No. of Printed Pages : 4

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# CE1.5-R4 : MOBILE COMPUTING

**DURATION : 03 Hours** **MAXIMUM MARKS : 100**

**Roll No. :** | | | | | | |

**Answer Sheet No. :** | | | | | | |

**Name of Candidate :** _____ **; Signature of Candidate :** _____

**INSTRUCTIONS FOR CANDIDATES :**

- Carefully read the instructions given on Question Paper, Answer Sheet.
- Question Paper is in English language. Candidate has to answer in English Language only.
- **Question paper contains Seven questions. The Question No. 1 is compulsory. Attempt any FOUR Questions from Question No. 2 to 7.**
- **Parts of the same question should be answered together and in the same sequence.**
- **Questions are** to be answered in the **ANSWER SHEET** only, supplied with the Question Paper.
- **Candidate cannot leave the examination hall/ room without signing on the attendance sheet and handing over his/her Answer Sheet to the Invigilator. Failing in doing so, will amount to disqualification of Candidate in this Module/Paper.**
- After receiving the instruction to open the booklet and before answering the questions, the candidate should ensure that the Question Booklet is complete in all respects.

**DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.**

**1.** (a) Explain the basic architecture of a mobile computing system with a simple diagram.

(b) What are the key features of GPRS that make it suitable for mobile data communication ?

(c) Explain the role of CSMA/CA in wireless LANs.

(d) What is tunneling in Mobile IP ?

(e) State two limitations of traditional TCP over mobile networks.

(f) What is hoarding in mobile databases ? Why is it important ?

(g) Define WML. How is it different from HTML in mobile context ?

**(7x4)**

**2.** (a) Write short notes on the following:

(i) Point Coordination Function (PCF) in IEEE 802.11

(ii) HiperLAN standards and its types

(b) Explain the purpose of selective tuning in mobile data dissemination.

**(8+10)**

**3.** (a) Describe MACA and MACAW protocols. How do they improve wireless transmission ?

(b) Define mobile agents. How do they assist in service discovery and file management ?

(c) What is cache invalidation ? Explain any one method.

**(6+6+6)**

**4.** (a) Explain Dynamic Host Configuration. What role does it play in mobile computing ?

(b) Compare and explain DSR and AODV routing protocols in Mobile Ad Hoc Networks.

(c) What is trust in information security ? Describe different security models and frameworks commonly used to ensure secure communication and data protection in networks.

**(6+6+6)**

**5.** (a) What is J2ME ? Explain its architecture, configurations, and profiles. How is it useful in mobile application development ?

(b) Explain the working of Snooping TCP and how it improves TCP performance.

(c) What is Freeze TCP ? How does it help in mobile communication ?

**(6+6+6)**

6. (a) What are transaction models in mobile databases? Describe any two transaction models and explain how they handle disconnections and mobility.

(b) Define broadcast disks. How do they help mobile users ?

(c) Explain the client-server computing architecture. What are its advantages and disadvantages in mobile environments ? Give suitable examples.

**(6+6+6)**

7. (a) Compare the architecture and key features of Symbian OS and Palm OS.

(b) What are the essential requirements for a mobile operating system ?

(c) What are authentication protocols ? How do they enhance security in mobile computing ?

**(6+6+6)**

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**SPACE FOR ROUGH WORK**