ADAMAS UNIVERSITY
SCHOOL OF ENGINEERING AND TECHNOLOGY

END-SEMESTER EXAMINATION: DECEMBER 2019

(Academic Session: 2020 – 21, Semester Term: Aug 2020– Jan 2021)

Name of the Program: BCA | Semester: V
Stream: CSE
PAPER TITLE: Mobile Computing | PAPER CODE: EEC33101
Maximum Marks: 40 | Time duration: 3 hours
Total No. of questions: 09 | Total No of Pages: 02

Note:

1. Please follow all the Instructions given on the cover page of the Answer Booklet Strictly.
2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page.
3. Assumptions made if any, should be stated clearly at the beginning of your answer.
4. No Mobile Phones will be permitted in the Examination Hall.

Answer all the Groups

Group A

(Answer all the questions)

$5 \times 1 = 5$

1. **a)** Write down the two criteria to find the nearest co-channel neighbors of a particular cell.

b) What kind (in context of directional properties) of links is used in Ring topology? What is the total number of directions in which data is transmitted?

c) What are the three main block of WAP architecture? Explain.

d) What is the full form of CHOP in context of Ad Hoc networks?

e) Name two famous switching techniques employing setup phase and tear down phase. What is the full form of VCI?

Group B

(Answer any three questions)

$3 \times 5 = 15$

2. Explain WAP architecture with the aid of suitable block diagram. Compare WAP protocol stack with OSI protocol stack. [3+2]

3. What is the security issues related to WAP? Also, comment on the role of WAP gateway in this context. [3+2]

4. Explain and compare AM to ASK and FM to FSK with the help of suitable waveforms. What is the fundamental difference between the digital and analog modulation techniques? [4+1]

5. Explain the significance of frequency reuse in enhancing capacity of a cellular network with proper mathematical equations and assumptions. [5]

6. What is data mining? Explain any two kinds of catching effects and their associated industrial applications for Mobile as well as IoT. [1+4]

Group C

(Answer any two questions)

$2 \times 10 = 20$

7. a) Draw and explain the GSM architecture in brief. Also, explain and illustrate the various interfaces used in GSM.

b) Differentiate MANETS from VANETS using suitable comparison table. Explain the components of VANET's. Name the technology which supports multi-hop communication between vehicles.

[4+3+2+1]

8. Explain Why the shape of a cell is chosen to be a hexagon? What is handoff? What is the difference between hard handoff and soft handoff? Justify the statement "The margin given by $\Delta = P_{r\ handoff} - P_{r\ minimum\ usable}$, cannot be too large or too small." [2+1+3+4]

9. a) Explain Push based mechanism and Pull based mechanism for wireless channels in brief with suitable illustrations.

b) Explain Cell splitting and Cell sectoring techniques for improving capacity in cellular systems.

[6+4]

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