

# END SEMESTER EXAMINATION – 2022

Semester : 6th

Subject Code : CO-601

## MOBILE COMPUTING

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

### Instructions :

1. All questions of PART-A are compulsory.
2. Answer any *five* questions from PART-B.

### PART – A

Marks – 25

1. Fill in the blanks : 1×5=5
  - (a) 1G generations of mobile communication uses analog signals.
  - (b) A satellite signal transmitted from a satellite transponder to earth's station is uplink.

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(c) channel capacity is the maximum number of channels that can be provided in a fixed frequency band.

(d) APK in Android stands for Android package kit.

(e) Soft handoff is also known as make before break.

2. Write True or False : 1×5=5

(a) SCTP protocol transfer packets in a GPRS core network.

(b) Android is based on Linux for security, portability and networking.

(c) Bandwidth of FDMA channel is narrow.

(d) Kernel level security is not provided in Android.

(e) Reason for adopting hexagon shape of cell in comparison to square and triangle is largest area.

3. Choose the correct answer :  $1 \times 5 = 5$

(a) What are the requirements of mobile IP ?

- (i) Compatibility      (ii) Transparency  
(iii) Security      (iv) All of these

(b) Which of the following virtual machine is used by the Android operating system ?

- (i) Virtual machine  
(ii) Dalvik virtual machine  
(iii) JVM  
(iv) All of the above

(c) Mobile phone uses

- (i) Half Duplex      (ii) Full Duplex  
(iii) Both      (iv) None of these

(d) Frequency reuse factor for  $n$  number of cells in a system is

- (i)  $n$       (ii)  $n^2$   
(iii)  $2n$       (iv)  $1/n$

(e) Which stores all devices identifications registered for this network ?

- (i) VLR
- (ii) AUC
- (iii) EIR
- (iv) HLR

4. Answer the following questions in brief :

1×5=5

- (a) Which interface is used to communicate between BTS with MS ?
- (b) Which mobile communication protocol allows the users to move from one network to another with the same IP address ?
- (c) What is the function of an AuC ?
- (d) What is the basic unit of cellular system ?
- (e) Does Android support other language than Java ?

5. Define the following :

1×5=5

- (a) Linear Layout
- (b) Cell Splitting
- (c) Mobile OS
- (d) Handover
- (e) Activity in Android

**PART – B**

**Marks – 45**

6. (a) Define Mobile Computing. What are the challenges in Mobile Communication ?  
1+4=5
- (b) State the different modes for mobile communication. 4
7. (a) Explain packet delivery mechanism in mobile IP network with suitable diagram. 6
- (b) Explain the functions performed by MSC in GSM architecture. 3
8. (a) Define the properties of cell structure. 3
- (b) Define Handoff. Write in details about the various types of handover in GSM. What are the reasons for handover ? 1+3+2=6
9. (a) Explain GPRS and its protocol architecture. 6
- (b) What is the use of uplink and downlink frequencies ? 3

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10. (a) Write the difference between Explicit and Implicit Intent. 4
- (b) Explain Android platform with its features. 5
11. (a) Why you cannot run the standard Java byte code on Android ? 3
- (b) Describe GSM architecture and its services in details. 6
12. Write short notes on any *three* : 3×3=9
- (a) Security services of GSM
- (b) Different Generations of wireless networks
- (c) Mobile communication via satellite
- (d) Android SDK
- (e) Different types of Layout in Android.

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