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Roll No. ....

312504

December 2023

BCA (DS) – V SEMESTER

Intellectual Property & Rights (BCA-DS-304)

Time : 3 Hours]

[Maximum Marks : 75

Instructions :

1. It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.
2. Answer any four questions from Part-B in detail.
3. Different sub-parts of a question are to be attempted adjacent to each other.

#### PART-A

1. (a) List out some major functions of WIPO. (1.5)  
(b) Identify the importance of patent in technological world. (1.5)  
(c) How the novelty is to be identified? (1.5)  
(d) What is Intellectual property? (1.5)  
(e) Name any two legitimate rights of a patent owner. (1.5)  
(f) What is meant by infringement of patents? Give an example for it. (1.5)

- (g) What is the role of injunctions in the event of patents infringement? (1.5)
- (h) Identify any three items which are not patentable as laid down in the Patent Act, 1970. (1.5)
- (i) What is meant by 'Non-Obviousness' condition related to Patenting? (1.5)
- (j) Narrate how EMR differs from Patent Right. (1.5)

### PART-B

- 2. (a) What do you understand by IPR? What are different types of intellectual properties? Discuss in detail the economic importance of IPRs. (10)
- (b) What are the various functions of Indian Patent Office? (5)
- 3. (a) Discuss in detail the key elements/features available in Patent Act, 1970. (10)
- (b) What are the amendments made to Patent Act, 1970 in year 1999, 2000, 2002 and 2005? (5)
- 4. (a) What are the key features of Protection of plant varieties and Farmers, Right Act, 2001? (10)
- (b) What is a Patent? What kind of inventions can be protected by a Patent? (5)
- 5. (a) Describe the sequential Patent filling procedures in India, from initial registration to the final Patent grant. (10).
- (b) Explain Exclusive and Non-exclusive licenses in IPR. (5)

6. (a) Who is an infringer? Explain the preventive measures and remedies applicable to the willful infringement of Trademarks and other IP Rights. (10)
- (b) Describe the compulsory licensing of Patent in India. (5)
7. Write short notes on any three of the following:  
(a) Patenting of Micro-organism.  
(b) Constitutional Aspects of Property.  
(c) Revocation of Patents.  
(d) Defences of Infringement. (15)

December 2023  
**BCA(DS)- V SEMESTER**  
**Machine Learning - 1 (BCA-DS-302)**

Max. Marks:75

Time: 3 Hours

- Instructions:**
1. It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.
  2. Answer any four questions from Part -B in detail.
  3. Different sub-parts of a question are to be attempted adjacent to each other.

**PART -A**

- Q1 (a) What is the role of preprocessing of data in machine learning? (1.5)  
 (b) How can outlier values be treated? (1.5)  
 (c) What is Ensemble Learning? (1.5)  
 (d) What is the standard approach to supervised learning? (1.5)  
 (e) What is overfitting? How it can affect model generalization? (1.5)  
 (f) What is Model Selection in Machine Learning? (1.5)  
 (g) Define Logistic Regression. (1.5)  
 (h) Why is ML important? (1.5)  
 (i) What is 'training Set' and 'test Set' in a Machine Learning Model? (1.5)  
 (j) Write any two applications of Machine Learning. (1.5)

**PART -B**

- Q2 (a) How many types of Data can be represented in machine learning algorithms. (7)  
 (b) Explain different types of learning in Neural Network with example. (8)
- Q3 (a) Explain K means clustering by taking suitable example. (8)  
 (b) What are the parameters to evaluate different machine learning algorithm. (7)
- Q4 What are Support Vector Machines? Why do we need to use Support Vector (15) Machines? How do Support Vector Machines Work? Describe the significance of Kernel functions in SVM. List any two kernel functions.
- Q5 (a) What is Self Organizing Maps? Explain Unsupervised learning of clusters in (10) detail with example.  
 (b) Distinguish between bagging and boosting. (5)
- Q6 (a) What is Regression ? Explain with its Types. Also explain by taking a suitable (10) example.  
 (b) What are the benefits of pruning in decision tree induction? Explain different (5) approaches to tree pruning?
- Q7 How naïve Bayes is suitable for supervised learning, how does it works? (15) explain by taking a suitable example. What are merit and demerits of it?

BCA December 2023  
 (DS) V SEMESTER  
 Organizational Behaviour (BCA-DS-303)

Max. Marks: 75

Time: 3 Hours  
Instructions:

1. It is compulsory to answer all the questions (1.5 marks each) of part -A in short.
2. Answer any four questions from Part -B in detail.
3. Different sub-parts of a question are to be attempted adjacent to each other.

PART -A

- Q1 (a) Differentiate between leadership and management. (1.5)  
 (b) What is the role of Management Information System (MIS) in decision-making (1.5)  
 within an organization?  
 (c) Provide examples of socially responsible business practices. (1.5)  
 (d) Differentiate between planning and plan. (1.5)  
 (e) How is planning related to controlling? (1.5)  
 (f) Briefly outline the stages of the perception process. (1.5)  
 (g) What distinguishes a team from a group? (1.5)  
 (h) Explain the impact of group cohesiveness in group performance. (1.5)  
 (i) Discuss the ethical implications of political behavior in the workplace. (1.5)  
 (j) Identify the key components of organizational culture. (1.5)

PART -B

- Q2 (a) Trace the evolution of management thoughts from the classical to the modern (10)  
 era while highlighting key theories and their contributions.  
 (b) What is problem-solving? Outline the steps involved in a systematic problem-solving process. (5)
- Q3 Define motivation and its importance in organizational behavior. Compare and contrast Maslow's Hierarchy of Needs Theory and Herzberg's Two-Factor Theory along with their practical applicability for managers. (15)
- Q4 Explain common sources of conflict in the workplace. Outline strategies for effectively managing and resolving conflicts in an organizational setting. (15)
- Q5 Discuss the key functions of a leader. Compare and contrast different leadership styles. Which style do you think is the best, justify? (15)
- Q6 Explain the concept of organizational structure and its importance. Discuss various types of organizational structures. How does the organizational structure influence individual and group behavior within the workplace? (15)
- Q7 Outline the steps involved in the change management process. Discuss the challenges associated with implementing change in large organizations. (15)

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December 2023  
BCA(DS) 5th Sem.  
Big Data-1 (BCA-DS-301)

Max Marks: 75

Time: 3 Hours

Instructions:

1. It is compulsory to answer all the questions (1.5 marks each) of Part - A in short.
2. Answer any four questions from Part - B in detail.
3. Different sub-parts of a question are to be attempted adjacent to each other.

**PART-A**

- Q1 (a) What do you understand by the term 'Big Data'? (1.5)  
 (b) Explain the difference between structure and unstructured data. (1.5)  
 (c) What are different modes in which HADOOP can run? (1.5)  
 (d) What are the most common input formats in Hadoop? (1.5)  
 (e) What is commodity hardware? (1.5)  
 (f) What is the another name of Generic class? (1.5)  
 (g) What is the default block size in HDFS? (1.5)  
 (h) What is Heartbeat signal in HDFS? (1.5)  
 (i) What is serialization? (1.5)  
 (j) What does peek() function do in JAVA? (1.5)

**PART-B**

- Q2 (a) Draw and Explain architecture of Big Data with all its components and characteristics. (10)  
 (b) Explain with proper diagram The four V's of Big Data (5)
- Q3 (a) What is the difference between generics and wrapper classes in java? (5)  
 (b) Write a program to implement Stack(Push and Pop operations) in JAVA (10)
- Q4 What is serialization? How do we Serialize object, write a program to serialize and deSerialize object and persist it in file ? (15)
- Q5 (a) Draw the architecture of map-reduce programming model. Explain with proper example. (10)  
 (b) Explain the role of Job Tracker and task tracker briefly. (5)
- Q6 (a) Draw and explain with proper diagram all the building blocks of HDFS. (10)  
 (b) Differentiate between GFS/HDFS. (5)
- Q7 Write short note on (any Three): (15)
  - i) YARN
  - ii) History of Big Data
  - iii) HIVE and PIG
  - iv) Generic Types in JAVA.

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**312507**

**December 2023**  
**BCA (DS) 5th SEMESTER**  
**Management Information System (GEC-DS-9)**

Time : 3 Hours]

[Max. Marks : 75]

**Instructions :**

1. It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.
2. Answer any four questions from Part-B in detail.
3. Different sub-parts of a question are to be attempted adjacent to each other.

**PART-A**

1. (a) Differentiate between Data and Information. (1.5)  
(b) What do you mean by information overload? (1.5)  
(c) What is EDP? (1.5)  
(d) What are the limitations of MIS? (1.5)  
(e) What is the need to develop the prototype of a system? (1.5)  
(f) What is an expert system? What is its need in an organization? (1.5)  
(g) What is the role of database in information systems? (1.5)  
(h) What is the use of a Decision tree? (1.5)

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6. (1) What are the limitations of file processing system? (1.5)

(1) What is the difference between ERP and CRM? (1.5)

### PART-B

2. (a) Define System. What are the characteristics of system? Explain why feedback and control are considered as Key system concepts. (10)

(b) What are the challenges Management Information Systems faces at each level? (5)

3. (a) Explain Decision Support System (DSS) with its process and features. (10)

(b) Why is MIS looked upon as a strategic need of management today? (5)

4. (a) Discuss in detail various phases involved in the development of a system. (10)

(b) Describe Herbert Simon's model of Decision-making (5)

5. (a) "Maintenance is perhaps the biggest challenge in the effectiveness of MIS in any organisation." Explain with suitable examples. (10)

(b) What are the various steps involved in Planning of a MIS? (5)

6. (a) Discuss in detail the process of controlling and evaluating of MIS. (10)  
(b) Explain in detail the conceptual design of MIS. (5)
7. Write short note on the following :  
(a) Pitfalls in MIS development.  
(b) Formal and Informal Information systems.  
(c) Strategies for determining MIS design. (15)
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