Q. P. Code : 18052

(3 Hours) **(Marks: 80**

N. B. 1 Question **No.1** is **compulsory**.
2 Attempt **any three** questions from remaining **five** questions.
3 Assume suitable **data** if **necessary**.
4 **Diagram** at appropriate places **carries marks**.

1	(a)	Write short note on polyamides	**5**
	(b)	Give properties and applications of Nitinol alloy	**5**
	(c)	Write short note Heat treatment cycle for stainless steel	**5**
	(d)	Write the composition, properties and applications of high temperature alloy	**5**
2	(a)	Describe important characteristics & applications of free cutting steel. Give typical composition of a free cutting steel	**10**
	(b)	Explain conducting polymer in detail?	**10**
3	(a)	Define semiconductor. Discuss the working of semiconductor ceramic materials	**10**
	(b)	Explain Silicon nitride processing of ceramics?	**10**
4	(a)	Explain reinforcement types in detail?	**10**
	(b)	Explain carbon composite fabrication in detail?	**10**
5	(a)	Explain different causes of failure in stainless steel	**10**
	(b)	Discuss the mechanical behavior and properties of metal composites	**10**
6	(a)	Write short note on nanoshell and nanosensor	**10**
	(b)	Explain various types of thermal spraying methods used for thin film coating	**10**