



65524

V Semester B.C.A. Degree Examination, March/April 2022
(CBCS)
COMPUTER SCIENCE
Java Programming

Time : 3 Hours

Max. Marks : 70

Instruction : Answer *all* the Sections.

SECTION – A

I. Answer **any 10** questions. **Each** question carries **2** marks. (10×2=20)

- 1) How Java differs from C++ ?
- 2) What is Web browser ?
- 3) What is conditional operators ?
- 4) Give the syntax for switch statement.
- 5) What is default constructor ? Give an example.
- 6) What are wrapper classes ?
- 7) Write any four thread methods.
- 8) What is interface ? Give an example.
- 9) What is the difference between error and exception ?
- 10) What is an applet ?
- 11) What is a graphic class ?
- 12) What are the different stream classes available in Java ?

SECTION – B

II. Answer **any 5** questions. **Each** question carries **10** marks. (5×10=50)

- 13) a) Explain the features of Java. 5
- b) Explain the Bitwise operators. 5
- 14) a) Explain the various access specifiers used in Java. 5
- b) Write the difference between method overloading and overriding. 5

P.T.O.



- 15) a) Explain the following :
i) Final variable
ii) Final method 5
b) Differentiate between arrays and vectors. 5
- 16) a) Write a program to display all prime numbers between two limits. 5
b) Explain any five string methods in Java. 5
- 17) a) What is Package ? How do create and access package in Java ? 5
b) Explain the life cycle of thread with neat diagram. 5
- 18) a) What is inheritance ? Explain with examples. 5
b) Explain multiple catch statements with examples. 5
- 19) a) Explain the Applet life cycle. 5
b) Write a program to implement mouse events. 5
- 20) a) Explain any five methods of graphic class with an example. 5
b) Explain the use of File Input Stream Class and File Output Stream Class. 5
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65523

Fifth Semester B.C.A. Degree Examination, March/April 2022
(CBCS)
COMPUTER SCIENCE
Computer Architecture

Time : 3 Hours

Max. Marks : 100

Instruction : Answer **all** questions.

SECTION – A

I. Answer **any ten** questions.

(10×2=20)

- 1) Write the symbol, truth table and logical expression for NAND gate.
- 2) What is parity bit ?
- 3) Define min term and max term with an example.
- 4) What is bidirectional register ?
- 5) Define interrupt.
- 6) What is BUN instruction ?
- 7) What is PSW ?
- 8) Find the 10's complement of 1267.
- 9) Distinguish between FGI and FGO.
- 10) Mention the types of ROM.
- 11) What is polling ?
- 12) Define virtual memory.

SECTION – B

II. Answer **any five** of the following questions.

(5×5=25)

- 13) Explain octal to binary encoder with a neat diagram.
- 14) Design 4 × 1 line multiplexer.
- 15) Explain any five register reference instructions.
- 16) Explain the different addressing modes with example.
- 17) Explain the interrupt cycle of computer.
- 18) Write a short note on virtual memory.
- 19) Difference between memory mapped I/O and isolated I/O.
- 20) Distinguish between RAM and ROM.

P.T.O.



SECTION – C

- III. Answer **any three** of the following questions. (3×15=45)
- 21) a) Simplify the following using K-map.
 $F(A, B, C, D) = \sum (0, 2, 4, 7, 8, 10, 12) + \sum d(5, 6, 15)$ 8
 b) Explain different binary codes. 7
- 22) a) What is shift register ? Explain the classification of shift register. 8
 b) Explain IC's and its types. 7
- 23) a) Explain BSA and BUN instruction with suitable example. 8
 b) Explain various modes of data transfer. 7
- 24) a) Write a short note on CISC and RISC. 7
 b) Explain the common bus system. 8
- 25) a) Explain the input-output instructions. 7
 b) Write a short note on memory hierarchy. 8

SECTION – D

- IV. Answer **any one** of the following questions. (1×10=10)
- 26) Design and discuss 3-bit parity checker with neat diagram. 10
- 27) a) Explain the working of JK Flip Flop. 5
 b) Write a note on direct mapping. 5



65525

Fifth Semester B.C.A. Degree Examination, March/April 2022
(CBCS Scheme)
COMPUTER SCIENCE
Microprocessor and Assembly Language

Time : 3 Hours

Max. Marks : 70

Instruction : Answer *all* Sections.

SECTION – A

- I. Answer **any ten** questions. **Each** question carries **two** marks : (10×2=20)
- 1) What is the use of bidirectional and unidirectional pins of 8085 ?
 - 2) Define program counter and stack pointer.
 - 3) Draw the flowchart to repeat the same task in specified time with delay.
 - 4) Why do we use XRA A instruction ?
 - 5) What is machine cycle ?
 - 6) Define subroutine.
 - 7) How many bytes required to store the following instruction ?
 - a) LXI, 2500
 - b) ADD B.
 - 8) What are handshake signals ?
 - 9) Write the vectored address of
 - i) TRAP
 - ii) RST 5.5.
 - 10) Difference between absolute and partial decoding.
 - 11) What are the basic modes of operations of 8255 ?
 - 12) Identify the following IC's compatible with 8085 microprocessor
 - a) 8255
 - b) 8259
 - c) 8257
 - d) 8251.

P.T.O.



SECTION – B

- II. Answer **any five** questions. **Each** question carries **10** marks : (5×10=50)
- 13) Draw the architecture of 8085 microprocessor and explain. 10
- 14) a) What is an addressing mode ? Explain various addressing modes of 8085. 5
- b) What are flags ? Draw the format of flag register and explain their function. 5
- 15) a) Explain the following instructions : 5
- i) RRC
- ii) STA X
- iii) XCGH.
- b) Draw the timing diagram for OP code fetch machine cycle. 5
- 16) a) Explain the classification of instructions based on word size. 5
- b) Explain the unconditional and conditional jump instruction. 5
- 17) a) What is stack ? Explain the different operations that can be performed on stack. 5
- b) Write a program to add two 16 bit numbers. 5
- 18) a) What is subroutine ? Explain CALL and RET instruction. 5
- b) Explain RIM and SIM instructions. 5
- 19) a) What is an interrupt ? Explain the classification of interrupt. 5
- b) Distinguish between peripheral – mapped I/O and memory – mapped I/O. 5
- 20) Write a notes on : (5+5)
- a) DMA
- b) Control word format of 8255 A.



65521

V Semester B.C.A. Examination, March/April 2022
(CBCS)
Paper – III : COMPUTER SCIENCE
Data Communication and Networks

Time : 3 Hours

Max. Marks : 100

Instruction: Answer *all* Sections.

SECTION – A

I. Answer **any ten** questions. **Each** question carries **two** marks. (10×2=20)

- 1) Expand DNS and HTTP.
- 2) What are the various TCP/IP utilities ?
- 3) What is Nyquist signaling rate for a noiseless channel ?
- 4) Define line configuration. Mention its types.
- 5) Define bit rate and baud rate.
- 6) What is framing ?
- 7) Expand FDDI and CSMA.
- 8) What is reservation ?
- 9) Define Ethernet.
- 10) Define Router.
- 11) What is flooding ?
- 12) What is bridge ? Mention its types.

SECTION – B

II. Answer **any five** questions. **Each** question carries **five** marks. (5×5=25)

- 13) Explain packet switching.
- 14) Explain Shannon capacity.
- 15) Explain the concept of checksum.
- 16) Write a note on amplitude shift keying.
- 17) Explain in detail about stop-and-wait ARQ.
- 18) Define polling. Explain different polling system.
- 19) Differentiate datagrams with virtual circuits.
- 20) Write a note on FDDI.

P.T.O.



SECTION – C

- III. Answer **any three** questions. Each question carries **15** marks. (3×15=45)
- 21) Explain different switching in detail. 15
 - 22) a) Explain CRC with example. 7
 - b) Explain TDM and WDM. 8
 - 23) a) Explain with diagram twisted pair, coaxial cable and optical fibre. 10
 - b) Write a note on CSMA/CD. 5
 - 24) a) Explain stop and wait ARQ with a neat diagram. 8
 - b) Explain ALOHA and Slotted ALOHA. 7
 - 25) a) Explain in detail TDMA and CDMA. List the advantages and disadvantages of TDMA and CDMA. 10
 - b) Explain different types of bridges in computer network. 5

SECTION – D

- IV. Answer **any one** question. (1×10=10)
- 26) Explain ISO-OSI reference model with a neat diagram.
 - 27) Illustrate polar line encoding scheme.
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65522

V Semester B.C.A. Examination, March/April 2022
(CBCS Scheme)
COMPUTER SCIENCE (Paper – III)
Software Engineering

Time : 3 Hours

Max. Marks : 100

Instruction : Answer **all** Sections.

SECTION – A

Answer **any 10** questions. **Each** question carries **two** marks. (2×10=20)

1. Define software engineering.
2. What is glueware ?
3. What is feasibility study ?
4. Define prototype model.
5. What is coupling ? Name two types of coupling.
6. What are OOD and OOP ?
7. What is the advantage of GUI ?
8. Define fault avoidance and fault tolerance.
9. Define test case.
10. Difference between verification and validation.
11. Name two types of software product with example.
12. Define project management.

SECTION – B

Answer **any 5** questions. **Each** question carries **five** marks. (5×5=25)

13. Write a note on Risk Management Process.
14. Describe system procurement processes.

P.T.O.



15. Explain throw away prototyping.
16. Describe design principles.
17. Write short notes on user interface design.
18. Write a note on :
 - a) Verification
 - b) Validation.
19. Explain the contents of Test Plan.
20. Write a note on quality control.

SECTION – C

Answer **any three** questions.

(3×15=45)

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|---|---|
| 21. a) Explain spiral model with neat diagram. | 8 |
| b) Explain IEEE structure of SRS. | 7 |
| 22. a) Explain the requirement engineering process. | 8 |
| b) Explain different types of cohesion. | 7 |
| 23. a) Explain software reliability metrics. | 8 |
| b) Explain reliability growth modeling. | 7 |
| 24. a) Write a note on object oriented design concept. | 8 |
| b) Explain different styles of user system interaction. | 7 |
| 25. a) Explain the contents of test plan template. | 7 |
| b) Explain various level of testing. | 8 |

SECTION – D

Answer **any one** question. **Each** question carries **10** marks.

(1×10=10)

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|---|----|
| 26. Explain COCOMO model in detail. | 10 |
| 27. Explain system engineering process with a neat diagram. | 10 |