INDIAN MARITIME UNIVERSITY

(A Central University,Govt of India)

End Semester Examinations-December 2018

Semester-V

B.Sc(Maritime Science)

Marine Engg Drawing & Design(UG22T2507)

Date: 03-01-2019 **Maximum Marks**:70

Time: 3 Hours **Pass Marks**:35

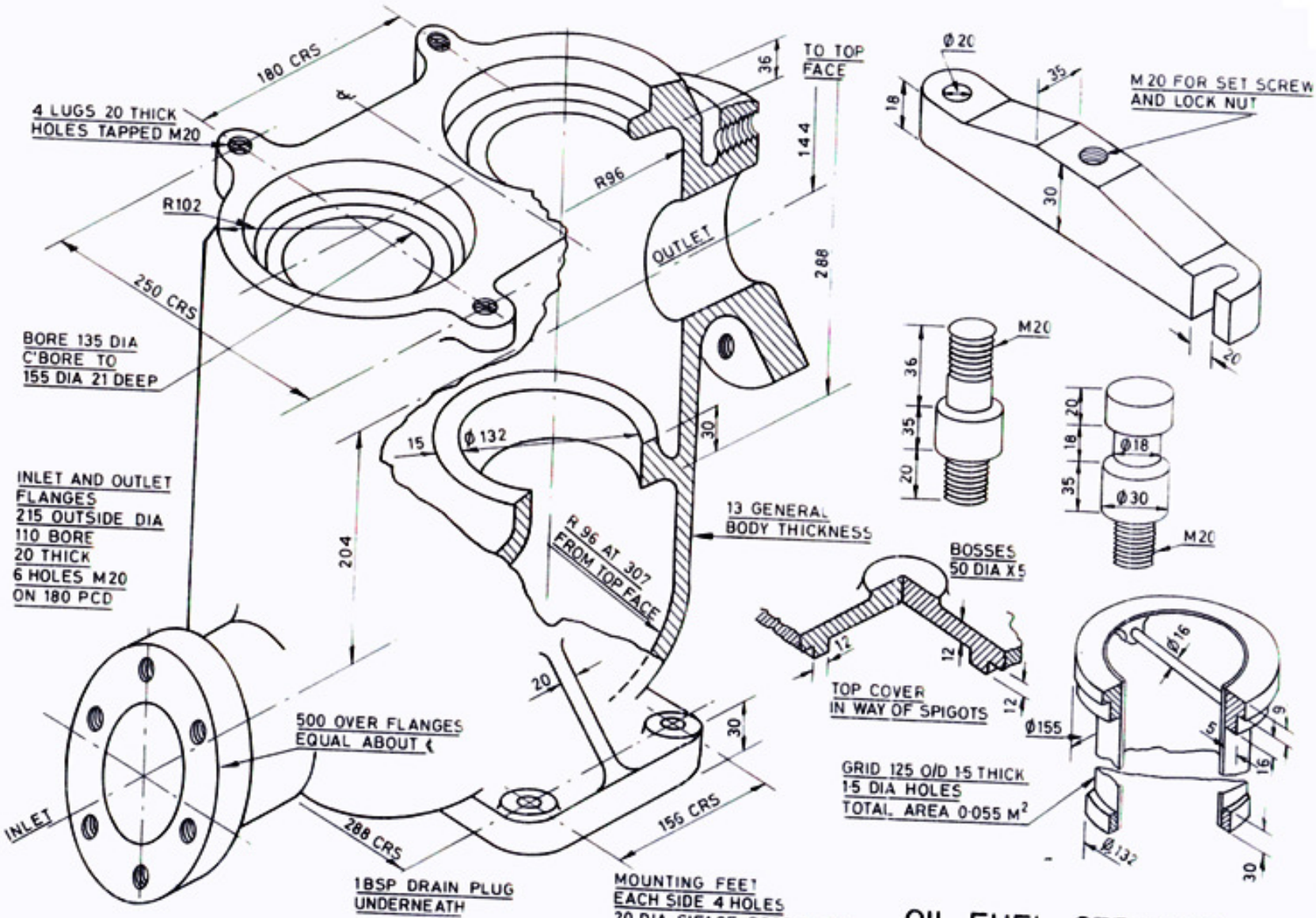
Note.:

1) ***Orthographic Projections*** *are to be drawn using* ***first angle projections****.*
2) ***All dimensions*** *in the drawings are in* ***mm*** *unless otherwise stated. Where dimensions are not given,* ***suitable*** *dimensions have to be* ***provided*** *by the* ***candidates****.*
3) *The various* ***components*** *must be shown assembled in their* ***respective positions*** *to make a working drawing.*
4) ***Neatness*** *in drawing carries* ***weightage****.*
5) *All the* ***rough work*** *should be done on a* ***separate*** *sheet, which has to be submitted* ***along with*** *the* ***drawing*** *sheet.*
6) *Scale chosen must be* ***clearly*** *indicated. Credit will be given for the largest possible scale used which ensures uniform distribution and coverage of the drawing sheet.*
7) *A list of materials used for principle components should be stated on the drawing sheet in a tabular form.*
8) *Answer one question each from Part-A & Part-B*

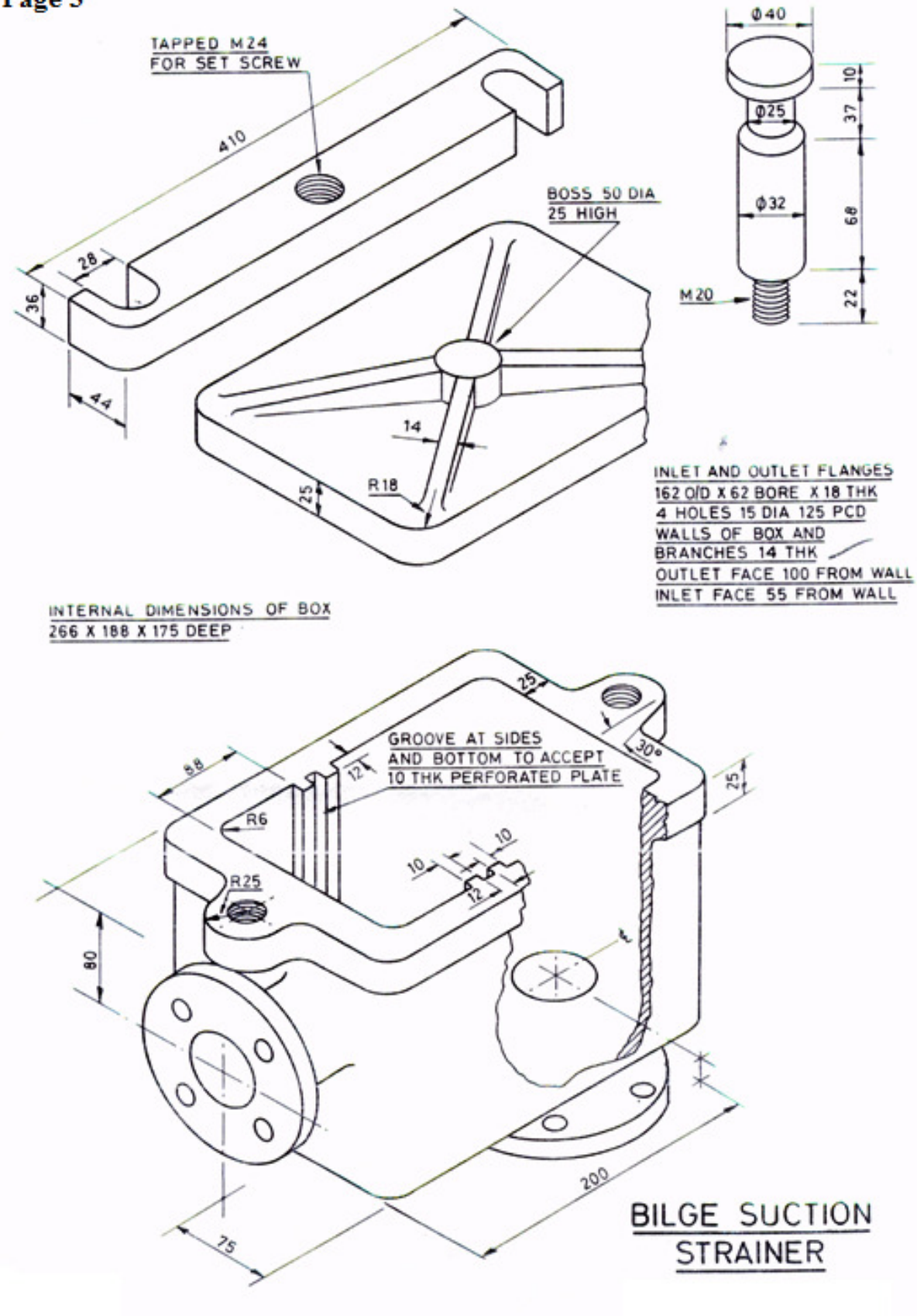
PART –A (55 Marks)

1. Draw the following views of "Oil Fuel Strainer":(Refer to Page 2)
   (a)Sectional elevation through inlet and outlet branches showing all parts assembled. **[25]**
   (b) End elevation. **[15]**
   (c) Plan view. **[15]**

2. Draw the following views of "Bilge Suction Strainer":
   (Refer to Page 3)
   (a) Sectional elevation through pillars showing all parts assembled. **[25]**
   (b) End elevation. **[15]**
   (c) Sectional plan view through axis of swivel block. **[15]**



OIL FUEL STRAINER


TAPPED M24
FOR SET SCREW
410
28
36
44
BOSS 50 DIA
25 HIGH
14
R18
25
Φ40
Φ25
Φ32
M20
10
37
60
22
INLET AND OUTLET FLANGES
162 O/D X 62 BORE X 18 THK
4 HOLES 15 DIA 125 PCD
WALLS OF BOX AND
BRANCHES 14 THK
OUTLET FACE 100 FROM WALL
INLET FACE 55 FROM WALL
INTERNAL DIMENSIONS OF BOX
266 X 188 X 175 DEEP
25
GROOVE AT SIDES
AND BOTTOM TO ACCEPT
10 THK PERFORATED PLATE
12
30°
25
88
R6
10
10
12
R25
80
200
75
BILGE SUCTION
STRAINER

PART –B (15 Marks)

3.The Following forces act about a point : **[15]**

50N due North
60N at 10 degree North of East
50N South East
40N at 20 degree West of South

Draw a vector diagram and determine the magnitude and direction of the equilibrant.

4. The piston of reciprocating engine exerts a force of 150 kN on the crosshead when the crank is 65 degree past top dead center. if the stroke of the engine is 900mm, and the length of the connecting rod is 1.6m, find the guide force and the force in the connecting rod. [**15]**

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