

Hall Ticket Number :									
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<b>R-17</b>
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**Code: 7G587**

IV B.Tech. II Semester Regular Examinations July 2021

**Power Plant Engineering**  
( Mechanical Engineering )

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit ( 5x14 = 70 Marks )

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	Marks	CO	Blooms Level
<b>UNIT-I</b>			
1. Explain the general layout of ash handling and dust collection systems.	14M	1	L2
<b>OR</b>			
2. What are different types of hoppers used for coal handling in steam power plants and explain them.	14M	1	L1
<b>UNIT-II</b>			
3. What are the advantages of stoker firing? Explain the working of traveling grate stoker with simple sketch.	14M	2	L1&L2
<b>OR</b>			
4. Explain the various draught systems with neat sketches.	14M	2	L2
<b>UNIT-III</b>			
5. Why the starting of diesel plant is more difficult? Explain the method used for starting diesel engine?	14M	3	L2
<b>OR</b>			
6. Describe the working of any one of the combined cycle power plant.	14M	3	L3
<b>UNIT-IV</b>			
7. What are the various factors to be considered in selecting the site for a hydroelectric power plant and discuss briefly about primary and secondary investigations.	14M	4	L2
<b>OR</b>			
8. Describe with the help of a neat sketch, the construction working of a pressurized water reactor.	14M	4	L3
<b>UNIT-V</b>			
9. Explain the components and working of a Vertical Axis Wind Turbine.	14M	5	L2
<b>OR</b>			
10. Draw the load curve for the power requirement in India and discuss the methods to fulfil the part load conditions.	14M	5	L4

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Hall Ticket Number :

**R-17**

**Code: 7G583**

IV B.Tech. II Semester Regular Examinations July 2021

**Rapid Prototyping**  
( Mechanical Engineering )

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit ( 5x14 = 70 Marks )

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	Marks	CO	Blooms Level
<b>UNIT-I</b>			
1. Describe the advantages of RP in terms of in beneficiaries such as the product designers, tool designer, manufacturing engineer and consumers.	14M	CO1	L1
<b>OR</b>			
2. a) How does pattern differ from prototype?	4M	CO1	L2
b) What is meant by a Rapid Prototype? What are the roles of prototype in product development process?	10M	CO1	L2
<b>UNIT-II</b>			
3. a) Explain the need of support generation with flow charts.	7M	CO2	L3
b) What are the steps involved in model slicing?	7M	CO2	L2
<b>OR</b>			
4. a) State the reasons for reverse engineering in Industries.	6M	CO2	L2
b) With the aid of suitable example explain the various steps in reverse engineering.	8M	CO2	L3
<b>UNIT-III</b>			
5. Briefly explain the stereo lithography process with neat sketch and what are the process parameters of SLA system that influence the part quality?	14M	CO3	L2
<b>OR</b>			
6. a) What are the various LOM materials and their typical applications?	7M	CO3	L3
b) Describe the process of fused deposition modeling and list the factors that affect the part quality.	7M	CO3	L2
<b>UNIT-IV</b>			
7. a) Briefly explain the data preparation for SLS.	7M	CO4	L4
b) Briefly explain the principle and process details in Selective Laser Sintering (SLS) and its applications with neat sketch.	7M	CO4	L3
<b>OR</b>			
8. Sketch Laser Engineered Net Shaping (LENS) and explain the principle and applications.	14M	CO4	L2
<b>UNIT-V</b>			
9. Explain: a. Vulcanizing Silicone rubber tooling b. Spray metal tooling	14M	CO5	L4
<b>OR</b>			
10. a) With aid of simple sketches, explain the shape deposition manufacturing.	7M	CO5	L3
b) How does aerospace technology make use of soft tooling applications? Explain.	7M	CO5	L4

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Hall Ticket Number :

**R-17**

**Code: 7G581**

IV B.Tech. II Semester Regular Examinations July 2021

**Supply Chain Management**

( Mechanical Engineering )

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit ( 5x14 = 70 Marks )

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Marks CO Blooms Level

**UNIT-I**

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|--|-----|-----|----|
| 1. a) Identify the three key supply chain decision phases and explain the significance of each one.  | 4M  | CO1 | L1 |
| b) Consider the supply chain involved when a customer orders a book from Amazon. Identify the push/pull boundary and two processes each in the push and pull phases. | 10M | CO1 | L1 |

**OR**

- |  |     |     |    |
|--|-----|-----|----|
| 2. a) Describe how a company achieves strategic fit between its supply chain strategy and its competitive strategy   | 4M  | CO1 | L2 |
| b) Give arguments to support the statement that Walmart has achieved good strategic fit between its competitive and supply chain strategies. What challenges does it face as it works to open smaller format stores in urban environments? | 10M | CO1 | L3 |

**UNIT-II**

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|---|-----|-----|----|
| 3. What types of distribution networks are typically best suited for commodity items? Explain in detail | 14M | CO2 | L3 |
|---|-----|-----|----|

**OR**

- |  |     |     |    |
|--|-----|-----|----|
| 4. How do import duties and exchange rates affect the location decision in a supply chain? | 14M | CO2 | L3 |
|--|-----|-----|----|

**UNIT-III**

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|--|-----|-----|----|
| 5. a) What do Understand the impact of quantity discounts on lot size and cycle inventory?   | 4M  | CO3 | L1 |
| b) Why do manufacturers offer trade promotions? What impact do trade promotions have on the supply chain? How should trade promotions be structured to maximize their impact while minimizing the additional cost they impose on the supply chain? | 10M | CO3 | L4 |

**OR**

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|--|-----|-----|----|
| 6. What modes of transportation are best suited for large, low value shipments? Why? | 14M | CO3 | L2 |
|--|-----|-----|----|

**UNIT-IV**

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|---|-----|-----|----|
| 7. For products such as home appliances, toys, garments, and consumer electronics, what factors would influence selecting an onshore, near-shore, or offshore supplier? | 14M | CO4 | L3 |
|---|-----|-----|----|

**OR**

- |  |     |     |    |
|--|-----|-----|----|
| 8. Discuss factors that affect the decision to outsource a supply chain function | 14M | CO4 | L4 |
|--|-----|-----|----|

**UNIT-V**

- |   |     |     |    |
|---|-----|-----|----|
| 9. What are some advantages of the software as a service (SaaS) model? Why has it been successful in the CRM space? | 14M | CO5 | L2 |
|---|-----|-----|----|

**OR**

- |   |     |     |    |
|---|-----|-----|----|
| 10. Discuss the importance of information and information technology in a supply chain. | 14M | CO5 | L4 |
|---|-----|-----|----|

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<b>R-17</b>
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**Code: 7G588**

IV B.Tech. II Semester Regular Examinations July 2021

**Unconventional Machining Processes**

( Mechanical Engineering )

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit ( 5x14 = 70 Marks )

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	Marks	CO	Blooms Level
<b>UNIT-I</b>			
1. a) Outline the need for non-traditional machining methods	7M	1	L4
b) Explain the types of energy sources used in Unconventional Machining Processes	7M	1	L2
<b>OR</b>			
2. a) Draw the graph showing the effect of slurry viscosity and MRR, in Ultra Sonic Machining (USM).	4M	1	L1
b) What is ultrasonic machining? Why is it recommended for brittle materials? Why is the tool to be soft? What are various tool materials and abrasives used? Compare the abrasives based on cutting ability, life and cost	10M	1	L4
<b>UNIT-II</b>			
3. a) What is the abrasive water jet machining? <b>Explain</b> its principle of operation.	7M	2	L2
b) Discuss the major process variables that affect the MRR in Abrasive Jet Machining.	7M	2	L2
<b>OR</b>			
4. a) Explain the water jet machining process with a schematic diagram.	7M	2	L2
b) List the practical applications of Water Jet Machining	4M	2	L1
c) Write about variation on MRR between AJM and WJM	3M	2	L1
<b>UNIT-III</b>			
5. a) Explain the mechanism of material removal during ECG and how is different from ECM?	7M	3	L2
b) Explain the working principle of chemical machining with neat sketch.	7M	3	L2
<b>OR</b>			
6. a) What are the various factors to be considered in the selection of Etchants for a particular application?	7M	3	L1
b) Write the advantages, limitations, and applications of electro chemical honing.	7M	3	L1
<b>UNIT-IV</b>			
7. a) Explain the term "Sinking" in Electro Discharge Machining Method.	7M	4	L2
b) Explain the working of Resistance – Capacitance relaxation circuit.	7M	4	L2
<b>OR</b>			
8. a) Describe with a neat sketch the working of a Wire EDM.	7M	4	L2
b) Discuss the factors to be considered in the selection of di-electric fluid used in EDM.	7M	4	L2
<b>UNIT-V</b>			
9. a) Draw and label the parts of the Laser Beam Machine.	7M	5	L1
b) Discuss the surface finish and tolerances obtained in PAM.	7M	5	L2
<b>OR</b>			
10. a) Differentiate between the EBM and LBM processes.	7M	5	L2
b) What is meant by "Fourth state of matter" in Plasma Arc Machining (PAM)? Explain its Significance in Machining.	7M	5	L2

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