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|  | Academic Year 2018/2019 Level Four (SE, IT) Wireless and Mobile Computing (IT431) (60 marks) 2 Pages |  |
| Kafrelsheikh University | | College of Computers and Information |
| Date: 13/6/2019 | | Time: 180 minutes |

Question number one: (40 Marks)

a. Choose the most correct answer: (40 Marks)

- 1) Permits the integration of different voice and data services and the interworking with existing networks using Subscriber Identity Module:

a. Handover b. Mobile Computing c. Infotainment d. GSM e. none is true

- 2) When mobile station moves out of the range of a BTS, decreasing the received signal level, this requires the process of:

a. Handover b. Mobile Computing c. Infotainment d. GSM e. none is true

- 3) Describes technologies that enable people to access network services anyplace, anytime, and anywhere:

a. Handover b. Mobile Computing c. Infotainment d. GSM e. none is true

- 4) Ad-hoc gaming networks, GPS, contact to a local base station, or triangulation where you are, are examples of:

a. Handover b. Mobile Computing c. Infotainment d. GSM e. none is true

- 5) Uses of Forward Error Correction (FEC), which codes redundancy into the data stream and helps to reconstruct the original data in case of transmission errors:

a. Bearer services b. Tele-services c. Supplementary services d. all true

- 6) Consists of stereoscopic displays to the user, is coupled to the user via sensors that sense user pose in the VE so that the display portrays the appropriate viewpoint.

a. Bearer services b. Tele-services c. Supplementary services d. all true

- 7) Includes user identification, call redirection, or forwarding of ongoing calls, barring of incoming/outgoing calls, AoC:

a. Bearer services b. Tele-services c. Supplementary services d. all true

- 8) Contains all the mechanisms necessary for wireless transmission (TDMA, FDMA etc.):

a. AUC b. EIR c. HLR d. VLR e. BTS f. None is true

- 9) Responsible for informing MS with location changing to localize users:

a. AUC b. EIR c. HLR d. VLR e. BTS f. None is true

10) Contains information about the identity of mobile equipment that prevents calls from stolen, unauthorized or defective mobile stations:

| | | | | | |
|--------|---------------|--------|--------|--------|-----------------|
| a. AUC | b. <u>EIR</u> | c. HLR | d. VLR | e. BTS | f. None is true |
|--------|---------------|--------|--------|--------|-----------------|

11) A centralized scheme with one master station and several slave stations:

| | | | | |
|---------|-------------------|---------------------|---------|-------------|
| a. MACA | b. <u>Polling</u> | c. Reservation TDMA | d. PRMA | e. all true |
|---------|-------------------|---------------------|---------|-------------|

12) Tries to avoid the exposed terminals by transmitting RTS first.

| | | | | |
|----------------|------------|---------------------|---------|-------------|
| a. <u>MACA</u> | b. Polling | c. Reservation TDMA | d. PRMA | e. all true |
|----------------|------------|---------------------|---------|-------------|

13) Guarantees each station a certain bandwidth and a fixed delay.

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|---------|------------|----------------------------|---------|-------------|
| a. MACA | b. Polling | c. <u>Reservation TDMA</u> | d. PRMA | e. all true |
|---------|------------|----------------------------|---------|-------------|

14) Slots can be reserved implicitly, a certain number of slots form a frame:

| | | | | |
|---------|------------|---------------------|----------------|-------------|
| a. MACA | b. Polling | c. Reservation TDMA | d. <u>PRMA</u> | e. all true |
|---------|------------|---------------------|----------------|-------------|

15) A scheme for satellite systems. Increases the amount of users in a pool of satellite channels that are available for use by any station in a network:

| | | | | |
|---------|----------------------|---------|-------------------|-------------|
| a. DAMA | b. Reservation Aloha | c. CSMA | d. <u>a&b</u> | e. all true |
|---------|----------------------|---------|-------------------|-------------|

16) Sensing the carrier is combined with a back-off scheme in case of a busy medium to achieve some fairness among competing stations:

| | | | | |
|---------|----------------------|----------------|--------|-------------|
| a. DAMA | b. Reservation Aloha | c. <u>CSMA</u> | d. a&b | e. all true |
|---------|----------------------|----------------|--------|-------------|

17) Which of the following is not a MANET feature:

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|-----------------------|-------------------------------|------------------------------|----------------------|------------------------|
| a. Fast establishment | b. Service discovery protocol | c. Peer-to-Peer connectivity | d. Limited bandwidth | e. <u>none is true</u> |
|-----------------------|-------------------------------|------------------------------|----------------------|------------------------|

Question number two: (20 Marks)

a. Find the right ordering to terminate a mobile call: (10 Marks)

- 3) 1) The GMSC can now forward the call setup request to the MSC indicated.
- 6) 2) VLR signals to the MSC to setup a connection to the MS.
- 4) 3) The MSC requests the VLR for the current status of the MS
- 1) 4) PSTN identifies the number belongs to a user in GSM network and forwards the call setup to the Gateway MSC.
- 2) 5) HLR checks for number existence and its subscribed services and requests an MSRN from the current VLR.
- 5) 6) The BTSs of all BSSs transmit the paging signal to the MS.

b. List difficulties faced routing in ad-hoc networks, then list Routing Algorithms in MANET. (10 Marks)

Best Regards

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