

SUBJECT- PORT & HARBOUR ENGINEERING

1- GENERAL

- 1) Enlist major sea ports in India and in Gujarat also.
- 2) What is the significance of water transportation compare to other modes of transportation? Explain in detail.
- 3) Give a brief history of water transport.
- 4) Discuss the historical development of water transportation in India.
- 5) Give advantages and disadvantages of water transportation.

2- HARBOUR PLANNING

- 1) Draw the schematic diagram of harbour layout showing all components.
- 2) Define: turning basin, breakwater, draft.
- 3) Distinguish between harbour and port.
- 4) What are the different classifications of harbour?
- 5) What are the requirements of good harbour?

3- NATURAL PHENOMENA

- 1) How the water waves are generated? Explain by drawing sketch shallow waves and deep waves.
- 2) What are the important wind characteristics? Explain the beau fort scale and its use.
- 3) What is wind rose diagram? What are its uses?
- 4) Write short notes on : 1) Littoral drift , 2) Wind rose , 3) Tidal datum's ,4) Wave reflection
- 5) Explain with neat diagram the action of various forces under the influence of the wave.

4- MARINE STRUCTURES

- 1) Why fenders are provided on docking platform? Draw the sketch of wooden and rubber fenders.
- 2) What is need of breakwater? Describe wall type breakwater.
- 3) Explain the method of construction of wall breakwater.
- 4) Give merits and demerits of wall breakwater.
- 5) Enlist different types of break water and describe anyone with a neat sketch.

5- DOCKS AND LOCKS

- 1) Explain the necessity for providing a dock. Distinguish harbour dock from tidal basin.
- 2) What is graving dock? Explain the method of dry docking.
- 3) What are slipways? Explain the function of its component parts.
- 4) What are the different types of lock gates? Explain with sketch the mitre type gate.
- 5) What are dry docks? Draw sketch of dry dock

6- PORT AMENITIES

- 1) What is ferry? Describe different type of ferries.
- 2) What a short note on “Transfer Bridge”.
- 3) What are floating landing stages? What are its uses?
- 4) What facilities are necessary for a major port? Describe each in detail.
- 5) Distinguish between: Transit shed and warehouse.

7- NAVIGATION AIDS

- 1) Draw sketch of floating buoy.
- 2) Give the necessity of navigation aids.
- 3) Write short notes on: i) Light house, ii) Beacon lights, iii) Lightships, iv) Mooring buoys.
- 4) Give the requirements of signals in navigation.
- 5) Give different types of navigation aids. Discuss the use of buoys

8- HARBOUR MAINTENANCE

- 1) What is necessity of dredging? Explain mechanical dredgers.
- 2) What is dredging? Classify different types of dredging works.
- 3) List different types of dredgers. Example dipper dredger with neat sketch.
- 4) What are the causes of beach erosion.
- 5) What are purposes of dredging?