This question paper contains **3** printed pages]

PD—01—2024

FACULTY OF COMPUTER STUDIES

B.Sc. (First Year) (First Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

(Basic of Computer Science)

(Tuesday, 2-4-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data wherever necessary.

1. Attempt any *five* of the following : 15

(*a*) Explain file Transfer Protocol.

(*b*) Explain OSI Model.

(*c*) Write a note on ROM.

(*d*) Explain Web browser.

(*e*) What is Network ?

(*f*) Explain Cache Memory.

(*g*) What is operating system ?

P.T.O.

2. Attempt any *three* of the following : 15

(*a*) Explain the concept of Workstation.

(*b*) Explain client and server model.

(*c*) Explain second and third generation of Computer.

(*d*) Explain organization of Computer.

(*e*) Explain characteristics of Computer.

3. Attempt any *three* of the following : 15

(*a*) Explain the concept of Keyboard.

(*b*) Explain the concept of projector.

(*c*) Explain Bio-metric Device.

(*d*) Explain types of Monitor.

(*e*) Explain the concept of RAM.

4. Attempt any *three* of the following : 15

(*a*) Explain USB flash Drive.

(*b*) Explain the concept of HDD.

(*c*) Explain the concept of DVD.

(*d*) Explain Disk O.S. in detail.

(*e*) Explain Windows O.S. in detail.

5. Attempt any *three* (short notes) of the following : 15

(*a*) Cache memory

(*b*) Mainframe computer

(*c*) E-mail

(*d*) First Generation of computer

(*e*) Memory Card.

This question paper contains **4** printed pages]

PD—22—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (First Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper BCS-104-B

(Fundamentals of Digital Electronics)

(Wednesday, 10-4-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Excess-3 code

(*b*) NAND Gate

(*c*) Two's Complement Binary

P.T.O.

(*d*) Analog & Digital Signals

(*e*) Decoder

(*f*) T flip-flop

(*g*) SISO shift register.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Perform the following conversions :

(*i*) $(452)_8 = (?)_{16}$

(*ii*) $(10101110)_2 = (?)_8$

(*iii*) $(1101011011111)_2 = (?)_{16}$

(*iv*) $(7F)_{16} = (?)_{10}$

(*v*) $(567)_{10} = (?)_8$

(*b*) Perform the following operations :

(*i*) $(11110)_2 + (11001)_2$

(*ii*) $(100001)_2 - (1011)_2$

(*iii*) $(100)_2 \times (011)_2$

(*iv*) $(1111)_2 \div (11)_2$

(*v*) $(1010)_2 = (?)_{Gray}$

(*c*) What is Number System ? Explain Octal and Hexadecimal number systems in detail.

(*d*) What is error detecting and correcting code ? Explain hamming code with suitable example.

(*e*) State and prove Demorgan's first and second theorem.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain full adder in detail.

(*b*) Explain Ex-OR and Ex-NOR Gates in detail.

(*c*) Explain SOP and POS forms of Boolean function in detail.

(*d*) Express the following Boolean function in its standard or canonical form :

$$Y = A'B + B'C + A'C'.$$

(*e*) Simplify the following using K-map :

$$Y = A'B'C + AB'C' + ABC + A'B'C'$$

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Simplify the following using K-map :

$$f(A, B, C, D) = \pi M(0, 1, 3, 4, 5, 6, 8, 9, 10, 11, 14).$$

(*b*) What is De-multiplexer ? Explain 1 : 8 De-multiplexer in detail.

(*c*) What is flip-flop ? Explain S-R flip-flop in detail.

(*d*) What is asynchronous counter ? Explain 3-bit asynchronous counter in detail.

(*e*) Explain J-K flip-flop in detail.

P.T.O.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Gray Code

(*b*) Digital to Analog converter

(*c*) D flip-flop

(*d*) Encoder

(*e*) SIPO shift register.

This question paper contains **3** printed pages]

PD—07—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (First Year) (First Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper BCS-102

(Introduction to Programming Language Using C : Part I)

(Thursday, 4-4-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain the history of C.

(*b*) Explain the Primary Data types in C.

(*c*) Explain the Break and Continue statements.

(*d*) Explain the Compilers and Interpreters.

(*e*) Explain the array declaration and initialization.

(*f*) Explain the Algorithms.

(*g*) Explain the relational operator.

P.T.O.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain in detail structure of a C program.

(*b*) Explain in detail keyword and variables.

(*c*) Explain in detail printf( ) and scanf( ).

(*d*) WAP in C to read two integer number and swap it.

(*e*) WAP in C to read name of student, exam no. and marks in three subjects. Find the print total marks and average marks.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain in detail if-else statement with example.

(*b*) Explain in detail Switch Statement with example.

(*c*) Explain in detail While Loop with example.

(*d*) WAP in C to read +ve integer no. and check prime or not.

(*e*) WAP in C to read four digit number and print in reverse order.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain in detail Recursion with example.

(*b*) Explain in detail passing array to function.

(*c*) Explain in detail Nested for Loop with example.

(*d*) WAP in C to read two unequal numbers and print larges number.

(*e*) WAP in C to read a +ve integer number and find factorial.

5. Attempt any *three* of the following (**5** marks each) : 15

(*a*) What is array ? Explain in detail one-dimensional array.

(*b*) Explain in detail two-dimensional array with example.

(*c*) Explain in detail increment and decrement operators in C.

(*d*) WAP in C to read to two matrix 3 × 3. Find and print matrix addition.

(*e*) WAP in C to read 10-array elements and sort in ascending order.

This question paper contains **3** printed pages]

PD—14—2024

FACULTY OF COMPUTER SCIENCE

B.Sc. (CS) (First Year) (First Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper BCS-103

(Web Technologies)

(Saturday, 6-4-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if necessary.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain Historical Root of HTML.

(*b*) What is telnet ? Explain.

(*c*) Explain Frameset tag.

(*d*) Explain embedded style sheet.

(*e*) Explain Radio button in detail.

(*f*) What is W.W.W. ?

(*g*) Explain Un-Ordered List in HTML.

P.T.O.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain Creating Email Hyperlinks in HTML with HTML.

(*b*) Explain <font> tag in HTML.

(*c*) Explain TABLE, TR, TH, TD tag with example.

(*d*) Explain input and output statement of JavaScript.

(*e*) Explain different text-level elements in HTML.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) What is JavaScript ? Explain features of JavaScript.

(*b*) Explain Heading tag with example.

(*c*) Explain HTML, HEAD, TITLE, BODY tag.

(*d*) How to create hyperlinks in HTML document ? Explain with example.

(*e*) Explain <Span> tag with example.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain <form> tag with attributes.

(*b*) Explain <img> tag with all attributes.

(*c*) Write HTML code to design HTML Login form which includes Text control, Password Field Control, Submit Button and Reset Button Control.

(*d*) Explain <frame> tag in HTML.

(*e*) Explain External style sheet with example.

5. Write notes on any *three* of the following (**5** marks each) : 15

(*a*) Address tag.

(*b*) Web Browser

(*c*) Scrolled List

(*d*) Variable in JavaScript

(*e*) Ordered list.

This question paper contains **3** printed pages]

PD—27—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (C.S.) (Second Semester) EXAMINATION

APRIL/MAY, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

BCS-204-B

(8085 Microprocessor)

(Friday, 12-4-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Draw suitable diagram, if necessary.

(*iv*) Assume your data, if necessary.

1. Attempt any *five* of the following (Each of **3** marks) : 15

(*a*) Explain wordlength of Microprocessor.

(*b*) Define and explain operand and opcode.

(*c*) Describe working of S_0 and S_1 status signals in 8085.

(*d*) Describe working of Program Counter.

(*e*) Describe implicit addressing mode of 8085.

P.T.O.

(*f*) Describe working of control unit.

(*g*) Describe any *two* I/O control instructions.

2. Attempt any *three* of the following (Each of **5** marks) : 15

(*a*) What is a Microprocessor ? Give features of 8085 Microprocessor.

(*b*) Draw block diagram of 8085 Microprocessor of (fig. only).

(*c*) Explain general purpose registers used in 8085 Microprocessor.

(*d*) Explain working of stack pointer and HL-pair in the 8085 Microprocessor.

(*e*) Discuss instruction format of 8085 Microprocessor with suitable example.

3. Attempt any *three* of the following (Each of **5** marks) : 15

(*a*) Draw pin configuration of 8085 Microprocessor (fig. only).

(*b*) Explain interrupt signals used in 8085 Microprocessor.

(*c*) What is addressing mode ? Describe Register addressing and Register indirect addressing modes.

(*d*) Describe fetch cycle of 8085 Microprocessor.

(*e*) Describe in brief data transfer group of instructions.

4. Attempt any *three* of the following (Each of **5** marks) : 15

(*a*) Explain working of control signals used in 8085 Microprocessor.

(*b*) Describe arithmetic group of instructions of 8085 Microprocessor.

(*c*) Write an ALP to find largest between two numbers.

(*d*) Write an ALP to find sum of two 8-bit numbers and result is 16-bit.

(*e*) Write an ALP to find 2's complement of a 16-bit number.

5. Write short notes on any *three* (Each of **5** marks) : 15

(*a*) Explain system bus.

(*b*) Execute cycle, machine cycle.

(*c*) Flag register of 8085.

(*d*) Power supply and frequency signals of 8085 Microprocessor.

(*e*) Branch control group of instructions of 8085 Microprocessor.

This question paper contains **3** printed pages]

PD—18—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (First Year) (Second Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

(BCS–403)

(Database Management System)

(Monday, 08-04-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. *:—* (*i*) Attempt *all* questions.

(*ii*) Figures to the right indicate full marks.

1. Attempt any *five* of the following : 15

(*a*) Explain various DBMS facilities.

(*b*) What do you mean by client server systems ?

(*c*) Explain concept of shared disk.

(*d*) Explain advantages and disadvantages of DBMS.

P.T.O.

(*e*) Explain concept of DDL in detail.

(*f*) Discuss the concept of attributes in Entity Relationship Model.

(*g*) What is Database ?

2. Attempt any *three* of the following : 15

(*a*) Explain the concept of foreign key with example.

(*b*) Explain various DBMS users in detail.

(*c*) Discuss queries to create and modify the created table.

(*d*) Explain concept of relationship sets.

(*e*) Explain concept of distributed database.

3. Attempt any *three* of the following : 15

(*a*) Explain various data types used in SQL.

(*b*) Explain any *two* multiple row functions used in SQL.

(*c*) What do you mean by participation constraints ?

(*d*) Explain the concept of transaction server in detail.

(*e*) Explain the concept of data server.

4. Attempt any *three* of the following : 15

(*a*) Explain procedure to change table structure in SQL.

(*b*) Explain in detail concept of constraints.

(*c*) Explain types of relationships in detail.

(*d*) How to speedup the parallel systems ?

(*e*) Discuss the concept of views in SQL.

5. Write short notes on any *three* of the following : 15

(*a*) Entity sets

(*b*) Centralized systems

(*c*) DQL

(*d*) Number functions in SQL

(*e*) Altering view.

This question paper contains **3** printed pages]

PD—11—2024

FACULTY OF SCIENCE & TECHNOLOGY

B.Sc. (CS) (Second Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper-AF-15

(Intro. to Programming Language Using C (Part 2))

(Friday, 05-04-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) What is function ? Explain in detail.

(*b*) Explain dereferencing pointers.

(*c*) Explain Dynamic memory allocation.

P.T.O.

(*d*) Explain malloc() memory allocation function.

(*e*) Explain difference between structure and union.

(*f*) Explain operations on file.

(*g*) Explain strcmp() string library functions.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain types of functions.

(*b*) Explain command line arguments.

(*c*) Explain recursion with a suitable example.

(*d*) Write a program to perform addition of two numbers using function.

(*e*) Explain storage classes in detail.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) What is pointer ? Explain pointer declaration in detail.

(*b*) Explain pointer to pointer in detail.

(*c*) Explain types of file in detail.

(*d*) Write a program to define a structure of student.

(*e*) Explain the concept of array of structure.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain concept of union with suitable example.

(*b*) Explain pointer to structure in detail.

(*c*) What is file ? Explain how to create FILE.

(*d*) What is structure ? Explain nested structure.

(*e*) Write a program to read the data from a file.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) strcpy() & strcat()

(*b*) Pointer to function

(*c*) Random access file

(*d*) calloc()

(*e*) Pointer to structure.

This question paper contains **3** printed pages]

PD—04—2024

FACULTY OF SCIENCE & TECHNOLOGY

B.Sc. (CS) (Second Semester) EXAMINATION

MARCH/APRIL, 2024

(Revised/CBCS Pattern)

COMPUTER SCIENCE

(AF-05)

(Operating System)

(Wednesday, 03-04-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Figures to the right indicate full marks.

(3) Assume suitable data, if required.

(4) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain operating system services.

(*b*) Explain SCFS in brief.

(*c*) Explain contagious memory allocation scheme.

(*d*) Explain concept of multiprocessor.

(*e*) Explain command line interpreter.

(*f*) Explain user's view of operating system.

(*g*) Explain extended machine.

P.T.O.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain operating system structure.

(*b*) Explain OS as a resource manager.

(*c*) Explain single processor comport system architecture.

(*d*) Explain system boot in brief.

(*e*) Explain process control system calls in brief.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain process state model.

(*b*) Explain context switching.

(*c*) Explain shortest job first algorithm.

(*d*) Explain process control block.

(*e*) Explain concept of scheduler.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain priority scheduling.

(*b*) Explain fragmentation in brief.

(*c*) Explain round robin method.

(*d*) Explain scheduling queue.

(*e*) Explain segmentation.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Paging method

(*b*) Concept of process

(*c*) Communication and protection system calls

(*d*) Hierarchical machine

(*e*) SJF.

This question paper contains **3** printed pages]

PD—17—2024

FACULTY OF COMPUTER SCIENCE

B.Sc. (CS) (Second Year) (Third Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

(BCS–302)

(Computer Network)

(Saturday, 06-04-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. *:—* (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if necessary.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain repeaters device.

(*b*) Explain NIC cards.

(*c*) Explain connection oriented services.

(*d*) Explain packet switching.

(*e*) Explain 10 base F.

(*f*) What is IP address ?

(*g*) Explain SNMP in detail.

P.T.O.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Difference between LAN and WAN.

(*b*) Explain types of signals.

(*c*) Explain bus topology.

(*d*) Explain OSI reference model.

(*e*) Explain circuit switching.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain service primitives.

(*b*) Explain Hub and Switch.

(*c*) Explain application of computer network.

(*d*) Explain FDDI in detail.

(*e*) Explain TCP/IP model in detail.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain ISP.

(*b*) Explain protocol stack design issues of the layer.

(*c*) Explain SMTP in detail.

(*d*) Explain fiber optic cables.

(*e*) Explain frequency division multiplexing.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Fast Ethernet

(*b*) Parallel transmission mode

(*c*) Internet *versus* intranet

(*d*) Radio waves

(*e*) Twisted pair cable.

This question paper contains **3** printed pages]

PD—25—2024

FACULTY OF COMPUTER SCIENCE

B.Sc. (CS) (Second Year) (Third Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

(BCS–303)

(Data Structure and Algorithms)

(Wednesday, 10-04-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. *:—* (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Elementary data organization.

(*b*) POP operation.

(*c*) Two-way linked list.

P.T.O.

(*d*) Recursion.

(*e*) D-Queue.

(*f*) Threads.

(*g*) Insertion sort.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain basic terminology of data structure.

(*b*) Explain data structure operation.

(*c*) Explain algorithm complexity.

(*d*) Explain types of Binary tree.

(*e*) Explain evaluation of postfix expression.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) What is Sorting ? Explain bubble sort.

(*b*) Explain searching methods.

(*c*) Explain insertion operation in linear array.

(*d*) Explain header nodes.

(*e*) Explain graph theory terminology.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain representation of linked list in memory.

(*b*) Explain insertion into linked list.

(*c*) Explain the concept of binary tree.

(*d*) Explain the algorithm on deletion operation in queue.

(*e*) Explain linked representation of queue.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Explain priority queue.

(*b*) Explain arithmetic expression.

(*c*) Explain traversing of binary tree.

(*d*) Explain PUSH and POP operations.

(*e*) Explain garbage collection in brief.

This question paper contains **3** printed pages]

PD—10—2024

FACULTY OF COMPUTER SCIENCE

B.Sc. (C.S.) (Second Year) (Third Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper-BCS-304 B

(Mathematical Techniques in Computer Science (MTCS))

(Thursday, 04-04-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain Sets.

(*b*) Define matrix with its any two types.

(*c*) Describe Relation.

(*d*) Write the set A = {1, 4, 9, 16, 25,....} in set –builder form.

(*e*) Explain Probability.

P.T.O.

(*f*) Explain DIVISIBILITY of 8 and 15 with suitable example.

(*g*) Describe Graphs.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Define event. Explain its types.

(*b*) Describe Arithmetic Progression. Describe types of relation.

(*c*) Find the 10th term of the following series :

5, 10, 20, 40.....

(*d*) Describe Sample Space with example.

(*e*) Explain Isomorphism graph in detail.

(*f*) Find the adjoint of matrix :

$$L = \begin{pmatrix} 5 & 3 \\ 1 & 4 \end{pmatrix}$$

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain Set operation in detail.

(*b*) Describe Arithmetic Progression.

(*c*) Explain walks, paths and circuit.

(*d*) How many natural numbers between 17 and 80 are divisible by 6 ?

(*e*) Find the HCF and LCM of the following :

0.63, 1.05, 2.1

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain properties of Sets.

(*b*) A car moves at the speed 120 km/hr. Find the speed of the car in meter per second.

(*c*) If A = {1, 2, 3, 4}, B = {3, 4, 5, 6), C = {5, 6, 7, 8}, find A $\cup$ B, A $\cup$ B $\cup$ C.

(*d*) A bag contains 6 red and 4 white balls, two balls are drawn at random. Find the probability that both the balls are red.

(*e*) Find AB where :

$$A = \begin{pmatrix} 3 & 2 \\ 0 & 7 \end{pmatrix}$$

$$B = \begin{pmatrix} 2 & 2 & 3 \\ -1 & 4 & 4 \end{pmatrix}$$

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) What is the probability that a number selected from the numbers (1, 2, 3,.....15) is a multiple of 4.

(*b*) Explain Graph types in detail.

(*c*) Find the 7th term of the arithmetic progression 1, 3.5, 6, 8.5, ...

(*d*) A person crosses a 600 m long street in 5 minutes. What is his speed in km per hour ?

(*e*) Find the H.C.F. of 108, 288 and 360.

This question paper contains **3** printed pages]

PD—03—2024

FACULTY OF SCIENCE & TECHNOLOGY

B.Sc. (Second Year) (Third Semester) EXAMINATION

MARCH/APRIL, 2024

(Revised/CBCS Pattern)

COMPUTER SCIENCE

(BCS-301)

(Object Oriented Programming)

(Tuesday, 02-04-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Figures to the right indicate full marks.

(3) Assume suitable data, if required.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain the Scope Resolution Operator.

(*b*) Explain the Basic Input/Output Statements.

(*c*) Explain the Visibility modes in C++.

(*d*) Rules for operator overloading.

(*e*) Explain the C++ streams classes.

(*f*) Explain the file modes in C++.

(*g*) Explain the specifying a class and object in C++.

P.T.O.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain in detail call by reference with example.

(*b*) Explain in detail function overloading with example.

(*c*) Explain in detail structure of a C++ program.

(*d*) Explain in detail Object Oriented programming.

(*e*) WAP in C++ to demonstrate on scope resolution operator.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain in detail Formatted I/O operations.

(*b*) Explain in detail virtual functions with example.

(*c*) Explain in detail operating and closing file.

(*d*) WAP in C++ to copy a file from nanded.txt into latur.txt.

(*e*) WAP in C++ to demonstrate on multiple inheritance.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain in detail Static members with example.

(*b*) What is Constructor ? Explain in detail any *two* constructors.

(*c*) Explain in detail Friend Functions with example.

(*d*) WAP in C++ to demonstrate on destructor.

(*e*) WAP in C++ to demonstrate on Pointer in objects.

5. Attempt any *three* of the following (**5** marks each) : 15

(*a*) What is Inheritance ? Explain multilevel Inheritance with example.

(*b*) Explain in detail Polymorphism with example.

(*c*) Explain in detail pure virtual functions with example.

(*d*) WAP in C++ to demonstrate on unary operator C++.

(*e*) WAP in C++ to demonstrate Virtual Base Classes.

This question paper contains **3** printed pages]

PD—05—2024

FACULTY OF SCIENCE & TECHNOLOGY

B.Sc. (Second Year) (Fourth Semester) EXAMINATION

MARCH/APRIL, 2024

(Revised/CBCS Pattern)

COMPUTER SCIENCE

(Principle of Compiler Design)

(Wednesday, 03-04-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Figures to the right indicate full marks.

(3) Assume suitable data, if required.

(4) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain phases of complier.

(*b*) Define programming languages.

(*c*) Explain cross compiler.

(*d*) Explain errors in compiler designing.

(*e*) Explain data elements.

(*f*) Explain intermediate code.

(*g*) Explain parse tree.

P.T.O.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain lexical and syntactic structure of language.

(*b*) Explain need of translator.

(*c*) Explain capabilities of context free grammar.

(*d*) Explain NFA in detail.

(*e*) Explain assignment statements.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain implementation of syntax directed translator.

(*b*) Explain different data structure in compiler designing.

(*c*) Explain Predictive parsers in detail.

(*d*) Explain evaluation of postfix notation.

(*e*) Explain regular expression in detail.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain shift reduce parsing.

(*b*) Explain LR parsers in detail.

(*c*) Explain multi pass compiler.

(*d*) Explain conversion of regular expression to finite automata.

(*e*) Explain role of lexical analyzer.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) DFA

(*b*) Sources of optimization

(*c*) Bootstrapping

(*d*) Operator precedence parsing

(*e*) Code generation.

This question paper contains **3** printed pages]

PD—13—2024

FACULTY OF SCIENCE & TECHNOLOGY

B.Sc. (Second Year) (Fourth Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

(Programming in JAVA)

(Friday, 05-04-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Identifiers

(*b*) 'this' keyword

(*c*) JVM

P.T.O.

(*d*) Variables

(*e*) Finally clause

(*f*) Constant

(*g*) Regular Expression.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain JAVA features.

(*b*) Explain structure of JAVA program with example.

(*c*) Explain different data types in JAVA.

(*d*) Explain looping statement in JAVA.

(*e*) Write a JAVA program to display addition of 10 integer numbers.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain method overloading with an example.

(*b*) What is array ? Explain one-dimensional array with example.

(*c*) Explain the effect of "final" keyword on class, variables and method.

(*d*) What is inheritance ? Explain in details.

(*e*) Write a JAVA program for constructor overloading.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) What is interface ? Explain with example.

(*b*) Explain inner class in detail.

(*c*) What is error ? Explain different types of errors.

(*d*) What is package ? How to create and accessing package ?

(*e*) Write a JAVA program to show the use of try....catch statements.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Explain JDBC architecture in detail.

(*b*) Explain string class and its methods with example.

(*c*) Explain method overriding with example.

(*d*) Explain JAVA date and time functions with example.

(*e*) Write a JAVA program to save the square and cube of the number in “result.txt” file.

This question paper contains **3** printed pages]

PD—29—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (Second Year) (Fourth Semester) EXAMINATION

APRIL/MAY, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

(BCS-403)

(Relational Database Management System)

(Friday, 12-4-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions carry equal marks.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if necessary.

1. Attempt any *five* of the following : 15

(*a*) Explain advantages and disadvantages of RDBMS.

(*b*) Explain various DML commands used in SQL.

(*c*) Explain various arithmetic operators used in SQL.

(*d*) Explain the concept of single row conversion.

(*e*) Explain declaration section of PL/SQL.

P.T.O.

(*f*) Explain various logical operators used in SQL.

(*g*) Explain concept of attributes in detail.

2. Attempt any *three* of the following : 15

(*a*) Explain various users of DBMS.

(*b*) Explain BETWEEN operator in detail.

(*c*) Explain concepts of tuples in detail.

(*d*) Explain any *two* DDL commands.

(*e*) Explain concept of primary key in detail.

3. Attempt any *three* of the following : 15

(*a*) Explain DISTINCT clause in detail.

(*b*) Explain concept of views in detail.

(*c*) What is %ROWTYPE attribute ? Explain it with example.

(*d*) Explain with example how table is altered in SQL.

(*e*) Explain transaction control commands in detail.

4. Attempt any *three* of the following : 15

(*a*) What is trigger ? Explain types of triggers in detail.

(*b*) Write SQL query to create table student with name, roll_number and total_marks and add three records into it.

(*c*) Explain the procedure to enable and disable trigger with example.

(*d*) Explain procedure to enable and disable triggers.

(*e*) Explain subqueries and its types.

5. Write short notes on any *three* of the following : 15

(*a*) Outer join

(*b*) Multiple row functions

(*c*) Types of SQL commands

(*d*) Applications of RDBMS

(*e*) Entities.

This question paper contains **3** printed pages]

PD—20—2024

FACULTY OF COMPUTER SCIENCE

B.Sc. (CS) (Fourth Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper AF-30

(Software Engineering)

(Monday, 8-4-2024) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain role of software.

(*b*) Explain product and process.

(*c*) Explain process framework.

(*d*) Explain team software process.

P.T.O.

(*e*) What is an Agile process ?

(*f*) Explain communication practices.

(*g*) Explain system simulation.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain various software myths.

(*b*) Describe the different characteristics of software.

(*c*) Explain evolving role of software.

(*d*) Explain Waterfall model in detail.

(*e*) Explain software process in detail.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain spiral model in detail.

(*b*) Explain layered technology in detail.

(*c*) Explain PSP in detail.

(*d*) Explain incremental process model.

(*e*) Explain feature driven development.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain politics of Agile Development.

(*b*) What is an Agile process model ?

(*c*) Explain the essence of practice in software engineering practice.

(*d*) Explain computer based systems.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Evolving role of software

(*b*) Evolutionary process model

(*c*) Analysis modeling principles

(*d*) A system engineering hierarchy

(*e*) Planning practices.

This question paper contains **3** printed pages]

PD—28—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (C.S.) (Third Year) (Fifth Semester) EXAMINATION

APRIL/MAY, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

(Data Science)

(Friday, 12-4-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions carry equal marks.

(*ii*) Figures to the right indicate full marks.

1. Attempt any *five* of the following : 15

(*a*) What is database and its explain ?

(*b*) Explain data analysis.

(*c*) Explain artificial intelligence.

(*d*) Explain software engineering trends and techniques.

(*e*) Explain parallel computing and algorithms.

(*f*) Explain Hadoop integration with R.

(*g*) Explain various applications of Data Science.

P.T.O.

2. Attempt any *three* of the following : 15

(*a*) Explain Evaluation.

(*b*) Explain machine learning bigdata.

(*c*) Explain Data warehousing.

(*d*) Explain AI and ANNbasic.

(*e*) Explain programming paradigm and its algorithms.

3. Attempt any *three* of the following : 15

(*a*) Explain predictive analysis.

(*b*) Explain non-scalable and scalable data.

(*c*) Explain classification.

(*d*) Explain descriptive and inferential statistics.

(*e*) Explain Hypothesis techniques.

4. Attempt any *three* of the following : 15

(*a*) What is data mining and its detail ?

(*b*) What is Data visualization and its detail ?

(*c*) Explain basic introduction to Data Science.

(*d*) Explain research methodology basic and its importance.

(*e*) Explain Data Scientist roles and responsibilities.

5. Write short notes on any *three* of the following : 15

(*a*) Data structures

(*b*) Data acquisition

(*c*) Essential of algorithms and data structure

(*d*) Experimentation

(*e*) Data Mining *Vs*. Data Science.

This question paper contains **3** printed pages]

1001—2024

FACULTY OF ALL

B.A./B.Com./B.Sc. (Fifth Semester) EXAMINATION

APRIL/MAY, 2024

ENVIRONMENTAL STUDIES (Compulsory)

पर्यावरण अभ्यास (अनिवार्य)

(Wednesday, 03-04-2024) **Time : 10.00 a.m. to 12.00 noon**

Time—2 *Hours* *Maximum Marks*—40

Note *:—* (*i*) Attempt *all* questions.

(*ii*) Illustrate your answer with suitable labelled diagram wherever necessary.

(*i*) **सर्व** प्रश्न सोडवा.

(*ii*) आवश्यकता असेल तेथे आकृती काढून नावे घ्या.

1. Write in detail non-renewable resources. 15

क्षयक्षम साधन संपत्ती बद्दल सविस्तर माहिती लिहा.

P.T.O.

Or

(किंवा)

(A) Define ecosystem and explain grassland ecosystem. 8

परिसंस्था म्हणजे काय ? गवताळ परिसंस्थे बद्दल माहिती द्या.

(B) Describe conservating of biodiversity. 7

जैवविविधतेचे संवर्धन बद्दल वर्णन करा.

2. Define air pollution. Describe its sources, effects and control measures. 15

'हवा प्रदूषण म्हणजे काय ? हवा प्रदूषणाची कारणे, परिणाम व नियंत्रण ह्या बद्दल माहिती विशद करा.

Or

(किंवा)

(A) What is ecological successing ? 8

परिस्थितीक अनुक्रम म्हणजे काय ?

(B) Values of biodiversity. 7

जैवविविधतेचे मूल्य.

3. Write short notes on (any *two*) : 10

(*a*) Draught

(*b*) Soil erosion

(*c*) Pond

(*d*) Food Web.

थोडक्यात टिपा लिहा (कोणतेही **दोन**) :

(अ) दुष्काळ

(ब) जमीनीची धुप

(क) तळे

(ड) अन्न जाळे.

This question paper contains **2** printed pages]

PD—19—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Third Year) (Fifth Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

PYTHON

(CS–502)

(Monday, 08-04-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. *:—* (*i*) Attempt *all* questions.

(*ii*) Figures to the right indicate full marks.

1. Attempt any *five* of the following : 15

(*a*) Explain the introduction of python.

(*b*) Write a program in python to check prime number.

(*c*) Explain pickling data in python.

(*d*) Define classes.

(*e*) Explain data structures in dictionary.

(*f*) Explain polymorphism.

(*g*) Explain exception handling.

P.T.O.

2. Attempt any *three* of the following : 15

(*a*) Explain interpreter in python.

(*b*) Write a program in python to demonstrate the use of keyword arguments.

(*c*) Explain the manipulating string with ex.

(*d*) Write a program in python to check if a number is positive, negative or zero.

(*e*) Explain mathematical functions and constants.

3. Attempt any *three* of the following : 15

(*a*) How to writing list and manipulating list with examples ?

(*b*) Write a program in python to check leap year.

(*c*) Explain types of inheritance.

(*d*) Explain connecting with database.

(*e*) Explain reading data from CSV Excel file in python.

4. Attempt any *three* of the following : 15

(*a*) Explain conditional structures with example.

(*b*) Explain difference between list, triple and set.

(*c*) Explain data types in python.

(*d*) Write a program in python to use multilevel inheritance.

(*e*) Explain the step of installation python on windows.

5. Write short notes on any *three* of the following : 15

(*a*) Web using flask

(*b*) Dictionary

(*c*) Modules

(*d*) Data structure in list

(*e*) Passing query to mySQL.

This question paper contains **3** printed pages]

PD—23—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Fifth Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper AF-25

(Software Testing)

(Wednesday, 10-4-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain cost of quality.

(*b*) Explain software review in short.

(*c*) What is unit testing ?

P.T.O.

(*d*) Explain software testing fundamentals.

(*e*) Explain user interface testing.

(*f*) Explain metrics for testing.

(*g*) Explain targeted quality factor.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Write a short note on quality control.

(*b*) Explain top down approach in testing.

(*c*) Explain formal technical review.

(*d*) Explain white box testing.

(*e*) Explain content testing.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain metrics for design model.

(*b*) Explain quality and security.

(*c*) Explain software quality assurance.

(*d*) Explain concept of software testing.

(*e*) Explain types of software testing in brief.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain overview of testing process.

(*b*) Explain metrics for requirement model.

(*c*) Explain McCall's five quality factor.

(*d*) Explain software reliability.

(*e*) What is art of debugging ?

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Basic path testing

(*b*) Black box testing

(*c*) Testing concept for web apps

(*d*) Bottom up approach of testing

(*e*) SQA plan.

This question paper contains **3** printed pages]

PD—08—2024

FACULTY OF SCIENCE & TECHNOLOGY

B.Sc. (Third Year) (Sixth Semester) EXAMINATION

MARCH/APRIL, 2024

(Revised/CBCS Pattern)

COMPUTER SCIENCE

(Fundamentals of Image Processing)

(Friday, 04-04-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions carry equal marks.

(2) Figures to the right indicate full marks.

1. Attempt any *five* of the following : 15

(*a*) What are color fundamentals ?

(*b*) Explain applications of image processing.

(*c*) Explain Data Class.

(*d*) Explain fundamental steps in digital image processing.

(*e*) Explain background.

(*f*) Explain model of image degradation and restoration process.

(*g*) Explain pseudo color image processing.

P.T.O.

2. Attempt any *three* of the following : 15

(*a*) Explain RGB color model.

(*b*) Explain fundamental of filtering.

(*c*) Explain introduction to M function programming.

(*d*) Explain image types.

(*e*) Explain matrix representation.

3. Attempt any *three* of the following : 15

(*a*) Explain components of an image processing system.

(*b*) Explain basic of full color image processing.

(*c*) Explain Histogram processing and its function plotting.

(*d*) Explain CMY color model in image processing.

(*e*) Explain noise models in image restoration.

4. Attempt any *three* of the following : 15

(*a*) Explain variables and arrays.

(*b*) Explain linear spatial filtering.

(*c*) Explain histogram equalization.

(*d*) Explain non-linear spatial filtering.

(*e*) Explain introduction to digital image processing.

5. Write short notes on any *three* of the following : 15

(*a*) Image registration

(*b*) HSV color model

(*c*) Scalar and array operation

(*d*) Multidimensional array

(*e*) Color spaces.

This question paper contains **3** printed pages]

PD—16—2024

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Sixth Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper AF-21

(Linux Administration)

(Saturday, 6-4-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain managing groups in Linux.

(*b*) Explain DNS.

(*c*) Explain Scheduling tasks.

P.T.O.

(*d*) Explain priority scheduling in brief.

(*e*) Explain NTSYSV in brief.

(*f*) Explain Kill and Killall command with syntax and example.

(*g*) Explain printing commands with syntax and example.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain installation steps of Linux OS.

(*b*) Explain how to boot linux into default run level.

(*c*) Explain managing user accounts in Linux.

(*d*) What are consol based monitoring tools ?

(*e*) Explain advantages of Linux.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain dynamic host configuration protocol.

(*b*) Explain backup software in Linux.

(*c*) Explain advanced wireless networking.

(*d*) Explain telnet server in brief.

(*e*) Explain KDE process and system monitoring tools.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain starting and stopping apache web server.

(*b*) Explain concept of samba in detail.

(*c*) Explain setting up SSH server.

(*d*) Explain backup strategies.

(*e*) Explain various backup media.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Managing password

(*b*) Granting system administrative privileges to regular user

(*c*) Configuration of local printer

(*d*) Disadvantages of Linux

(*e*) Network configuration tools.

This question paper contains **3** printed pages]

PD—02—2024

FACULTY OF SCIENCE & TECHNOLOGY

B.Sc. (Third Year) (Sixth Semester) EXAMINATION

MARCH/APRIL, 2024

(Revised/CBCS Pattern)

COMPUTER SCIENCE

(BCS-601)

(Mobile Application Development)

Tuesday, 02-04-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) Attempt *all* questions.

(2) *All* questions carry equal marks.

1. Attempt any *five* of the following : 15

(*a*) Explain procedure for adding activity.

(*b*) What is use of Android operating system ?

(*c*) Explain android stack in detail.

(*d*) Explain button control in detail.

(*e*) Discuss alert dialog box in detail.

(*f*) Explain features of android operating system.

(*g*) Explain shared preferences in detail.

P.T.O.

2. Attempt any *three* of the following : 15

(*a*) What are the basic components of android ?

(*b*) Explain in detail android development tools.

(*c*) Explain procedure to create application template.

(*d*) Explain steps to install android.

(*e*) Explain the different operating systems used on mobile devices.

3. Attempt any *three* of the following : 15

(*a*) Explain structure of android application.

(*b*) Explain fragments in android.

(*c*) What is use of AndroidMainfest.xml ?

(*d*) Explain time picker and date picker view.

(*e*) Explain web view in detail.

4. Attempt any *three* of the following : 15

(*a*) What is use of option menu and context menu ?

(*b*) Explain intents and intents filter.

(*c*) Explain an activity life-cycle.

(*d*) Explain SQLite database.

(*e*) Explain localization in detail.

5. Write short notes on any *three* of the following : 15

(*a*) Android versions

(*b*) Style and themes

(*c*) Displaying map

(*d*) Toggle Button

(*e*) Publishing application.

This question paper contains **3** printed pages]

PD—15—2024

FACULTY OF COMPUTER SCIENCE

B.Sc. (Third Year) (Sixth Semester) EXAMINATION

MARCH/APRIL, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper BCS-604A

(Software Process Management)

(Saturday, 6-4-2024) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain Software Application Domain.

(*b*) Explain Process Pattern in short.

(*c*) Explain Defect Removal Efficiency in Software Engineering.

(*d*) Explain Process Assessment in detail.

(*e*) Explain Specialized Process Model.

(*f*) What is Process Metrics ?

(*g*) What is Software Process Maturity ?

P.T.O.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain Evolutionary Process Model in detail.

(*b*) Explain Prototype Model.

(*c*) What is Aspect Oriented Software Development ?

(*d*) Discuss the Formal Method Model in detail.

(*e*) Explain Waterfall Model in detail.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) What are the different software myths and their facts ?

(*b*) Explain the Optimizing Process in detail.

(*c*) Explain Personal Software Process (PSP) in detail.

(*d*) Explain the Repeatable process of Software Process Maturity.

(*e*) Explain the Initial Process of Software Process Maturity.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) What is defined process ?

(*b*) Explain CMM.

(*c*) Explain Team Software Process (TSP).

(*d*) Explain PCMM.

(*e*) Explain the Evolving Role of Software.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Explain the principle of Software Process Change.

(*b*) Explain CMMI.

(*c*) Explain a Generic Process Model in detail.

(*d*) Explain the Metrics for Software Quality.

(*e*) Explain Software Measurement in detail.