CRASH COURSE

Fifth Semester B.E. Degree Examination, May 2017
Marine Machinery and System Design

Time: 3 hrs.   Max. Marks:100

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

PART – A

1   Explain about various manufacturing methods related to ship building.   **(20 Marks)**

2   A line shaft is driven by means of a motor placed vertically below it. The pulley on the shaft is 1.5 m in diameter and has belt tension 5.4 kN and 1.8 kN on the tight side and slack side of the belt respectively. Both these tension may be assumed to be vertical. If the pulley be overhang from the shaft, the distance of the centerline of the pulley from the centerline of the bearing 400 mm. Find the diameter of the shaft. Assuming max allowable shear stress of 42 MPa.   **(20 Marks)**

3   During one revolution of the crank of a multicylinder engine the areas above and below the mean turning moment line taken in order are +0.36, -0.81, +0.75, -0.64, +0.92, -0.58cm^2.
    The horizontal scale of diagram 1 cm = 45°
    Vertical scale 1 cm = 7200 Nm
    Speed of engine 150 rpm
    Total fluctuation of speed 2% of mean speed.
Find: i) Mass of flywheel,   ii) Area of (C/S) of rim
Neglect the effect of arms and boss and take density of rim material as 7260 kg/m^3 and mean peripheral speed as 1000 m/min.   **(20 Marks)**

4   Draw a neat sketch of globe valve with its parts.   **(20 Marks)**

PART – B

5   Explain about power transmission system with a neat diagram.   **(20 Marks)**

6   a.   Write short notes about the various types of steering systems which related to marine.   **(15 Marks)**
    b.   Write short notes about clarifier in a lub oil system.   **(05 Marks)**

7   Explain about two stage air compressors with its line system.   **(20 Marks)**

8   Explain about the factors to be considered while selecting a fuel for main engine.   **(20 Marks)**

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