ME/SemII/CBCGS/MECH/CAD-CAM/AMT/M-J-18 17/05/18

Q. P. Code: 24771

(Three Hours) **Total Marks: 80**

Instructions:

- *Q. 1 is compulsory.*
- *Attempt any **THREE** questions from the remaining questions*
- *Assume suitable data wherever necessary*
- *Figures to the right indicate full marks.*

Q.1 Write short notes on. **(Any Four).** 20

a. Chemical machining
b. Physical Vapour Deposition coating
c. Limitations of Collaborative Manufacturing
d. Nano Manufacturing and micro-machining techniques
e. Inputs to MRP-I

Q.2 a. Explain various factors considered for analysis of transfer lines. 10

b. What is Electric Discharge Machining Ultra sonic machining? Explain its construction, working principle, and process parameters. 10

Q.3 a. What is need of nontraditional machining processes? Explain working principle of Ultra sonic machining with its applications. 10

b. What are Cleaners? Explain any one methods of cleaning. What is necessity of surface coating? Explain ceramic and organic methods of coating, 10

Q.4 a. What is Chemical Vapour Deposition coating? Explain its procedure. 10

b. Simulated factory implementation can be realized with supervisory control system in manufacturing. Discuss 10

Q.5 a. Explain various processes of manufacturing and shaping of metals and ceramics. 10

b. Complete the following MRP record. 10
Lot size=70, Lead Time=1 month, Safety stock=45,
and Projected available balance=10

Period (Months)	1	2	3	4	5
Gross Requirement		45	40	55	45
Scheduled receipts	70				
Projected available balance					
Planned order release					

Q.6 a. Write a short note on i) Cloud manufacturing and ii) Rapid manufacturing. 10

b. A company is setting an assembly line to produce 192 units per eight hour shift. The information regarding work elements in terms of times and immediate predecessors are given, 10

Work element	Time (sec)	Immediate predecessors
A	40	None
B	80	A
C	30	D,E,F
D	25	B
E	20	B
F	15	A
G	120	A
H	145	G
I	130	H
J	115	C,I

i. What is the desired cycle time and theoretical number of stations?
ii. Use largest candidate rule to design work station and find line efficiency.

****