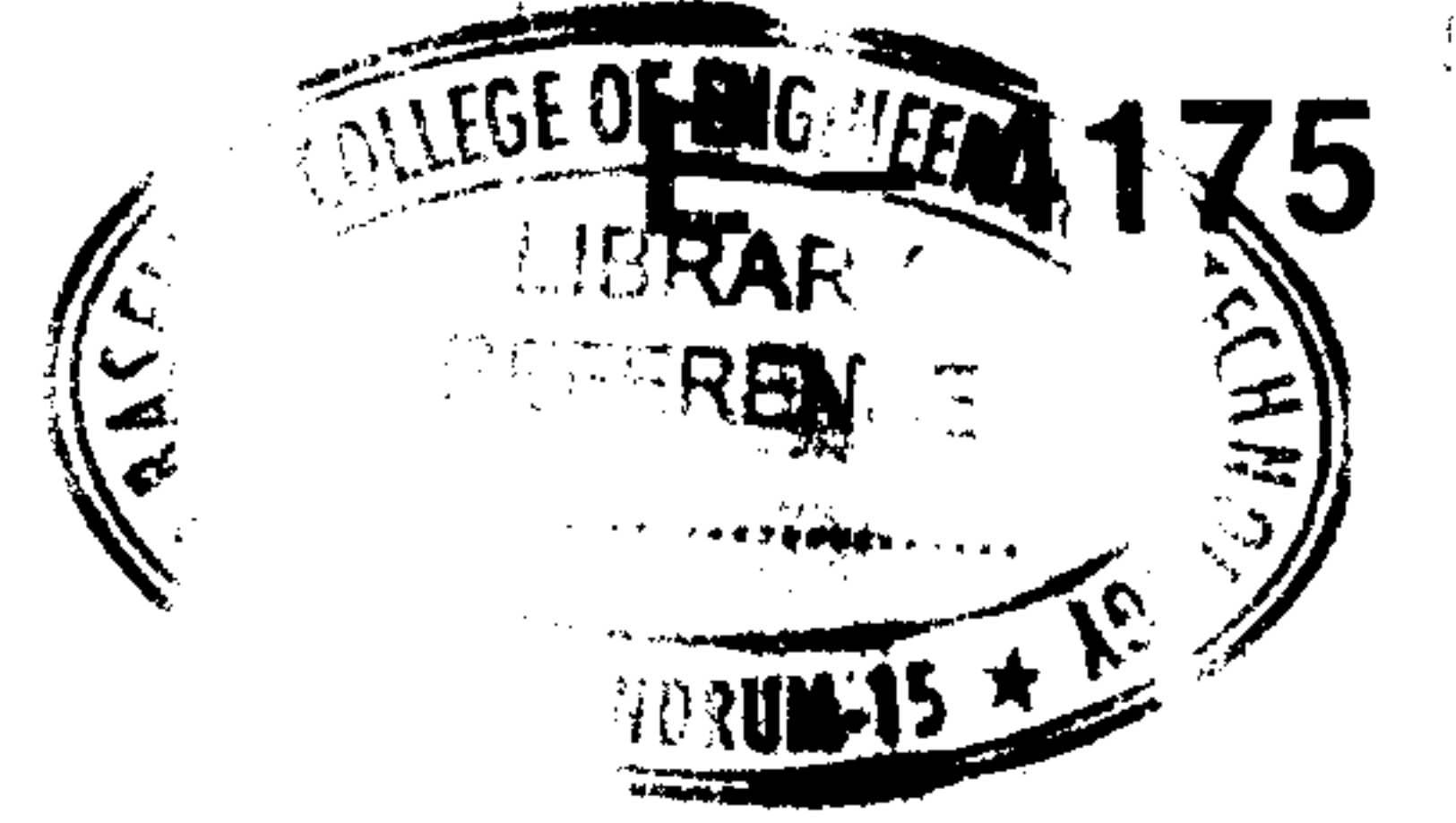




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Reg. No. : .....

Name : .....

**Fourth Semester B.Tech. Degree Examination, August 2018  
(2013 Scheme)**

**13.402 : MANUFACTURING PROCESS (MN)**

Time : 3 Hours

Max. Marks : 100

**Instruction :** Answer *all* questions in Part – A and *any one full* question from each Module in Part – B.

**PART – A**

**Each** question carries **2** marks :

1. What are the common pattern making materials ?
2. How gating system classified ?
3. Write the functions of runner and riser.
4. What are the advantages of sand castings ?
5. What is centrifuging ?
6. List any four metal forming processes.
7. Briefly explain Tresca criterion.
8. Write a note on rotary swaging.
9. What is meant by weldability ?
10. Why welding electrodes coated with flux ?

**(10×2=20 Marks)**

P.T.O.



PART - B

Each question carries 20 marks :

**Module - I**

11. a) Write a note on properties of moulding sands.  
b) Explain chills and its applications.

OR

12. a) Explain the design principles of gating system.  
b) Explain core, core print and chaplets.

**Module - II**

13. a) Describe low pressure die casting technique.  
b) Name any two casting defects. How it can be eliminated ?

OR

14. a) Write a note on powder metallurgy. What are its applications ?  
b) Describe forming and shaping of glasses.

**Module - III**

15. a) Explain Von-Mises yield criterion.  
b) Explain hot and cold rolling.

OR

16. a) How extrusion process classified ? Explain them with neat sketches.  
b) Write a note on different forging operations in detail.

**Module - IV**

17. a) Explain the metallurgy of welding.  
b) Explain SMAW process with sketch.

OR

18. a) Explain with neat sketch "ultrasonic welding".  
b) Write in detail destructive and non-destructive testing methods of welded joints.

(4×20=80 Marks)