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**PG2S-302-B-23**

**M.Sc. II Semester (CBCS) Degree Examination**

**COMPUTER SCIENCE**

**Computer Fundamentals**

**Paper - OET 2.2**

**(New Syllabus)**

**Time : 3 Hours**                                **Maximum Marks :80**

*Instructions to Candidates:*

    1)  Section-A is Compulsory.

    2)  Answer any Five questions from Section-B.

**SECTION - A**

Answer the following questions.                        **(10×2=20)**

1.  a)  What are the components of digital computer?

    b)  Mention any Four application areas of Computer.

    c)  What is processing speed of computers?

    d)  What is CRT?

    e)  How a barcode reader functions?

    f)  Differentiate between an inkjet printer and a laser printer.

    g)  Differentiate between volatile and non-volatile memory.

    h)  How does a USB pen drive differ from an SD/MMC memory card in terms of usage?

    i)  What is the purpose of using flow charts in program development.

    j)  What is application software? List out the examples.

**SECTION - B**

**(5×12=60)**

2.  a)  Elaborate on the functions and significance of the Control Unit, Arithmetic Logic Unit (ALU), and Input/output functions in a computer system.  **(6)**

    b)  What do you understand by Personal Computer? Explain its various types with their characteristics.  **(6)**

3.  a)  What do you mean by computer system? Explain different types of computer.  **(6)**

    b)  Explain the significance of word length in computer.  **(6)**

4. a) Discuss the working principle of a Magnetic-Ink Character Recognition Reader (MICR) system. (6)

   b) Differentiate between VGA and SVGA. (6)

5. a) What are the different types of printer? Explain any two in detail. (6)

   b) Write a note on following terms. (6)

      i. XGA

      ii. Plotter

      iii. Sound card and Speakers

6. a) Describe the specific applications where EPROM and PROM are commonly used. (6)

   b) What is storage device? Explain primary and secondary storage devices with example. (6)

7. a) Define utility programs and provide examples of common utility programs used in computer systems. (6)

   b) Describe the different types of emails and demonstrate how to compose, send, and reply to emails. (6)

8. Write notes on any **Two** of the following. (2×6=12)

   a) Generations of computers.

   b) Input devices

   c) Physical structure of floppy and hard disk

   d) Programming languages

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**PG2S-301-B-23**

### M.Sc. II Semester Degree Examination
### COMPUTER SCIENCE
### Data Communications and Networks
### Paper - SCT-2.1
### (CBCS, New Syllabus)

**Time : 3 Hours**                                    **Maximum Marks :80**

*Instructions to Candidates:*
      *1)    Section A is compulsory.*
      *2)    Answer any Five questions from section B.*

### SECTION - A

**Answer the following questions.**                                    **(10×2=20)**

1.    a)    List the applications of twisted pair cable.

      b)    Mention the functionalities of physical layer in OSI Model.

      c)    Define Segmentation and reassembly.

      d)    What is damaged frame in error control?

      e)    Define ARQ.

      f)    What is ARM in HDLC

      g)    List the responsibilities of Network Layer.

      h)    What is Circuit switching?

      i)    What is multiplexing mechanism?

      j)    What is process to process delivery of message?

### SECTION - B

**Answer any Five questions.**                                    **(5×12=60)**

2.    a)    Differentiate between half-duplex and full-duplex transmission modes.    **(6)**

      b)    Explain components of data communication.    **(6)**

3.    a)    Describe different types of Network    **(6)**

      b)    Differentiate between guided and unguided transmission medium.    **(6)**

4.    a)    Calculate the CRC for dataword:1101001001 using the divisor:1001    **(6)**

      b)    Compare between flow control and error control    **(6)**

5.    a)    Explain Stop and Wait flow control protocol.    **(6)**

      b)    Describe Repeater and Router in detail.    **(6)**

6.   a)    Describe the characteristics of routing.           **(6)**

     b)    Find the class of the following address         **(6)**

         i)    238.200.159.4

         ii)    200.100.147.2

7.   a)    Illustrate the architecture of WWW.           **(6)**

     b)    What are the responsibilities of transport layer?      **(6)**

8.    Write notes on any **Two** of the following.        **(2×6=12)**

     a)    LAN

     b)    VRC

     c)    Classes of IP Address

     d)    HTML

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**PG2S-300-B-23**

**M.Sc. II Semester Degree Examination**

**COMPUTER SCIENCE**

**Relational Database Management System**

**Paper - HCT-2.2**

**(CBCS, New Syllabus)**

**Time : 3 Hours**                                                    **Maximum Marks :80**

*Instructions to Candidates:*

    1)    Section **A** is compulsory.

    2)    Answer any **Five** questions from section **B**.

**SECTION - A**

Answer the following questions.                                    **(10×2=20)**

1.    a)    List the characteristics of RDBMS.

    b)    Write the functions of Database Administrator.

    c)    Define DML. Name the DML Commands.

    d)    What is relational constraint?

    e)    Why Candidate Key is required?

    f)    Mention the types of attributes with examples.

    g)    Define BCNF

    h)    What is the use of normalization?

    i)    List the TCL commands in SQL with their functionalities.

    j)    What is exception?

**SECTION - B**

2.    a)    Explain in brief Client Server Architecture with an example    **(6)**

    b)    Explain levels of abstraction in DBMS.    **(6)**

3.    a)    What are the major disadvantages of file processing system?    **(6)**

    b)    Explain data independence.    **(6)**

4.    a)    Explain Foreign Key Constraints with examples.    **(6)**

    b)    Consider following schema    **(6)**

    ACCOUNT_HOLDER (account_no, name, account_type, PAN_Number, balance)
Create view on ACCOUNT_HOLDER having

    attributes(account_no, name, PAN_number) when balance is greater than 50000

5.  a)  What is select and project operator in relational algebra? Give one example. (6)

    b)  Write E-R diagram for library management system? (6)

6.  a)  Explain the Transaction management in a database. (6)

    b)  Write the 12 rules (Codd's Law) for fully functional RDBMS. (6)

7.  a)  Explain concurrent execution of transaction (6)

    b)  Consider the following relational schema (6)

        STUDENT(R.NO, Name, DOB, Percentage, DNO)

        DEPARTMENT(DNO,DNAME, HEAD)

        Write relational algebra expressions:

        i)  Find students name and course from computer department

        ii) Get students name who has percentage greater than 70.

8.  Write notes on any **Two** of the following. (2×6=12)

    a)  DBMS Structure

    b)  SQL Join

    c)  ACID properties

    d)  PL/SQL.

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**PG2S-300-B-23**

## M.Sc. II Semester Degree Examination
## COMPUTER SCIENCE

Relational Database Management System

Paper - HCT-2.2

(CBCS, New Syllabus)

**Time : 3 Hours**                                         **Maximum Marks :80**

***Instructions to Candidates:***

    1)     Section **A** is compulsory.

    2)     Answer any **Five** questions from section **B**.

### SECTION - A

Answer the following questions.                                   **(10×2=20)**

1.   a)   List the characteristics of RDBMS.

    b)   Write the functions of Database Administrator.

    c)   Define DML. Name the DML Commands.

    d)   What is relational constraint?

    e)   Why Candidate Key is required?

    f)   Mention the types of attributes with examples.

    g)   Define BCNF

    h)   What is the use of normalization?

    i)   List the TCL commands in SQL with their functionalities.

    j)   What is exception?

### SECTION - B

2.   a)   Explain in brief Client Server Architecture with an example         **(6)**

    b)   Explain levels of abstraction in DBMS.                      **(6)**

3.   a)   What are the major disadvantages of file processing system?   **(6)**

    b)   Explain data independence.                                   **(6)**

4.   a)   Explain Foreign Key Constraints with examples.              **(6)**

    b)   Consider following schema                             **(6)**

        ACCOUNT_HOLDER (account_no, name, account_type, PAN_Number, balance)
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5. a) What is select and project operator in relational algebra? Give one example. (6)

   b) Write E-R diagram for library management system? (6)

6. a) Explain the Transaction management in a database. (6)

   b) Write the 12 rules (Codd's Law) for fully functional RDBMS. (6)

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   b) Consider the following relational schema (6)

      STUDENT(R.NO, Name, DOB, Percentage, DNO)

      DEPARTMENT(DNO,DNAME, HEAD)

      Write relational algebra expressions:

      i) Find students name and course from computer department

      ii) Get students name who has percentage greater than 70.

8. Write notes on any **Two** of the following. (2×6=12)

   a) DBMS Structure

   b) SQL Join

   c) ACID properties

   d) PL/SQL.

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