G. QUESTION BANK FOR ORAL EXAMINATION:

1. What is Nozzle and what are different types of Nozzle?
2. Define the terms & explain a) Impact of jets b) Jet Propulsion
3. What is the difference between the force exerted by jet on a single curved plate moving curved plates?
4. Differentiate between the force exerted by a jet of water on fixed vertical plate and moving vertical plate.
5. What do you understand by hydrodynamic machines? Discuss impulse momentum equation as applied to these machines?
6. What is Pelton Wheel turbine?
7. What is difference between Impulse and Reaction water turbine?
8. What are basis on which Hydraulic Turbines are classified.
9. Define the terms Hydraulic Machines, Turbines and Pumps.
10. Define the hydraulic efficiency of a turbine
11. Define the Mechanical efficiency of a turbine.
12. Define the Overall efficiency of a turbine.
13. Define the terms of Gross Head.
14. Define the terms of Net Head.
15. Draw inlet or outlet velocity triangles for a Pelton turbine and indicate their direction of various velocities.
16. What factors decide the type of turbine to be used in a hydroelectric project?
17. Write the names of parts of various systems and which are required for Governing of Pelton Turbine.
18. What do you mean by run-away sped of a Pelton wheel?
19. What are different components for Francis Turbine?
20. What is difference between Kaplan Turbine and Axial Flow Turbine?
21. What is the difference between Radial and Axial flow turbine.
22. What do you mean by inward flow and outward flow in a turbine?
23. Why Draft Tube is used in a reaction turbine.
24. What are cavitations and how can it be avoided in reaction turbine?
25. Mention difference between Kaplan Turbine and Propeller Turbine.
26. Write main parts and their functions of a Kaplan Turbine.
27. What is the efficiency of a draft tube in hydraulic turbine?
28. What are the important parameters which are varied during a test on a turbine?
29. Explain the Thoma's Cavitation factor.

30. Explain the governing mechanisms of Kaplan Turbine.
31. Explain the performance characteristics curve of Francis Turbine.
32. A Kaplan turbine has a hydraulic efficiency of 90% and a mechanical efficiency of 95% with a runner diameter of 6 m and a boss diameter of 1.8 m. If the discharge of turbine is 180 m3/s, calculate the head on the turbine and the power of the turbine. Assume that there is no whirl at outlet and the discharge is free. Neglect losses in the turbine.
33. What is centrifugal pump?
34. How will you obtain an expression for the minimum speed for starting of a centrifugal pump?
35. Write names and functions of various types of casings which are commonly used in a Centrifugal Pump.
36. What do you mean by static suction lift as applied to a centrifugal pump?
37. What are the important characteristics curves for Centrifugal Pumps?
38. What are the functions of multistage pumps?
39. What do you mean by impeller in series and impellers in parallel?
40. What is Priming and why is it necessary?
41. How does the specific speed of a centrifugal pump different from that of a turbine?
42. What are the effects of cavitations? and what are the precautions against cavitation?
43. Explain the terms 'NPSH available' and 'NPSH required'.
44. Differentiate between Compressor, Blower and Fan?
45. What is Deep Well Turbine Pump?
46. What is Air Lift Pump?
47. What is Steam Nozzle or Diffuser?
48. Define a pump?
49. What is impact of jet means?
50. What is tangential flow turbine?
51. What is radial flow turbine?
52. What are the devices used for pressure measurement?