ROLL NO.	

PRESIDENCY UNIVERSITY, BENGALURU
SCHOOL OF ENGINEERING

Max Marks: 80 | Max Time: 120 Mins | Weightage: 40 %

END TERM FINAL EXAMINATION

I Semester AY 2017-18 | Course: **MEC 215 Advanced Production Techniques** | 21 DEC 2017

Instructions: (i) Answer all Questions.
(ii) Figures are not to scale.
(iii) Draw neat sketch wherever necessary.

Part A (6Q x 5M= 30Marks)

1. Write a brief note on explosive welding process.
2. Explain forward (Direct) and backward (Indirect) extrusion process in metal forming.
3. What is the function of flux in joining process and their constituents?
4. List out the advantages and limitations of Metal Inert Gas (MIG) welding process.
5. Distinguish between Welding, Brazing and Soldering process.
6. Briefly explain the types of flames used in oxy-Acetylene gas welding.

Part B (5Q x 6M= 30 Marks)

7. What are the defects that are generally found in welding? Describe their cause and remedies.
8. Describe the process of electron beam welding process with simple sketch.
9. Explain the process of friction welding in joining process.
10. A stock of thickness 30 mm is to be rolled in two stages. In the first stage the reduction is to be from 30 mm to 10 mm and in the second stage from 10 mm to 5 mm. calculate the minimum diameter of the rolls for the two stages if the maximum angle of bite is 40 degrees for the first stage and 30 degrees for the second stage. Also, find the required coefficient of friction in both the stages.
11. Explain the principle of magnetic particle inspection method for weldment testing.

Part C (2Q x 10M=20 Marks)

12. Explain with neat sketch Tungsten Inert Gas Welding (TIG) process with advantages.
13. Describe the process of Izod and Charpy method of toughness testing in joining process with sketch.

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Max Marks: 40 Time: 60Min Weightage: 20 %

Test-2

I Semester AY 2017-2018 **MEC 215- Advanced Production Techniques** 25/10/2017

Note: Answer all Questions.

Part A

(4Q x 5M= 20 Marks)

1. What is degassing? Explain degassing process in melting aluminum with simple sketch.
2. List out the advantages and disadvantages of centrifugal casting process.
3. Explain the Shell moulding casting process with simple sketch.
4. Differentiate between hot and cold chamber die casting process.

Part B

(2Q x 6M= 12 Marks)

5. With neat sketch explain the process of Direct Electric Arc furnace (DFAC) for melting steel in foundry.
6. Explain the continuous casting method to produce steel ingots with sketch.

Part C

(1Q x 8M = 8 Marks)

7. Estimate the final composition of the cast iron produced with the following charge composition and proportion shown in Table 1

	Carbon	Silicon	Manganese	Sulphur	%In Charge
Pig Iron 1	3.00	2.35	0.7	0.009	35
Pig Iron 2	3.60	1.9	0.8	0.027	40
Iron Scrap	3.20	2.4	04	0.15	25

Table 1

Analyse total amount of elements present in 1 ton (1000 Kg) of charge, assuming carbon pick-up as 0.12%, Sulphur pick-up as 0.03%, Silicon loss as 10%, and Manganese loss as 18%.