthetic Polymers and Resins
36. Dental Implants
37. Emerging Dental Biomaterials
38. Emerging Technologies