

UG (CBCS) (First Year) Annual
EXAMINATION

2305061

B.Sc. COMPUTER SCIENCE

Problem Solving Using Computer (Core)

COMP101TH

Time : 3 Hours]

[Maximum Marks : 50

The candidates shall limit their answer precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt *Five* questions in all, selecting *one* question each from Units I, II, III and IV.
Q. No. 1 (Part A) is compulsory.

Part A

(Compulsory Question)

1. Attempt all parts :

1×10=10

- (i) What is the smallest unit of the information ?
- (ii) What is atom ?
- (iii) What do you mean by mainframe computers ?
- (iv) What is Top-Down approach of Programming ?
- (v) What is a regular expression ?
- (vi) What is the difference between continue and pass statements ?

Fill in the blank spaces :

(vii)CU..... Unit acts as the central nervous system of the computer.

(viii) DVD stands for.....

*Dis
Disk*

State whether the statement is True or False :

(ix) ALU is the place where the actual executions of instructions take place during the processing operation.

(True or False)

(x) Magnetic tape is a type of direct access device.

(True or False)

Part B

Unit I

2. Discuss various generations of computers and also discuss its characteristics. 10
3. Discuss various Units of a Computer System and also explain the function of each. 10

Unit II

4. What is an algorithm ? How is it used as a problem solving tool ? Also differentiate it from decision table. 10

5. What is debugging ? Discuss the types of errors in programming. **10**

Unit III

6. Discuss the key features of Python. Also give the structure of Python Program. **10**
7. What is an operator ? Discuss various operators available in Python. **10**

Unit IV

8. What is the difference between lists and tuples ? Discuss Python modules in detail. **10**
9. Discuss Inheritance in Python with a suitable example. **10**

(2053)

UG (CBCS) (First Year) Annual
EXAMINATION

2305062

B.Sc. COMPUTER SCIENCE

Office Automation Tools (Core)

COMP102-TH

Time : 3 Hours]

[Maximum Marks : 50

The candidates shall limit their answer precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt *Five* questions in all, selecting *one* question each from Units I, II, III and IV.
Q. No. 1 (Part A) is compulsory.

Part A

(Compulsory Question)

1. Attempt all parts : 1×10=10
- (i) Explain the process of renaming a file.
 - (ii) What is the purpose of Format Painter ?
 - (iii) What is open source software ?
 - (iv) What is pivot table in MS-Excel ?
 - (v) Define Header and Footer.
 - (vi) What is Page Orientation ?
 - (vii) Define Slide Show.
 - (viii) Define Cell Address.
 - (ix) Each box in a spreadsheet is called is called a.....
 - (x)feature of PowerPoint allows you to create a given simple presentation quicker.

Part B

Unit I

2. Discuss the main features of MS-Office in detail.

3. What is Libre Office ? Discuss its advantages over other Office packages. 10

Unit II

4. Explain, How margins and spaces are managed in MS-Word. 10
5. Write short notes on the following in respect of M.S.-Word : $2 \times 5 = 10$

- (i) Menus
- (ii) Bullets and Numbering
- (iii) Subscript and Superscript
- (iv) Page Orientation
- (v) Drop Cap.

Unit III

6. What do you mean by copying, moving and merging cells in MS Excel ? 10
7. What are the different standard chart types available in MS-Excel ? Explain the previewing and printing charts option in MS-Excel. 10

Unit IV

8. Explain the process of inserting objects to a presentation. What are the various objects that can be inserted in a PowerPoint presentation ?

10

9. Explain the process of setting up slide show. How will you set the time intervals between two slides during slide show ? Explain. 10

Total No. of Questions : 9]
(2033)

[Total No. of Printed Pages : 4

UG (CBCS) IInd Year Annual Examination

3145

B.A. COMPUTER APPLICATION

(Computer System Architecture)

(Common with B.Sc. Physical Science DSC-2C)

Paper : COMP201 TH

Time : 3 Hours]

[Maximum Marks : 70

Note :- Attempt *five* questions in all, selecting *one* question each from Unit-I, II, III and IV. Question No. 1 is compulsory.

Compulsory Question

1. Attempt all parts :

Fill in the blank spaces :

- (i) A collection of lines that connects several devices is called
- (ii) Complements of numbers are used in digital computers for logical manipulation and operation.

- (iii) Control Word has.....bits.
- (iv) The Stack Pointer (SP) always points at the of the stack.

State whether the statement is True or False :

- (v) Postfix notation is same as Polish Notation.
(True/False)
- (vi) A software interrupt is initiated by executing an instruction.
(True/False)

Answer the following MCQ's by selecting the most appropriate option :

- (vii) Which logic circuit would you use for addressing memory ?
 - (a) Full Adder
 - (b) Multiplexer
 - (c) Decoder
 - (d) DMA circuit
- (viii) Where the results of an arithmetic and logical operation are stored ?
 - (a) In Accumulator
 - (b) In Cache Memory
 - (c) In ROM
 - (d) In Instruction Registry
- (ix) An exception condition in a computer system caused by an event external to the CPU is known as :
 - (a) Halt
 - (b) Process

- (c) Interrupt
 - (d) None of these
- (x) The circuit used to store one bit of data is called as :
- (a) Register
 - (b) Multiplexer
 - (c) Flip-Flop
 - (d) Counter $1 \times 10 = 10$

Unit-I

2. (a) Explain NOR and NAND gates with the help of truth table and block symbol.
- (b) Define Multiplexer and explain 2×1 and 4×1 Multiplexers. 7,8
3. (a) Explain Floating Point Representation of a number by giving proper example.
- (b) Convert the following numbers as directed :
- (i) $(110111)_2 = (?)_{10} = (?)_8 = (?)_{16}$
 - (ii) $(EC2)_{16} = (?)_2 = (?)_{10} = (?)_8$
 - (iii) $(127543)_8 = (?)_{16} = (?)_2 = (?)_{10}$ 6,9

Unit-II

4. (a) What do you mean by Instruction Cycle ?
Discuss its various phases in detail.
- (b) Explain Memory-Reference instructions. 10,5

5. (a) Discuss Stack Organization and its operations.
(b) Convert the following expression to Reverse Polish Notation using stacks :

$$(A + B) * [C * (D + E) + F]$$

- (c) Write down various logical microoperations with the help of truth table. 5,5,5

Unit-III

6. (a) Explain the various Addressing Modes in detail.
(b) Explain Three-Address Instruction format with the help of an example. 10,5
7. (a) What is the need of Assembly Language ? Discuss in detail.
(b) How is Character manipulation done in I/O Programming ? 8,7

Unit-IV

8. (a) Distinguish between Isolated versus Memory Mapped Interface.
(b) Write a short note on Programmed I/O and Interrupt initiated I/O transfer. 8,7
9. (a) What is DMA ? Why is it needed ?
(b) Discuss DMA transfer in detail. 8,7

3146

B.A. COMPUTER APPLICATION

(Database Management System)

(Common with B.Sc. Physical Science DSC-2D)

Paper : COMP-202 TH

Time : 3 Hours]

[Maximum Marks : 50

Note :- Question No. 1 Part-A is compulsory. Select *one* question each from Parts-B, C, D and E. All part are of 10 marks.

Part-A

(Compulsory Question)

1. (i) Which of the following SQL command can be used to modify existing data in a database table ?
- (a) MODIFY
 - (b) UPDATE

CA-346

(1)

Turn Over

- (c) CHANGE
- (c) NEW
- (ii) The term is used to refer to a row.
 - (a) Tuple
 - (b) Attribute
 - (c) Instance
 - (d) Field
- (iii) To remove a relation from an SQL database, which command will be used ?
 - (a) Remove
 - (b) Delete
 - (c) Update
 - (d) Drop table
- (iv) Which is unary operation ?
 - (a) Primitive
 - (b) Selection
 - (c) Projection
 - (d) Generalized selection.

(v) Which normal form are based on the concept of FD ?

(a) 1NF

(b) 2NF

(c) 3NF

(d) 4NF

(vi) What is the importance of data dictionary ?

(vii) Candidate key has the properties of uniqueness and irreducibility. (True/False)

(viii) List the types of attributes.

(ix) The main objective of normalisation is to

(x) Full form of EER and SQL

..... $1 \times 10 = 10$

Part-B

Unit-I

2. What do you mean by data independence ? Explain the differences between logical and physical data independence.
3. What is a Data Model ? Explain any *one* model with its advantages and disadvantages.

Part-C

Unit-II

4. What are the different types of constraints used with CREATE TABLE statement ?
5. What is an entity ? What is relationship ? Explain ER modelling with the help of database for student management system.

Part-D

Unit-III

6. (a) What are data integrity rules ? Explain with examples.
- (b) What are special relational operations in relational algebra ? Discuss any *two*.
7. (a) What are DML statements ? Explain.
- (b) What are the various data types in SQL ?

Part-E

Unit-IV

8. Define second normal form with a suitable example. Discuss its various anomalies.
9. How are EER diagrams for specialization, generalization and aggregation drawn ?

3147

B.A. COMPUTER APPLICATION

(PHP Programming)

(SEC-I)

(Common with B.Sc. Physical Science)

Paper : COMP203-TH

Time : 3 Hours]

[Maximum Marks : 70

Note :- Attempt *five* questions in all, selecting one question from each Part-B, C, D and E. Question No. 1 (Part-A) is compulsory.

Part-A

1. Multiple Choice Questions :

(i) Variable name in PHP starts with :

(a) ! (Exclamation)

(b) \$ (Dollar)

- (c) & (Ampersand)
- (d) # (Hash)
- (ii) Which of the following is not a variable scope in PHP ?
- (a) Extern
- (b) Local
- (c) Static
- (d) Global
- (iii) Which of the following functions in PHP returns the time of sunrise of a particular day and location ?
- (a) date_sunrise()
- (b) date-sunrise()
- (c) sunrise()
- (d) None of these

(iv) Which of the following is used for concatenation in PHP ?

- (a) + (plus)
- (b) * (Asterisk)
- (c) . (dot)
- (d) append()

(v) Which of the following is the correct way to create a function in PHP ?

- (a) Create myFunction()
- (b) New_function myFunction()
- (c) function myFunction()
- (d) None of these

(vi) What is the use of sprintf() function in PHP ?

- (a) The sprintf() function is used to print the output of program
- (b) The sprintf() function is used to send output to variable

(c) Both of these

(d) None of these

(vii) Which of the following is used to end a statement in PHP ?

(a) . (dot)

(b) ; (semicolon)

(c) ! (exclamation)

(d) / (slash)

(viii) Which of the following is the correct way to create an array in PHP ?

(a) `$season = array["summer", "winter", "spring", "autumn"];`

(b) `$season = array("summer", "winter", "spring", "autumn");`

(c) `$season = "summer", "winter", "spring", "autumn";`

(d) All of these

(ix) Which of the following is the default file extension of PHP ?

(a) .php

(b) .hphp

(c) .xml

(d) .html

(x) Which of the following is not a variable scope in PHP ?

(a) Extern

(b) Local

(c) Static

(d) Global

1×10=10

Part-B

2. (a) Explain various data types available in PHP.

(b) What are the different ways to write a php code ?

15

Or

3. (a) Why we use PHP ? Discuss the types of the operator in PHP.
- (b) Discuss about the scope of variable in PHP. Explain with the help of suitable example. 15

Part-C

4. Create an HTML form using name and email field with submit button and process it using the get and post method of Php script. 15

Or

5. (a) Discuss the various looping statements in PHP with examples.
- (b) Create a script using a for loop to add all the integers between 0 and 30 and display the sum. 10,5

Part-D

6. (a) What are the different ways of calling a function in PHP ? How call by value is different from call by reference ?
- (b) Write a PHP program to check if a person is eligible to vote. 9,6

Or

7. (a) What is an array and associative array ? Write a program to create an associative array.
- (b) What are default PHP argument function ?
- (c) Discuss the need of Function. 7,4,4

Part-E

8. (a) What are the different ways of creating Sting in php ? Discuss the different functions for string manipulation.
- (b) Write a PHP script to convert lowercase string to uppercuse. 10,5

Or

9. Explain briefly the following :
- (a) Regular expression
- (b) Regular expression functions
- (c) Regular Expression patterns 15

3343

B.A. COMPUTER APPLICATION

(Software Engineering)

(SEC-4)

[Common with Computer Science and B.Sc. Physical
Science (COMP303TH)]

Paper : COMP 308 TH

Time : 3 Hours]

[Maximum Marks : 70

Note :- Attempt *one* question each from the Parts-B, C, D
and E. Part-A is a compulsory question.

Part-A

(Compulsory Question)

1. (i) Which is NOT a software characteristic ?
- (a) Software does not wear out.
 - (b) Software is flexible.

- (c) Software is not manufactured.
 - (d) Software is always correct.
- (ii) Which of the following is not a software process model ?

- (a) Linear sequential model
- (b) Prototyping model
- (c) The spiral model
- ~~(d) COCOMO model~~

- (iii) Which process model is also called a classical life-cycle model ?

- (a) Waterfall model
- (b) RAD model
- (c) Prototyping model
- (d) Incremental model

(iv) SRS stands for :

- (a) Software Requirements Specification
- (b) System Requirements Specification
- (c) Systematic Requirements Specification
- (d) None of these

(v) Which one is the measure of software complexity ?

- (a) Number of line of codes (LOC)
- (b) Number of man years
- (c) Number of function points (FP)
- (d) All of these

(vi) The relationship of data elements in a module is called :

- (a) Coupling
- (b) Cohesion

- (c) Modularity
- (d) None of these

(vii) of a system is the structure or structures of the system which comprise software elements, the externally visible properties of these elements and the relationship amongst them.

- (a) Software construction
- (b) Software evolution
- (c) Software architecture
- (d) Software reuse

(viii) Which is not a functional testing technique ?

- (a) Boundary value analysis
- (b) Decision table
- (c) Regression testing
- (d) None of these

(ix) Cyclomatic complexity is equal to :

- (a) Number of independent paths
- (b) Number of paths
- (c) Number of edges
- (d) None of these

(x) Testing of software with actual data and in actual environment is called :

- (a) Alpha testing
- (b) Beta testing
- (c) Regression testing
- (d) None of these

1×10=10

Part-B

2. (a) What do you mean by the Waterfall model of software development ? Explain.

(b) Describe Computer based systems with suitable examples.

8,7

3. What are functional and non-functional requirements ?

Explain with *two* suitable examples.

15

Part-C

4. Differentiate between the following :

(a) Coupling and Cohesion

(b) Data Design and Architecture Design

8,7

5. What do you mean by Real time software design ?

Describe the importance of these systems in detail. 15

Part-D

6. Describe how SCM is a major part of Software

Development using suitable examples. Also explain

the SCM standard.

15

7. (a) What are software complexity measures ?

(b) What do you mean by Project Scheduling ? 7,8

Part-E

8. What do you mean by Software Testing ? Describe testing techniques in detail. 15

9. (a) Explain the concept of debugging with suitable examples.

(b) What do you mean by reverse engineering ? 7,8