PAPER ID-310964

Subject Code: KOT711

Roll No: | | | | | | | | | | | | | |

BTECH
(SEM VII) THEORY EXAMINATION 2023-24
OPEARTING SYSTEM FOR IOT

TIME: 3 HRS **M.MARKS: 100**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief.

Q no.	Question	Marks	CO
a.	What is a process in the context of an operating system for IoT?	2	1
b.	Name three essential tools used in IoT operating system development.	2	1
c.	What is Micro python, and how does it differ from traditional Python?	2	2
d.	List two key advantages of using Micro python in IoT applications.	2	2
e.	What role does hardware play in the implementation of Micro python?	2	3
f.	How does Micro python interact with sensors in IoT devices?	2	3
g.	What are the basic steps to write and execute a Micro python program?	2	4
h.	Explain functions in Micro python with example.	2	4
i.	Name two key features of Windows 10 IoT Core that make it suitable for IoT applications.	2	5
j.	How does Windows 10 IoT Core handle device communication and connectivity?	2	5

SECTION B

2. Attempt any *three* of the following:

a.	Explain the significance of toolchains in the development of IoT applications, and how they contribute to the overall efficiency of the system.	10	1
b.	Provide a detailed overview of the architecture of Micro python and how it enables seamless integration with IoT hardware.	10	2
c.	Describe the key features and functionalities of Micro Python-ready boards. Provide examples of Micro Python-ready boards and their specific use cases.	10	3
d.	Compare and contrast the implementation and use of fundamental data structures in Micro Python with their counterparts in standard Python.	10	4
e.	How does Windows 10 IoT Core address security concerns in IoT ecosystems?	10	5

SECTION C

3. Attempt any *one* part of the following:

a.	Discuss the role of processes in managing and coordinating hardware resources in an IoT operating system. Provide examples to illustrate your points.	10	1
b.	Explore the challenges and considerations in selecting hardware for IoT devices, and how these choices impact the overall system performance.	10	1

4. Attempt any *one* part of the following:

a.	Explore the advantages and challenges of using Micro python in comparison to traditional programming languages for IoT development.	10	2
b.	Discuss the core features of Micro python and how they facilitate rapid prototyping and development in IoT applications.	10	2

5. Attempt any *one* part of the following:

a.	Analyze the compatibility of Micro python with different hardware platforms commonly used in IoT devices and evaluate the factors influencing hardware selection.	10	3
b.	Delve into the networking capabilities of Micro python on Pyboard and WiPy. How does Micro python facilitate the integration of these boards into Wi-Fi networks?	10	3

6. Attempt any *one* part of the following:

a.	Explore the principles of modularization in Micro python, emphasizing the creation	10	4

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	and use of modules, functions, and classes.		
b.	Discuss the differences between built-in functions and user-defined functions in Micro python. Illustrate how functions can enhance code readability, reusability, and maintainability	10	4

7. Attempt any *one* part of the following:

a.	Discuss the compatibility and interoperability of Windows 10 IoT Core with different IoT hardware.	10	5
b.	Describe the key features and functionalities offered by Windows 10 IoT Core for IoT applications.	10	5