Course name: Mobile Computing
Midterm Exam 2018-2019
Date: 6 Nov. 2018

Sections: 4th year IT & IS & SE
Time: 1H

ose the correct answer and shade the answer sheet with one answer only:

Mobile computing system differs from stationary systems in all of the following except:

A) Non-functionality requirements
B) The task they perform
C) The way they are designed
D) Functionality requirements

_____ is the ability of the device and the software application to obtain location information while being used

A) Location awareness B) Localization C) Location sensitivity D)None of the them

____are the set of properties that distinguish the mobile computing system from the stationary computing system

) Limitation of mobility B) Condition of mobility C) Dimension of mobility D)characteristics of mob

Mobility includes:

A) Moving between different networks
B) Moving between different applications
C) Moving between different geographical areas
D) All of the above

If a device doesn't have GPS capabilities but uses a cellular network for wireless connectivity

A) Triangulation method can be used to detect the location
B) Scene analysis can be used to detect the location
C)The location couldn't be detected
D)Proximity method can be used

Which of the following functions should be provided by mobile computing platforms?

A)Multichannel system B)handling power consumption C) handle QoS requirements D) All

_____are initiated by the system to a single user, it requires a timely response from the user

A) Synchronous active transactions
B) Asynchronous active transactions
C) Synchronous passive transactions
D) Asynchronous passive transactions

VLR and HLR in wireless mobile communication systems are:

A) Gateways for outer connectivity
B) Databases of registered users
C) Routers and call management servers
D) All of the above

Main reasons for a handoff in wireless networks are:

A) Weak signal in cell and heavy cell load
B) Heavy cell load
C) Base station moves from cell to cell
D) frequency reuse

The high-level plan of mobile software application is known as___

A) Condition of Mobile software applications
B) Architecture of Mobile software applications
C) Dimension of Mobile software applications
D) Plan of Mobile software applications

The Logical channel inside a cell is _____

A) Data channel B) Control channel C) a&b D)Reuse channel

Which of the following is considered example on mobile computing operating system?

A) ios & android B) ios & windows C) android & windows D) All

Collision detection is difficult to be sensed in IEEE802.11 standard because of:

A) Hidden terminal problem B) fading problem C) Propagation problem D) All of the above

In IEEE802.11 standard , RTS is considered a____

A) Broadcast message B) multicast message C) unicast message D) All of the above

In IEEE802.11 standard , CTS is considered a____

A) Broadcast message B) multicast message C) unicast message D) All of the above

Questions (16-20)

A user multiplexed -based system, shown in the Figure 1 , has a total bandwidth of 30MHz and contains 20 control channels per cell with equal channel spacing of 30 kHz. The area of each cell is equal to 8km^2, and cells are required to cover a total area of 3600km^2. Calculate:

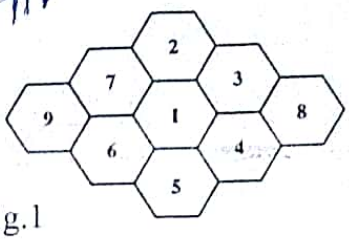

Fig.1

16- The total number of required cluster cells

A) 20 B) 9 C)50 D)10

17- The cell radius

A) 1.6 km B) 33.8km C)12km D) 8km

18- The reuse distance

A)62.3km B) 8.3km C)175.6km D)36km

19- Total number of traffic channels/cell

A)820 B)91 C)1000 D) 100

20- If each channel is multiplexed among 5 users, then the total number of calls by each cell is:

A)455 B) 164 C)2000 D)500

Questions (21-23)

Consider a cell of 4 channels, If 18 requests are generated by users per half an hour, and the average holding time is 200 *sec*, then:

21- average call arrival rate λ is:

A) 36 Erlang B) 2 Erlang C) 100 Erlang D) 800 Erlang

22- The blocking probability B_c is:

A) 4% B)9.5% C)1.2% D) 12%

23- The QoS is:

A) 96% B)98.8% C) 90.5% D) 100%

24- Validating the information of subscriber originating the call is done by:

A) BS B)MSC C)HLR D) VLR

25- Which standard uses DSSS process?

A) IEEE 802.11a B) IEEE 802.11b C) IEEE 802.11g D) IEEE 802.15

26- Which of the following standard gives WLAN operations at data rate up to 54 Mbps?

A) IEEE 802.11a B) IEEE 802.11b C) IEEE 802.11g D) IEEE 802.15

27- The cluster cell structure identified by i=4 and j=2 contains___ cell

A) 6 cells B) 19 cell C) 28 cell D) none of them

28- In _____, beacon frames are sent from Aps to hosts

A) Passive scanning B) active scanning C)reactive scanning D) None of the above

29- In IEEE802.11 standard , _____ is responsible for collision avoidance

A) MS B) BS C) MSC D)PSTN

30- In IEEE802.11 standard, ACK is considered a____

A) Broadcast message B) multicast message C) unicast message D) All of the above

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GOOD LUCK