

R-3077

Sub. Code

546201

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Information Technology

DATA COMMUNICATION NETWORKS AND SECURITY

(CBCS – 2018 onwards)

Time : 3 Hours

Maximum : 75 Marks

Section A

(10 × 2 = 20)

Answer **all** questions.

1. Define Data Communications.
2. What is meant by Network Reliability?
3. Differentiate Physical and Logical Address.
4. Define Delta Modulation.
5. State the role of Transmission Medium.
6. Mention the concept of FDM.
7. What is MIME?
8. Define the function of Hash Algorithm.
9. State the significance of Authentication Header.
10. Define Buffer Overflow.

Section B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe about Internet Standards.

Or

- (b) Explain about Categories of Communication Networks.

12. (a) Write notes on functions of Application Layer.

Or

- (b) Illustrate the Importance of Interfaces and Modem.

13. (a) Discuss about Wireless Media.

Or

- (b) Explain about Repeaters and Gateways.

14. (a) Describe the role of Pretty Good Policy.

Or

- (b) Illustrate about Transport Layer Security.

15. (a) Write notes on Security Protocols.

Or

- (b) Discuss about Viruses.

Section C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Illustrate about Communication Network Topology.

17. Write notes on Periodic Analog Signals.

18. Describe about Networking and Internetworking Devices.
 19. Discuss in detail about the Secure Electronic Transactions.
 20. Explain the importance of Firewalls.
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R-3078

Sub. Code

546202

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Information Technology

WEB APPLICATION DEVELOPMENT

(CBCS – 2018 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Mention the features of HTML.
2. What is a Hypermedia?
3. Explain the pros and cons of PHP.
4. What is meant by Associative array?
5. Define Function.
6. How will you import user input?
7. What is a Literal? Give an example.
8. What is a Lambda function?
9. How will you multiply strings in python?
10. Define a Metacharacter.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Develop a HTML document to display various Departments in your University as Ordered list.

Or

- (b) Design a frame to display your personal and official data.

12. (a) Explain the various operators used in PHP with example.

Or

- (b) Explain nesting of loops in PHP with example.

13. (a) Explain function with parameters with an example.

Or

- (b) List any Ten library functions with example.

14. (a) Give a brief note on the data types used in Python with example.

Or

- (b) Explain the Scope and Lifetime of a variable with example.

15. (a) Explain the Slice operation with a python program.

Or

- (b) Write a brief note on various string functions used in python with example.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the tags and attributes used in Table and Forms with example.
 17. Write a PHP program to calculate the net pay of an employee. [Assume your own data].
 18. Write a PHP program to write the student data into a file. Write another program to read the data and display it on the screen.
 19. Explain the various branching statements in python with suitable example.
 20. Elaborate on any Five file operations in python with example.
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R-3079

Sub. Code

546501

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Information Technology

E-COMMERCE

(CBCS – 2018 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define semantic web.
2. Name any two protocols related to internet.
3. What is Supply Chain Management in E-Commerce?
4. What is electronic portal?
5. List the usability issues in E-Commerce.
6. What is business model in E-Commerce?
7. Explain EDI in E-Commerce.
8. What is customer segmentation?
9. Give two examples for Medium size business e-commerce software.
10. Explain Electronic wallet.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Discuss in detail the various types of categories in E-Commerce.

Or

- (b) Elaborate on various opportunities of E-Commerce.

12. (a) How E-Business design is different from traditional business design? Discuss.

Or

- (b) Describe E-market maker pattern in detail.

13. (a) What are all the usability issues in E-Commerce? Discuss in detail.

Or

- (b) What is a revenue model? What is a major factor in determining the type of revenue model to use?

14. (a) Why we need to do customer segmentation in E-Commerce? Elucidate with reasons.

Or

- (b) Explain in detail the steps and advantages of EDI.

15. (a) Write a short note on Electronic Fund Transfer (EFT).

Or

- (b) Describe in detail the basic function of E-Commerce software.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain in detail all the rules of E-Business.
 17. Describe in detail about Supply Chain Management in E-Commerce.
 18. Discuss in detail about various revenue models in E-Commerce.
 19. Explain in detail E-Commerce in Business to Business mode.
 20. Discuss advance features of e-commerce software also explain which type of software are preferred for small, mid-size and large business.
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R-3080

Sub. Code

546504

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Information Technology

VIRTUALIZATION AND CLOUD COMPUTING

(CBCS – 2018 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. List the objectives of cloud computing.
2. What are the essential characteristics of cloud computing?
3. What is meant by virtualization?
4. What are the side effects of server virtualization?
5. What are the advantages of “Software As A Service” (SaaS)?
6. What is public cloud?
7. What are the necessary security features of Cloud?
8. What are the risks of storing data in the Cloud?
9. List the various Hadoop file system.
10. What is Open Stack?

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Illustrate the difference between Parallel and Distributed Computing.

Or

- (b) Give a brief account of On-demand Provisioning.

12. (a) Explain the memory and I/O virtualization.

Or

- (b) List short notes on Server virtualization.

13. (a) Explain Cloud service models with architecture.

Or

- (b) Briefly explain the design challenges in the cloud system.

14. (a) Explain Virtual Machine Security.

Or

- (b) Give an account on Resource Provisioning and Platform Deployment.

15. (a) Explain the data flow and control flow of MapReduce.

Or

- (b) State the need of web services in cloud system.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain in detail cloud characteristics and service models.
17. Explain in detail the tools and mechanisms for virtualization.

18. Explain NIST Cloud Computing Architecture in detail.
 19. Illustrate Software-as-a-Service security.
 20. Explain the programming of Google App Engine.
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R-3467

Sub. Code

546101

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Information Technology

ADVANCED DIGITAL COMPUTER ARCHITECTURE

(CBCS – 2018 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. List out the different trends in technology.
2. How can you Measure the performance of a computer system?
3. What is Instruction Level Parallelism?
4. What is data dependence?
5. What is cache?
6. What are the different memory types?
7. Define Shared Memory.
8. Define thread.
9. Define Storage Device with an examples.
10. Define RAID?

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain quantitative principles of computer design.

Or

- (b) Define computer architecture. Illustrate the seven dimensions of an ISA.

12. (a) What are the possible data hazards? Explain them briefly.

Or

- (b) Explain the concept of hardware based speculation technique, with a neat diagram.

13. (a) Explain the basic concepts of memory hierarchy design.

Or

- (b) Discuss about virtual memory with examples.

14. (a) Write a brief discussion about synchronization and its types.

Or

- (b) Explain about Multi-Threading with examples.

15. (a) What are all the errors and failures handled in RAID.

Or

- (b) Discuss about clusters. Give examples.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the different types of addressing modes.
 17. Explain the concept of Instruction Level Parallelism. What are the challenges we are facing in order to exploit ILP?
 18. Discuss about the crosscutting issues in the design of memory hierarchies.
 19. Describe about the Distributed shared memory.
 20. List out the input devices and output devices with examples. What are various backup challenges?
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R-3468

Sub. Code

546102

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Information Technology

DISTRIBUTED OPERATING SYSTEM

(CBCS – 2018 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. What is a distributed system?
2. Mention few examples of distributed systems.
3. Define Process and thread
4. What is clock synchronization?
5. List out the basic operating system functions.
6. Define File
7. What is the purpose of virtual memory
8. What is a Web Service?
9. What are the uses of web services?
10. What is the role of replication in distributed systems?

Part B**(5 × 5 = 25)**

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the concept of parallelism transparency in detail.

Or

- (b) Explain the Various trends in distributed system.

12. (a) Describe the internal and external synchronization of Physical clocks.

Or

- (b) Describe the distributed deadlock detection algorithms.

13. (a) Explain about file accessing models.

Or

- (b) Explain about the features and goal of distributed file system.

14. (a) Discuss about design and implementation issues of DSM.

Or

- (b) Describe sequential consistency DSM.

15. (a) Describe about web proxy caching with examples.

Or

- (b) Explain about the architecture of Distributed web based system.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. What are the difficulties and threats for distributed systems?
 17. Explain the need of Distributed systems its characteristics with example.
 18. Name all modules of file system operations and write in detail about distributed file system requirements.
 19. Contribute your comments on granularity and page replacement issues in the design of distributed shared memory systems.
 20. What are all the features, need and access control used in distributed OS Security Techniques?
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R-3469

Sub. Code

546103

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Information Technology

ADVANCED JAVA PROGRAMMING

(CBCS – 2018 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. What is an Applet?
2. What is multithreading?
3. Write short notes on RMI?
4. What is JVM?
5. What is Java Servlets?
6. Define XML.
7. What is a JAR File?
8. What is BDk?
9. Differentiate between Action Elements and Scripting Elements.
10. Explain JSP.

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) List types of servlets. Explain Lifecycle of servlet.

Or

- (b) Briefly explain about advantages of swing.

12. (a) List out the JDBC Driver types. Explain in detail Type I and Type 2 JDBC driver types.

Or

- (b) Explain JRE, JVM, JDK.

13. (a) Write about TCP/IP Server Socket.

Or

- (b) Write about TCP/IP Client Socket.

14. (a) Explain about Building and Running the EJB samples.

Or

- (b) Explain about EJB to Database Schema Mapping.

15. (a) What are JSP directives? Explain in detail anyone JSP directive.

Or

- (b) Explain the JSP Architecture in detail.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain about the AWT controls in java.
 17. What is an RMI? Explain RMI with suitable examples.
 18. Define Java Servlets. Briefly discuss about lifecycle java Servlets with neat diagram.
 19. Define Enterprise Java beans. Write about its types and uses in JAVA.
 20. What is scripting element in JSP? List the different scripting elements and explain each with suitable example.
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R-3470

Sub. Code

546104

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Information Technology

DATABASE SYSTEMS

(CBCS – 2018 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is the role of Database Administrator?
2. What is data abstraction?
3. What is OLAP?
4. Differentiate between Data Warehouses and Data Marts
5. Define Schema and instance.
6. Define SQL
7. Define Packing and unpacking relations
8. What are the elements of a database?
9. Define the following terms: (a) Entity, (b) Attribute (c) Relationship instance
10. Discuss (a) One to One, (b) One to Many, (c) Many to One, (d) Many to Many

Part B**(5 × 5 = 25)**

Answer **all** questions, choosing either (a) or (b).

11. (a) Discuss some types of database utilities and their functions.

Or

- (b) What is a database schema? What is the difference between external and internal schema?

12. (a) Explain about list out the application of DBMS.

Or

- (b) Discuss about why we need DBMS.

13. (a) Discuss the main categories of data models.

Or

- (b) Discuss about multimedia databases queries and multimedia databases Applications

14. (a) Explain the techniques of special databases query.

Or

- (b) Explain about Spatial Data ad its Spatial Database characteristics.

15. (a) Discuss about Web databases and give Advantages and disadvantages.

Or

- (b) Discuss about architecture of Mobile Databases.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write the general architecture of typical DBMS. What are the effects of data independence in DBMS?
 17. What do you mean by database management system? Explain the various advantages and disadvantages of using DBMS
 18. With a neat diagram, explain the main phases of database design process.
 19. Discuss about Recursive Query Processing and deductive database system with examples
 20. Who are the different types of database end users? Discuss the main activities of each of them.
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R-3471

Sub. Code

546105

M.Sc DEGREE EXAMINATION, APRIL 2019

First Semester

Information Technology

COMPUTER HARDWARE AND PERIPHERALS

(CBCS – 2018 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

Each question carry equal marks.

1. What are the factors affecting a speed of the microprocessor?
2. State the function of given 8085 instructions: JP, JPE, JPO, JNZ.
3. What are the different components found in Motherboard of a computer?
4. What is booting?
5. What is the function of CMOS setup?
6. What is CISC and RISC?
7. What is HDD?
8. What is DDoS?
9. In speed how SATA is different from IDE?
10. What is firewall?

Part B

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Specify the different types of Interrupts in a Microprocessor system, explain?

Or

- (b) What are microcontrollers? Distinguish between a microprocessor and microcontroller.

12. (a) Explain in detail the major components of a Motherboard.

Or

- (b) State the purpose of BIOS? How BIOS is different from CMOS?

13. (a) Distinguish between Dot Matrix/Inkjet printers.

Or

- (b) Explain about hard disk partitioning and formatting

14. (a) What is IDE? Describe IDE connector and specify the signals in IDE interface

Or

- (b) Describe the steps in designing and integration of peripheral devices to a computer system.

15. (a) Write short notes on USB interfaces.

Or

- (b) What are the various types of graphic cards and monitors? Discuss their types and features.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Name the chip available for peripheral interfacing and draw its block diagram. Discuss its various features.
 17. Describe how communication inside the PC takes place over the multiple types of buses.
 18. What are the various types of graphic cards and monitors? Discuss their types and features.
 19. Explain in details the I/O interface from serial and parallel and from parallel to SCSI converter.
 20. In the context of modern technologies, what are the factors of concern to select on optimized configuration in terms of cost and performance?
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