Total No. of Questions: 12]

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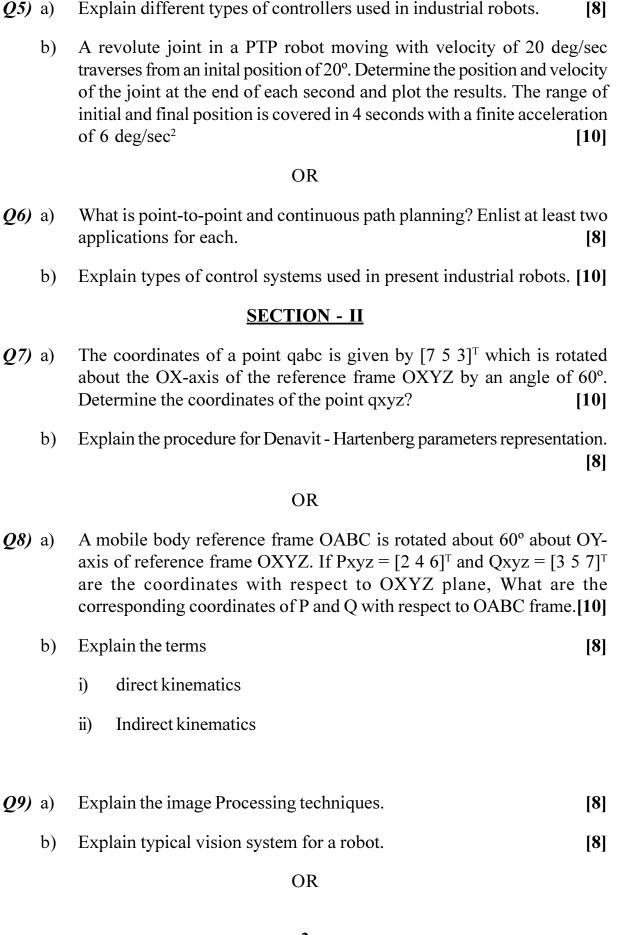
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B.E. (Mechanical)

ROBOTICS

(2008 Pattern) (Semester - II) (Part -II) (Elective - III) (402049 C)

Time: 3 Hours [Max. Marks:100 Instructions to the candidates: 1) Answer any three questions from each section. Answers to the two sections should be written in separate books. 2) Neat diagrams must be drawn wherever necessary. 3) 4) Figures to the right indicate full marks. *5*) Use of electronic pocket calculator is allowed. **6**) Assume suitable data, if necessary. **SECTION - I** Define a robot and state its related three laws. **Q1)** a) [8] Give classification of robot in detail. b) [8] OR Explain the anatomy of a robot. [8] **Q2)** a) What are the socio economic aspects of robotisation? [8] b) Which sensor can be used along with the gripper to sense whether the *Q3*) a) object is falling? Explain the working principle. [8] Explain the criteria for gripper design. b) [8] OR Discuss in brief "classification of grippers used in robotics". *Q4*) a) [8] Discuss the various characteristics of sensing devices used in industrial b) robot. [8]



Q10) a)	Explain the following (Any 2).		[10]
	i)	Image acquisition	
	ii)	Sampling	
	iii)	Edge detection	
b)	Write various technical features required of robot for spot weld spray coating application.		and [6]
<i>Q11)</i> a)	Exp	plain various characteristics of induction motor.	[8]
b)	Exp	plain WAIT, DELAY, SIGNAL command with suitable example.	[8]
Q12) a)	Wri	te a note on stepper motor.	[8]
b)	Ext	plain generations of robot programming language.	[8]

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