A/ Sem V / Choice Based

Paper / Subject Code: 56601 / Wireless and Mobile technology

(3 Hours) **[Total Marks: 80]**

N.B. : 1) Question No.1 is **compulsory.**
2) Attempt any **three** from the remaining **five** questions.
3) Figures to the right indicate full marks

1. (a) How is Spread spectrum useful in Wireless Communication? Explain FHSS and DSSS. (10)
   (b) Discuss the different transmission impairments in wireless communications. (10)

2. (a) What is an antenna? Elaborate different kinds of antenna. (10)
   (b) Explain the standard of Bluetooth? Draw the state diagram and elucidate the various states of bluetooth. (10)

3. (a) Discuss the system architecture of IEEE 802.11 with diagram. Write a note on its services. (10)
   (b) Explain GSM system architecture in detail with a diagram. State the difference between GSM and GPRS . (10)

4. (a) Explain Indirect TCP and Snooping TCP with its advantages and disadvantages. (10)
   (b) What are MANETs? Analyze the routing algorithms in MANETs. (10)

5. (a) Write a note on : i) iMode ii) SyncML iii) WML and WML Script. (10)
   (b) Explain the concept of Dynamic Source Routing (DSR). How is it different from Destination Sequence Distance Vector (DSDV)? (10)

6. (a) What are the problems of WLAN? What are the weakness of WEP? What changes are to be made in WPA and WPA2 to overcome the weakness. (10)
   (b) Describe WAP Programming Model. Explain the role of WAP gateway and WAP user agent profile. (10)

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[3 Hours] [Total Marks : 80]

Please check whether you have got the right question paper.

N.B:
1. **Q.1** is **compulsory**.
2. Attempt **any three** out of remaining **five**.
3. **Figures** to the **right** indicate **full marks**.

1. A) What is distributed cloud computing? Describe distributed computing system models. **(10)**
   B) Explain in detail cloud deployment models. **(10)**

2. A) What is scope of parallel computing? Explain applications of parallel computing **(10)**
   B) What are commonly used semantics for ordered delivey of multicast meassages? Explain in detail casual ordering. **(10)**

3. A) What are features of good global scheduling algorithm. Explain task assignment approach in detail? **(10)**
   B) Differntiate between grid computing and cloud computing. **(10)**

4. A) What is RPC model? Explain in detail complicated RPC. **(10)**
   B) Explain in detail issues in designing a distributed operating system. **(10)**

5. A) What is process management? Explain features of a good process migration. **(10)**
   B) What is logical clock concept? Explain implementation of logical clocks with suitable diagram. **(10)**

6. A) Explain implementation of sequential consistency model with suitable diagram. **(10)**
   B) Write a short note on the following : **(10)**
   I. SOA
   II. Virtulaization
   III. Identity and access management
   IV. CORBA

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Time: 3 Hours **Total Marks : 80**

Note: Question No. **1** is **compulsory.**
Attempt any **three** from the remaining **five** questions.
All questions carry equal marks.

Q1 a) What is System complexity space? Differentiate between interaction complexity and work domain complexity. (10 marks)

b) Explain the UX lifecycle process in detail. (10 Marks)

Q2. a) How one should be prepared for contextual enquiry before the visit. (10 Marks)

b) Explain in brief emotional impact of user experience (10 Marks)

Q3. a) List the different members in UX team and explain their roles. (10 Marks)

b) What is T prototype and local prototype in UX design process. (10 Marks)

Q4. a) State guidelines to be used synthesizing the work activity nodes. (10 Marks)

b) Explain the nature of gap between analysis and design using diagram. (10 Marks)

Q5. a) Differentiate between Wire Framing and Prototype. (10 marks)

b) Explain Mapping between Designers and User Mental Model with help of Neat Diagram. (10 marks)

Q6. a) Explain various data Collection Techniques in detail. (10 marks)

b) Write short note on i) Work Role ii) User Personas (10 Marks)

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sem-V / Paper / Subject Code: 56605 / Elective I : Machine Learning / May-2019
choice based.

Total Marks: 80

(3 Hours)

N.B. (1) Question No. 1 is compulsory.
(2) Attempt any three from the remaining five questions.
(3) Answers to questions should be grouped and written together.

Q.1 (a) Explain classification with logistic regression and sigmoid function. [10]

(b) Explain implementation of classification can be improved with AdaBoost algorithm. [10]

Q.2 (a) Consider following data of **buying computer** and classify a tuple [10]
X= (age <=30, Income = medium,Student = yes, Credit_rating = Fair)
Using Bayesian classifier.

Age	Income	Student	Credit-rating	buy-
<30	high	no	fair	no
<=30	high	no	excellent	no
31….40	high	no	fair	yes
>40	medium	no	fair	yes
>40	low	yes	fair	yes
>40	low	yes	excellent	no
31-40	low	yes	excellent	yes
<=30	medium	no	fair	no
<=30	low	yes	fair	yes
>40	medium	yes	fair	yes
<=30	medium	yes	excellent	yes
31-40	high	yes	fair	yes
31-40	medium	no	excellent	yes
>40	medium	no	excellent	no

(b) Explain the various steps in developing Machine learning application [10]

Q.3 (a) Construct Decision tree based on ID3 for the following training data [10]

Day	Outlook	Temp.	Humidity	Wind	Decision
1	Sunny	Hot	High	Weak	No
2	Sunny	Hot	High	Strong	No
3	Overcast	Hot	High	Weak	Yes
4	Rain	Mild	High	Weak	Yes
5	Rain	Cool	Normal	Weak	Yes
6	Rain	Cool	Normal	Strong	No
7	Overcast	Cool	Normal	Strong	Yes
8	Sunny	Mild	High	Weak	No
9	Sunny	Cool	Normal	Weak	Yes
10	Rain	Mild	Normal	Weak	Yes
11	Sunny	Mild	Normal	Strong	Yes
12	Overcast	Mild	High	Strong	Yes
13	Overcast	Hot	Normal	Weak	Yes
14	Rain	Mild	High	Strong	No

(b) Describe working of support vector machine and the calculation of maximum margin [10]

Q.4 (a) Explain agglomerative clustering with suitable algorithm. [10]

(b) Explain the following terms [10]
i. Bias
ii. Error
iii. Accuracy
iv. Variance
v. Dimensions

Q.5 (a) Describe principal component analysis and its importance. [10]

(b) What is clustering? Explain K means clustering algorithm. Explain K-Means clustering algorithm. Using K-means clustering, cluster the following data into two clusters and show each step. {2, 4, 10, 12, 3, 20, 30, 11, 25} [10]

Q.6 Write short note on **(Attempt any Four)** [20]
(a) Recommender systems
(b) Applications of machine learning
(c) Anomaly detection
(d) Big data analysis
(e) Supervised VS unsupervised learning

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A/SEM V (Choice Base)

Paper / Subject Code: 56606 / Elective I : Internet of Things /MAY 2019

(3 Hours) **Total Marks: 80**

Note:

a) Question No.1 is compulsory.
b) Attempt any three from the remaining five questions.
c) Answer to sub questions should be answered together.
d) Illustrate answers with diagrams wherever necessary.

Q1	A	What is M2M? Explain M2M to IOT architecture in detail.	10
	B	Explain IOT in terms of agriculture with suitable example	10
Q2	A	Explain open source prototyping platform for IOT.	10
	B	Explain Wireless Sensor Networks in detail	10
Q3	A	Explain Functional View, Information View architectural views of IOT reference architecture.	10
	B	What is ONS (object naming service)? Explain.	10
Q4	A	Explain sensors and interfacing for IOT.	10
	B	Explain in detail application of internet of things in city automation and home automation.	10
Q5	A	Explain in detail design guidelines for Internet of Things.	
	B	How big data can be use in IOT? Explain.	10
Q6		Write short note (any four)	20

i) M2M value chains
ii) IOT reference model
iii) Real World design constraints
iv) SOA
v) Cloud computing
vi) Embedded systems

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Sem-V Choice Based

(3 Hours) Total Marks: 80

N.B.: (1) Q.1 is compulsory.
(2) Attempt any three out of remaining five.
(3) Figures to the right indicate full marks.

Q 1A)	Define MIS? Explain impact of MIS.	[10]
B)	What is Strategic Management of the Business? How is Information system used as a strategic tool?	[10]
Q 2 A)	Explain prototype and life cycle approach in development of MIS.	[10]
B)	Explain ascertaining the class of information.	[10]
Q 3A)	What are different Characteristics of Business decision making?	[10]
B)	What are different stages in decision making process? State the difference between structure and unstructured decision	[10]
Q 4A)	Explain general model of a human as information processor.	[10]
B)	Define knowledge management system. What is the driving force behind knowledge management (KM)?	[10]
Q 5A)	What is E-Commerce? Explain application of E-Commerce.	[10]
B)	Explain in detail Technology and tools for protecting information.	[10]
Q 6A)	Explain the factors increasing the threats to information security	[10]
B)	Write a short note on any two of the following:	[10]

i) Scope of E-Commerce
ii) Rational decision making
iii) Business Intelligence
iv) MIS

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MCA
Sem-V Choice Based

Paper / Subject Code: 56611 / Elective II : Green Computing / May - 2019

(3 Hours) **[Total Marks: 80]**

N.B.: 1) Question No.1 is **compulsory.**
2) Attempt any **three** out of remaining **five.**
3) Figures to the right indicate full marks.

1. (a) Explain in detail the climate change, global warming, greenhouse gases and greenhouse effect with suitable example. (10)
   (b) What is meant by green IT? Why is it gaining greater relevance and importance ? (10)

2. (a) How software impact the environment and the energy consumption of computing systems? (10)
   (b) Discuss the concept of Greening computers entire life cycle with suitable diagram. (10)

3. (a) What are the different stages in the lifecycle of an electronic device? Explain the impact of every stage on environment. (10)
   (b) Which environmentally sensitive materials are typically used in the manufacturing of a product like notebook and smart phones? Discuss the alternative for each material. (10)

4. (a) Which are the programming methods used to achieve computational efficiency? (10)
   (b) What is fueling the growth for data center capacity? (10)

5. (a) Discuss the different power states of a hard disk. (10)
   (b) What are the benefits of Energy Efficient Networks? (10)

6. (a) Explain the business dimensions for green IT transformation. (10)
   (b) Describe in detail the green building standards and green data centers. (10)
