41N0406

B.TECH. IV SEM MAIN / BACK (NEW SCHEME) EXAM 2023-24

COMPUTER SCIENCE ENGINEERING

(4CS4-06)Introduction to Java Programming

Common to CS, IT, AI, DS, MC, CM, CD, CA, AD, AM, CY, IO

[4CS4-06, 4IT4-06, 4AI4-06, 4CD4-06, 4AD4-06, 4AM4-06, 4CY4-06]

Time : 3 Hours]

[Max. Marks : 70

[Min. Passing Marks :

Instructions to Candidates :

Part–A : Short Answer Type Questions (up to **25** words) $10 \times 2 = 20$ marks. All 10 questions are compulsory.

Part–B : Analytical/Problem Solving questions $5 \times 4 = 20$ marks. Candidates have to answer 5 questions out of 7.

Part–C : Descriptive/Analytical/Problem Solving questions 3×10 marks $= 30$ marks. Candidates have to answer 3 questions out of 5.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used/ calculated must be stated clearly.

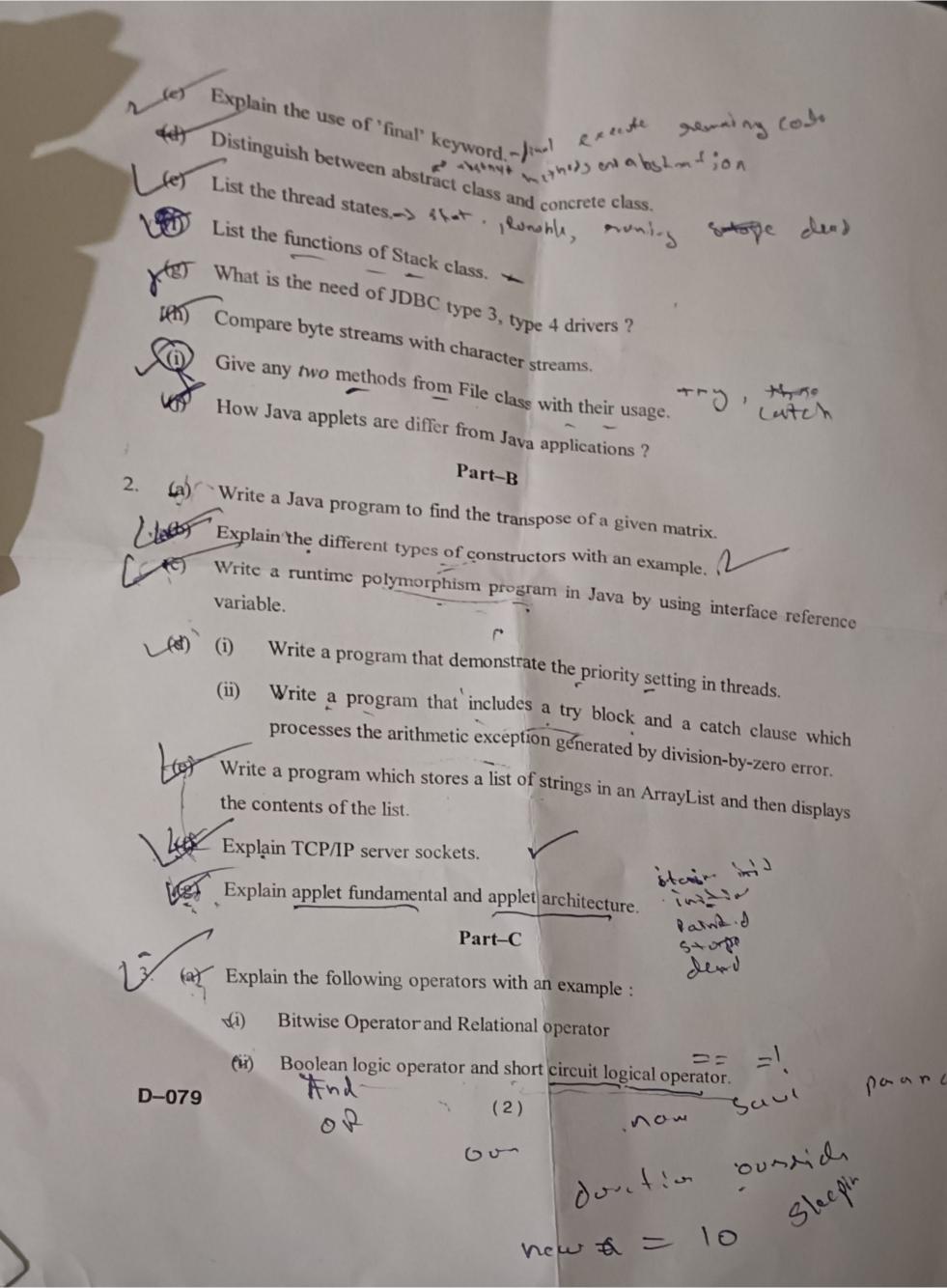Use of the following supporting materials is permitted during examination. (Mentioned in form no. 205).

1_____

2_____

Part–A

1. (a) What is the significance of Java's byte code ?

   (b) Define polymorphism.

(e) Explain the use of 'final' keyword.

(d) Distinguish between abstract class and concrete class.

(e) List the thread states.

(f) List the functions of Stack class.

(g) What is the need of JDBC type 3, type 4 drivers ?

(h) Compare byte streams with character streams.

(i) Give any *two* methods from File class with their usage.

(j) How Java applets are differ from Java applications ?

Part–B

2. (a) Write a Java program to find the transpose of a given matrix.

(b) Explain the different types of constructors with an example.

(c) Write a runtime polymorphism program in Java by using interface reference variable.

(d) (i) Write a program that demonstrate the priority setting in threads.

(ii) Write a program that includes a try block and a catch clause which processes the arithmetic exception generated by division-by-zero error.

(e) Write a program which stores a list of strings in an ArrayList and then displays the contents of the list.

(f) Explain TCP/IP server sockets.

(g) Explain applet fundamental and applet architecture.

Part–C

3. (a) Explain the following operators with an example :

(i) Bitwise Operator and Relational operator

(ii) Boolean logic operator and short circuit logical operator.

(b) What is dynamic method dispatch in method overriding ? Explain with example. Also discuss on garbage collection

(c) What is interface ? Give an example to define and implement an interface.

(d) Describe the need of thread synchronization. How is it achieved in Java programming ? Explain with a suitable program.

(e) Design an Applet to pass username and password as parameters and check if password contains more than 8 characters.

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