Seat No.:	Enrolment No.

## \*8-\$5\$7#(&+12/2\*,&\$/掲1,9(56,7<#

## B. E. - SEMESTER - VII • EXAMINATION - WINTER 2012

Subject code: 172303 Subject Name: Medical Plastics			
Ti	ime: 1	0.30 am - 01.00 pm Total Marks: 70 etions:	
11	1. 2.	Attempt any five questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
Q.1	(a)	Give various factors of importance in material selection for biomedical application (in a tabular form). Give factors affecting its chemical, physical and mechanical properties.	07
	<b>(b)</b>	Give a detailed list of potential of bio-composites for medical application.	07
Q.2	(a)	With the help of diagram, give a list of various hard and soft tissues of human body that can be replaced/ treated by various polymers.	07
	<b>(b)</b>	List typical metallic and ceramic biomaterials used in human body.  OR	07
	<b>(b)</b>	Give a complete list of typical polymeric bio materials used in human body	07
Q.3	(a) (b)	Give classification of bio composites based on their reinforcement form.  Give block diagram of classification of man-made polymer bio-composites based on biodegradability.	07 07
Q.3	(a)	<b>OR</b> Give a comparison of commodity and engineering thermoplastics used in medical devise applications.	07
	<b>(b)</b>	Give a comparison of amorphous and crystalline polymers used in medical devise applications.	07
<b>Q.4</b>	(a)	List various additives used in the modification and tailoring of plastics performance and processing.	07
	<b>(b)</b>	Write a short note on Radiopaque additives.  OR	07
Q.4	(a)	Write the advantages of Antimicrobial additives used as medical plastics. With the help of graph discuss the effect of antimicrobial levels on inhibition and destruction of micro organisms.	07
<b>Q.4</b>	<b>(b)</b>	Give at least 10 reasons for the increase in the use of plastics in medical device applications.	07
Q.5	(a)	Give a comparison of various types of PVC resins with its advantages and disadvantages – (for Rigid, Flexible and Chlorinated PVC)	07
	<b>(b)</b>	List the various medical devices and the components where PVC is used.  OR	07
Q.5	(a)	Discuss the major factors for the use and popularity of PVC in medical device applications.	07
	<b>(b)</b>	Give the advantages and disadvantages of various Polyethylenes used as medical plastics. (Only for LDPE, HDPE, UHMWPE and Ethylene copolymers.)	07

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