Code No: **R41054** **R10** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, March - 2017

MOBILE COMPUTING

(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1 a) Discuss about various VHF and UHF frequencies, their transmission properties, advantages and disadvantages. [8]

b) A signal $S(t) = S_0 \sin(2 \pi \times 2000 \times t)$ is to be transmitted. Find the time period, frequency, and phase angle at t = 0, 0.5ms, 0.75ms, 1ms, and 3ms for the signal. [7]

2 a) Discuss in detail about the limitations of mobile devices. [8]

b) What are set top boxes? Explain the working principle of set top boxes. [7]

3 a) What are the three services that integrate into a GSM system? Explain each of them with a neat sketch. [9]

b) Describe the transparent and non-transparent data transmission. How does the FEC help in reducing BER? [6]

4 a) Discuss about WCDMA 3G communication standards. [8]

b) Explain the use orthogonal codes for coding the multiple user channels before transmitting. How does the receiver distinctly identify user channel after decoding? [7]

5 a) List out the layers of OSI reference model. Discuss the functionalities of each layer in brief. [8]

b) What are the reasons for the unsuitability of traditional TCP to mobile networks? Explain the mobile TCP solution to this problem. [7]

6 a) Illustrate the architecture for data synchronization in mobile computing systems. Explain the terms replication, consistency, data conflict, and discrepancy in data in mobile computing systems. Give examples of data conflict and data discrepancy. [8]

b) Describe the functions of a mobile agent. Why does an agent move from tier to tier during an application? Distinguish between an agent and a server. [7]

7 a) Describe the important properties of MANETs. [8]

b) Explain the advantages of MANETs and wireless sensor networks integrated with IPv6. [7]

8 a) Explain the basic protocol layers of 802.11 receiver and transmitter. [8]

b) Explain the WAP 1.1 architecture. [7]