

BE (Comp) SEM VII (Rev) 14/5/13  
Robotics & AI  
May 2013

D : PH (April Exam) 213

Con. 8341-13.

(REVISED COURSE)

GS-5419

(3 Hours)

[ Total Marks : 100

**N.B.** (1) Question No. 1 is **compulsory**.

(2) Answer any **four** questions out of remaining six questions.

(3) Assume suitable **data** wherever **necessary**.

1. (a) Find the inverse kinematic solution of 4-axis SCARA Robot. 10  
(b) Explain utility-based agent with the help of neat diagram. 10
  2. (a) Write a note on Reactive Behavioural System. 10  
(b) Describe the following sensors-- 10
    - (i) Sonar
    - (ii) Infrared.
  3. (a) Compare different uninformed search strategies. 10  
(b) Explain A\* Algorithm. What is the drawback of A\* ? Also shows that A\* is optimally efficient. 10
  4. (a) Describe Hill Climbling Algorithm. What are it's limitations ? 10  
(b) Explain various method of knowledge representation with example. 10
  5. (a) Define Reach and stroke, Degree of Freedom and Accuracy. 10  
(b) Define partial order planner. Explain STRIPS representation of planning problem. 10
  6. (a) Explain the learning Agent with the help of suitable diagram. 10  
(b) What are PEAS descriptors ? Give PEAS descriptor for-- 10
    - (i) part-picking robot
    - (ii) WUMPUS WORLD.
  7. Write short note on following :- 20
    - (a) Belief Network
    - (b) PROLOG
    - (c) Crypt Arithmetic
    - (d) GPS.
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