B.E. Sem. VII – CMPN – Rev. 27 Oct 2015

Robotics and AI

QP Code : 8531

(3 Hours)

[Total Marks : 100]

N.B.: (1) Question No. 1 is compulsory
(2) Write any four questions out of remaining.
(3) Assume suitable data if required.

1	(a)	Discuss Belief network.	5
	(b)	Explain Heuristic function with example.	5
	(c)	Describe robot workspace.	5
	(d)	Explain Screw Transformation.	5
2	(a)	Explain A* search with example.	10
	(b)	What is Uncertainty? Explain Bayesian network with example.	10
3	(a)	Explain various methods of knowledge representation with example.	10
	(b)	Explain steps in problem formulation with example.	10
4	(a)	Obtain Inverse Kinematic solution for 4-axis SCARA Robot.	10
	(b)	Discuss various position sensors used in robots.	10
5	(a)	Discuss partial order planning giving suitable example.	10
	(b)	Explain supervised, unsupervised and reinforcement learning with example.	10
6	(a)	Explain the structure of learning agent. What is role of critic in learning?	10
	(b)	Describe different types of environments applicable to AI agents.	10
7		Write short note on	20
	(a)	Properties of environment	
	(b)	Limitations of Hill-Climbing, Algorithm	
	(c)	PROLOG	
	(d)	Crypt Arithmetic	