

07th January 2022

Guidelines (as per LOCF)

Artificial Intelligence (BHCS13) Discipline Specific Core Course - (DSC)

B.Sc. (Hons) Computer Science-VI Sem

UNIT	Chapters	Reference
1	Chapter 1: 1.1, 1.4 Chapter 2: (complete)	2
2	Chapter 4 (complete) Chapter 7: (Complete)	3
3	Chapter 5: 5.1, 5.2, 5.3, 5.6 Chapter 6: 6.1, 6.2	3
4	Chapter 2: 2.1, 2.2, 2.3 Chapter 3: 3.2 up to 3.2.2, 3.3 up to 3.3.2, 3.5, 3.6	1
5	Chapter 12: 12.1, 12.2, 12.3	1
	Chapter 1: 1.1, 1.2, 1.3, 1.4, 1.5 Chapter 2: 2.1, 2.2 Chapter 3: 3.1, 3.2, 3.4 Chapter 5: 5.1, 5.2, 5.3 Chapter 6: 6.7.2	4
6	Chapter 12: 12.1, 12.2, 12.3, 12.4 up to pg 247 (upto recursive transition network)	3
7	1. https://interestingengineering.com/ethics-of-ai-benefits-and-risks-of-artificial-intelligence-systems 2. https://royalsocietypublishing.org/doi/full/10.1098/rsta.2018.0080 3. https://law-campbell.libguides.com/ld.php?content_id=58542260	Online Resources

References

1. Rich, E. & Knight, K. (2012). *Artificial Intelligence*. 3rd edition. Tata McGraw Hill.
2. Russell, S.J. & Norvig, P. (2015) *Artificial Intelligence - A Modern Approach*. 3rd edition. Pearson Education
3. Patterson, D.W. (2015). *Introduction to Artificial Intelligence and Expert Systems*. 1st edition. Pearson Education.
4. Bratko, I. (2011). *Prolog Programming for Artificial Intelligence*. 4th edition. Pearson Education



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Lab/ Practical Questions based on Artificial Intelligence (BHCS13)

1. Write a prolog program to calculate the sum of two numbers.
2. Write a Prolog program to implement $\text{max}(X, Y, M)$ so that M is the maximum of two numbers X and Y .
3. Write a program in PROLOG to implement factorial (N, F) where F represents the factorial of a number N .
4. Write a program in PROLOG to implement $\text{generate_fib}(N, T)$ where T represents the N th term of the fibonacci series.
5. Write a Prolog program to implement GCD of two numbers.
6. Write a Prolog program to implement power ($\text{Num}, \text{Pow}, \text{Ans}$) : where Num is raised to the power Pow to get Ans .
7. Prolog program to implement $\text{multi}(N1, N2, R)$: where $N1$ and $N2$ denotes the numbers to be multiplied and R represents the result.
8. Write a Prolog program to implement $\text{memb}(X, L)$: to check whether X is a member of L or not.
9. Write a Prolog program to implement $\text{conc}(L1, L2, L3)$ where $L2$ is the list to be appended with $L1$ to get the resulted list $L3$.
10. Write a Prolog program to implement $\text{reverse}(L, R)$ where List L is original and List R is reversed list.
11. Write a program in PROLOG to implement $\text{palindrome}(L)$ which checks whether a list L is a palindrome or not.
12. Write a Prolog program to implement $\text{sumlist}(L, S)$ so that S is the sum of a given list L .
13. Write a Prolog program to implement two predicates $\text{evenlength}(\text{List})$ and $\text{oddlength}(\text{List})$ so that they are true if their argument is a list of even or odd length respectively.
14. Write a Prolog program to implement $\text{nth_element}(N, L, X)$ where N is the desired position, L is a list and X represents the N th element of L .
15. Write a Prolog program to implement $\text{maxlist}(L, M)$ so that M is the maximum number in the list.
16. Write a prolog program to implement $\text{insert_nth}(I, N, L, R)$ that inserts an item I into N th position of list L to generate a list R .
17. Write a Prolog program to implement $\text{delete_nth}(N, L, R)$ that removes the element on N th position from a list L to generate a list R .
18. Write a program in PROLOG to implement $\text{merge}(L1, L2, L3)$ where $L1$ is first ordered list and $L2$ is second ordered list and $L3$ represents the merged list.