BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2024)

CLASS: IMSC **SEMESTER : VI**
BRANCH: Math & Comp **SESSION : SP/2024**

SUBJECT: CS303 OPERATING SYSTEM

TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

			CO	BL
Q.1(a)	What are three objectives of an OS design?	[2]	1	L1
Q.1(b)	List five main services provided by an operating system and explain how each creates convenience for users.	[3]	1	L2
Q.2(a)	What is multiprogramming and multiprocessing?	[2]	1	L1
Q.2(b)	What are the major advancement in the OS components (hardware/software) that leads towards the development of Modern Operating Systems?	[3]	1	L3
Q.3(a)	What is multithreading?	[2]	2	L1
Q.3(b)	What are two differences between user-level threads and kernel-level threads? Under what circumstances is one type better than the other?	[3]	2	L4
Q.4(a)	Describe the differences among short-term, medium-term, and long-term scheduling.	[2]	2	L2
Q.4(b)	Explain different issues regarding thread scheduling.	[3]	2	L2
Q.5(a)	What are the functions of dispatcher?	[2]	2	L2
Q.5(b)	Five batch jobs A through E, arrive at computer centre at almost the same time. They have estimated running times of 10, 6, 2, 4 and 8 minutes. They have externally determined priorities as 3, 5, 2, 1 and 4 respectively, with 5 being the highest priority. For the following scheduling algorithms, determine the mean turnaround time. i) round robin ii) Priority scheduling and iii) SJF	[3]	2	L3

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