No. SEM-II /PS/M&H/KITS/2025   Date: 27/01/2025

CIRCULAR

Sub:ILSemester-AllotmentofPracticumtopics–Reg.

Allotment of Practicum topics to students

Section : 2IT-I

S.No.	Roll number of the student	Practicum topic allotted	Practicum under the course	Course faculty
1	B24IT001	Hybrid Solar Charger	EP	Dr.N.Maramu
2	B24IT002	Light intensity controller for an auditorium	EP	Dr.N.Maramu
3	B24IT003	Real time water level indicator and alert	EP	Dr.N.Maramu
4	B24IT004	system	EP	Dr.N.Maramu
5	B24IT005	Humidity Indicator and Controller	EP	Dr.N.Maramu
6	B24IT006	ULTRASONIC DISTANCE SENSOR - ARDUINO	EP	Dr.N.Maramu
7	B24IT007	Simple Clap Switch Circuit	EP	Dr.N.Maramu
8	B24IT008	Automatic Water Dispenser	EP	Dr.N.Maramu
9	B24IT009	LPG Gas Sensor Circuit	EP	Dr.N.Maramu
10	B24IT010	LED blink test using Arduino	EP	Dr.N.Maramu
11	B24IT011	Touchless Doorbell For The Post-Covid World	EP	Dr.N.Maramu
12	B24IT012	Arduino based traffic signal control	CAO	Mr.R.Gautam
13	B24IT013	Simulate 1-bit branch prediction and handling delays	CAO	Mr.R.Gautam
14	B24IT014	Simulate 2-bit branch prediction and handling delays	CAO	Mr.R.Gautam
15	B24IT015	Performance analysis of execution time with and without pipelining	CAO	Mr.R.Gautam

16	B24IT016	Simulate direct mapping	CAO	Mr.R.Gautam
17	B24IT017	Simulate Associative mapping	CAO	Mr.R.Gautam
18	B24IT018	Simulate Set Associative mapping	CAO	Mr.R.Gautam
19	B24IT019	Performance analysis with and without cache memory	CAO	Mr.R.Gautam
20	B24IT020	Simulate the operations of datapath	CAO	Mr.R.Gautam
21	B24IT021	Simulate the functionality of DMA	CAO	Mr.R.Gautam
22	B24IT022	Simulate page replacement algorithm for cache memory	CAO	Mr.R.Gautam
23	B24IT023	**Hostel Room Allocation: Unit 1:** Manage room details using arrays with traversal, addition, and deletion., **Unit 2:** Use stacks to track past room allocations. **Unit 3:** Represent rooms and their occupants using linked lists. **Unit 4:** Sort rooms by rent using Insertion Sort.	DS	Dr.T.Senthil Murugan
24	B24IT024	**Fitness Center Membership Management :** **Unit 1:** Use arrays to store member details with operations like add, delete, search, and traverse. Utilize dynamic memory allocation for scaling. **Unit 2:** Use stacks to track recent check-ins (LIFO order) and implement a log for canceled memberships. **Unit 3:** Manage membership plans dynamically using a singly linked list. **Unit 4:** Sort members by subscription duration using Shell Sort.	DS	Dr.T.Senthil Murugan
25	B24IT025	**Weather Data Monitoring System: Unit 1:** Store weather readings (temperature, humidity) in arrays with dynamic memory allocation for time-based data. **Unit 2:** Use stacks to calculate averages and store hourly data for quick access. **Unit 3:** Dynamically manage weekly data using a singly linked list. **Unit 4:** Sort data by temperature using Insertion Sort or Shell Sort.	DS	Dr.T.Senthil Murugan
26	B24IT026	**Bus Transport Scheduling System: Unit 1:** Use arrays to manage bus schedules with binary search for quick lookups. **Unit 2:** Use a circular queue to manage ticket bookings. **Unit 3:** Represent bus routes dynamically using a doubly linked list. **Unit 4:** Sort buses by departure times using Radix Sort.	DS	Dr.T.Senthil Murugan
27	B24IT027	**Food Supply Chain Management: Unit 1:** Use arrays to track inventory at distribution centers with operations like add, delete, and search. **Unit 2:** Use queues to manage food delivery schedules and prioritize urgent orders. **Unit 3:** Use a circular linked list to dynamically manage routes between distribution centers. **Unit 4:** Hash item IDs for fast inventory lookups, with collision	DS	Dr.T.Senthil Murugan

		handling using open hashing.		
28	B24IT028	**Vehicle Parking System: Unit 1:** Use arrays to manage parking slot availability with insertion and deletion for slot assignment. **Unit 2:** Use stacks to implement LIFO parking for single-lane parking areas. **Unit 3:** Use a doubly linked list to manage parked vehicles dynamically, enabling traversal in both directions. **Unit 4:** Sort vehicles by entry time using Insertion Sort.	DS	Dr.T.Senthil Murugan
29	B24IT029	**Agricultural Land Monitoring System: Unit 1:** Use arrays to store data on agricultural lands (e.g., area, crop type) with traversal and dynamic memory allocation for additional records. **Unit 2:** Use stacks to analyze historical crop yield data and calculate averages. **Unit 3:** Use a doubly linked list to dynamically manage irrigation schedules for different lands. **Unit 4:** Hash land plot IDs for efficient retrieval and collision resolution using closed hashing.	DS	Dr.T.Senthil Murugan
30	B24IT030	**Sports Tournament Management: Unit 1:** Use arrays to manage team details with operations like addition, deletion, and binary search for team names. **Unit 2:** Use queues to schedule matches dynamically. **Unit 3:** Use a circular linked list to manage tournament rounds, allowing navigation between matches. **Unit 4:** Sort teams by scores using Shell Sort.	DS	Dr.T.Senthil Murugan
31	B24IT031	**Water Distribution System: Unit 1:** Use arrays to track water supply to different areas and dynamically allocate memory for new connections. **Unit 2:** Use queues to prioritize water distribution requests. **Unit 3:** Use a circular doubly linked list to manage daily schedules for water supply to different zones. **Unit 4:** Hash area IDs for efficient monitoring, resolving collisions using open hashing.	DS	Dr.T.Senthil Murugan
32	B24IT032	**Online Examination System: Unit 1:** Use arrays to store question banks with traversal and search operations. **Unit 2:** Use a stack to handle navigation through questions, enabling "previous" and "next" functionality. **Unit 3:** Manage student answer submissions dynamically using a linked list. **Unit 4:** Sort student scores using Shell Sort for ranking.	DS	Dr.T.Senthil Murugan
33	B24IT033	**Traffic Signal System: Unit 1:** Represent traffic signal timers in arrays and dynamically allocate memory for adding new signals.: **Unit 2:** Use stacks to manage timer history or	DS	Dr.T.Senthil Murugan

		perform recursive calculations. **Unit 3:** Represent roads and intersections as linked lists. **Unit 4:** Hash signal IDs for efficient lookup, resolving collisions with closed hashing.		
34	B24IT034	Verification of mesh analysis using MATLAB-SIMULINK or PSPICE	BEE	Mr.T.Praveen Kumar
35	B24IT035	Nodal analysis using MATLAB	BEE	Mr.T.Praveen Kumar
36	B24IT036	Voltage and current relationships between line & phase quantities for balanced 3-phase star connections.	BEE	Mr.T.Praveen Kumar
37	B24IT037	LED blink test using Arduino using TINKERCAD	BEE	Mr.T.Praveen Kumar
38	B24IT038	Verification of Superposition theorem using MATLAB-SIMULINK	BEE	Mr.T.Praveen Kumar
39	B24IT039	Verification of Maximum Power Transfer theorem using MATLAB-SIMULINK	BEE	Mr.T.Praveen Kumar
40	B24IT040	Verification of nodal analysis using MATLAB-SIMULINK or PSPICE	BEE	Mr.T.Praveen Kumar
41	B24IT041	Mesh analysis using MATLAB	BEE	Mr.T.Praveen Kumar
42	B24IT042	Voltage and current relationships between line & phase quantities for balanced 3-phase delta connections	BEE	Mr.T.Praveen Kumar
43	B24IT043	Interfacing sensors with Arduino using TINKERCAD	BEE	Mr.T.Praveen Kumar
44	B24IT044	Efficiency calculation of a transformer using open circuit & short circuit test	BEE	Mr.T.Praveen Kumar
45	B24IT045	Deforestation and its Role in Climate Change and Habitat loss.	ES	Dr.T.Madhukar Reddy
46	B24IT046	Effects of Air Pollution on Urban Public Health.	ES	Dr.T.Madhukar Reddy
47	B24IT047	Role of Green Chemistry in Reducing Industrial Pollution	ES	Dr.T.Madhukar Reddy
48	B24IT048	Influence and Impact of Climate Change on Local Biodiversity	ES	Dr.T.Madhukar Reddy
49	B24IT049	Innovations and Challenges Sustainable Waste Management	ES	Dr.T.Madhukar Reddy
50	B24IT050	The Effects of Environmental Pollution and Water Pollution on Marine life	ES	Dr.T.Madhukar Reddy
51	B24IT051	Evaluating Environmental Impacts of Hydroelectric Power	ES	Dr.T.Madhukar Reddy
52	B24IT052	Effects of Agricultural Pollutants on Ecosystems	ES	Dr.T.Madhukar Reddy

53	B24IT053	Ecological Effects of Micro plastics in Freshwater and Marine Ecosystems.	ES	Dr.T.Madhukar Reddy
54	B24IT054	Eigen values and Eigenvectors: Their Role in Dimensionality Reduction	MTVC	Dr.B.Yakaiah
55	B24IT055	Matrix Representation of Graphs and Networks	MTVC	Dr.B.Yakaiah
56	B24IT056	Double Integrals to Model Heat Distribution in 2D Systems	MTVC	Dr.B.Yakaiah
57	B24IT057	The Use of Beta and Gamma Functions in Fluid Dynamics and Navier-Stokes Solutions	MTVC	Dr.B.Yakaiah
58	B24IT058	Divergence of Vector Fields: Modeling Fluid Flow and Continuity Equation	MTVC	Dr.B.Yakaiah
59	B24IT059	Differentiation of Vector Fields in Computer Graphics: Gradient, Normal, and Tangent Vectors	MTVC	Dr.B.Yakaiah
60	B24IT060	Vector Differentiation for Environmental Modeling: Water Pollution Dispersion	MTVC	Dr.B.Yakaiah
61	B24IT061	Application of Vector Differentiation in Seismology: Analyzing Stress and Strain in Earth's Crust	MTVC	Dr.B.Yakaiah
62	B24IT062	Divergence Theorem and Its Role in Heat Transfer Analysis	MTVC	Dr.B.Yakaiah
63	B24IT063	Vector Integration in Modeling Ocean Currents and Their Environmental Impact"	MTVC	Dr.B.Yakaiah
64	B24IT064	Analyzing Wind Flow Patterns Using Line and Surface Integrals	MTVC	Dr.B.Yakaiah

Note:

1. The students should meet immediately the allotted course faculty for practicum and start working on the practicum with the guidance of course faculty.

2. To complete the Practicum, the student shall work in laboratories under supervision of allotted course faculty, in the allotted hours in the classwork timetable and also outside the class work hours during weekdays.

3. The course faculty are advised to guide the allotted students for practicum during the semester course work.

(Signature of class teacher)

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