BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: MTECH   SEMESTER : II
BRANCH: AIML   SESSION : SP/2023

SUBJECT: CS636 EVOLUTIONARY COMPUTING

TIME: 3 Hours   FULL MARKS: 50

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

			CO	BL
Q.1(a)	To stop the flow of Program using Evolutionary Algorithm, what criterions may you follow? State the conditions of each criterion.	[5]	1	4
Q.1(b)	What is Fitness Function? Design two fitness function for any two applications and discuss the impact of your design.	[5]	1	5
Q.2(a)	Analyze different types of Selection mechanism available in GA with their suitability of application.	[5]	2	4
Q.2(b)	How Messy Genetic Algorithms works? Show each steps properly.	[5]	2	5
Q.3(a)	State and explain Generic Competitive Coevolutionary Algorithm with some example.	[5]	3	2
Q.3(b)	Use GA for the given function to solve: 2p + 2q + 3r - 3s = 60. Find the value of p, q, r, and s that satisfy the given equation. Show each step clearly (along with underlying assumptions if any).	[5]	3	6
Q.4(a)	Give some examples of Multi-objective Problems. Explain the concept of Pareto Optimality with respect to your example.	[5]	4	2
Q.4(b)	With some suitable mathematical example show the concept of Weighted Sum Method, e-Constraint Method in Multi-objective Evolutionary Optimization.	[5]	4	3
Q.5	Write short notes on (i)CS-1 (ii) CL-1 and (iii) TB	[10]	5	2

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