USN ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚ **10MR62**

Sixth Semester B.E. Degree Examination, June/July 2017
Naval Architecture – II

Time: 3 hrs. Max. Marks:100

Note: *Answer any FIVE full questions, selecting*
atleast TWO questions from each part.

PART – A

1 a. Derive thrust exerted by a propeller. **(10 Marks)**
  b. The total resistance of ship at 13 knots is 180 kN, the QPC is 0.70, shaft losses 5% and the mechanical efficiency of the machinery 87%. Calculate the indicated power. **(10 Marks)**

2 a. Explain Blade element theory. **(14 Marks)**
  b. Explain Measured mile method. **(06 Marks)**

3 a. A rudder has an area of 15 m^2 with its centre of effort 0.9m from the centre of stack. The maximum rudder angle is 35° and it is designed for a service speed of 15 knots. Calculate the diameter of the rudder stock if the maximum allowable stress in the stack is 55 MN/m^2 and rudder force parallel to the centre line of the ship is given by $F = 580\ AV^2N$ with V in m/s. **(10 Marks)**
  b. Explain angle of Heel when turning. **(10 Marks)**

4 a. Write a note on types of Rudder and explain about special rudder in detail with diagram. **(10 Marks)**
  b. Draw and explain about zig-zag maneuver in detail. **(10 Marks)**

PART – B

5 a. Write a note on shearing force and bending moment curves. **(10 Marks)**
  b. Explain about transverse movement of weight. **(10 Marks)**

6 a. Write a note on forces on a ship in still water. **(05 Marks)**
  b. Explain how load acts on ship section. **(07 Marks)**
  c. Explain about changes to section modulus. **(08 Marks)**

7 a. Write a note on trochoidal waves. **(10 Marks)**
  b. Explain energy spectra in detail. **(10 Marks)**

8 a. Explain different motions of ship in detail with diagram. **(12 Marks)**
  b. Draw and explain bilge keel. **(08 Marks)**

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