BE/IT/VII(R) 27/5/13
Artificial Intelligence

AGJ 1st half (n)con-code 727

Con. 9263-13. **(REVISED COURSE)** **GS–5863**

(3 Hours) **[Total Marks : 100**

N.B. :(1) Question No. **1** is **compulsory**.
(2) Attempt any **four** of the remaining **six** questions.

Q1a) **Explain the working of a learning agent with example.** [08]

b) **What is knowledge?** [04]

c) **Explain conditional probability and its use in AI** [08]

Q2a) **What are Min-Max Search and α-β pruning?** [08]

b) **Show the use of α-β pruning for a two person game with example.** [12]

Q3a) **Differentiate between Unidirectional and Bidirectional Search.** [05]

b) **Apply Bidirectional Search to travel from A to K. The table gives edge cost between 2 nodes.** [15]

	A	B	C	D	E	F	G	H	I	J	K
A		17		8		2		9		6	
B	17		2		4	5	1		6		90
C		2		9			2			7	
D	8		9								
E		4									
F	2	5					5			7	
G		1	2			5					
H	9								56		
I		6						56			
J	6		7			7				99	
K		90									

Q4. Using a predicate logic convert the following sentences to predicates and prove that the statement "Ram did not jump?" is false. [20]

a) **Ram went to temple.**
b) **The way to temple is, walk till post box and take left or right road.**
c) **The left road has a ditch.**
d) **Way to cross the ditch is to jump.**
e) **A log is across the right road.**
f) **One needs to jump across the log to go ahead.**

[TURN OVER

Q5a) Consider Judges of volumes 3 and 7 units are available. Show the trace to measure 2 and 5 units. [10]

b) What is Ontology? How is it useful in knowledge representation? [10]

Q6a) Design a multilayer 'Exclusive OR (XOR)' neural network. [10]

b) How is a formal grammar used by a communicating agent? Explain with example. [10]

Q7a) Write a note on Simulated Annealing. [10]

b) Write a note on comparative analysis of search techniques. [10]