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Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Examination (Regular and Supplementary), December 2020

Course Code: CS403

Course Name: PROGRAMMING PARADIGMS

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 4 marks.

Marks

- | | | |
|----|---|-----|
| 1 | What do you mean by compaction? | (4) |
| 2 | Explain orthogonality as language design tool. | (4) |
| 3 | What are the importances of data types in programming languages? | (4) |
| 4 | What are the characteristics of subroutines? | (4) |
| 5 | Begin
Integer n;
procedure P (K: integer)
n := n+1;
k := k+4;
print (n);
end
n :=0;
P(n);
print (n);
end
What will be the output for the following parameter passing methods?
a) call by value/result
b) call by reference
c) call by value | (4) |
| 6 | What is Eval and apply? | (4) |
| 7 | Explain different types of inheritance with example. | (4) |
| 8 | Differentiate function overloading and function overriding. | (4) |
| 9 | Write a note on Remote Procedure call. | (4) |
| 10 | Explain co-schedule and its purpose. | (4) |

PART B

Answer any two full questions, each carries 9 marks.

- 11 a) Explain heap based storage allocation techniques. (6)
b) Consider 1-Mbyte of memory is allocated using Buddy System. Show the allocation and deallocation of the following : (3)
- | | |
|--------------------|----------------|
| 1. Request 100k(A) | 6. Release A |
| 2. Request 240k(B) | 7. Request 75k |
| 3. Request 64k(C) | 8. Release C |
| 4. Request 256k(D) | 9. Release E |
| 5. Release B | 10. Release D |
- 12 a) Explain various categories of type compatibility. (5)
b) Explain memory layout and its impact on record data types. (4)
- 13 a) What is the importance of garbage collector? What are the various techniques used in garbage collection? (5)
b) How does the scope rule of passed function is evaluated? (4)

PART C

Answer any two full questions, each carries 9 marks.

- 14 a) Explain generic subroutine. Explain how generic programs are implemented in C++ and JAVA. (6)
b) What is the difference between coroutine and thread? (3)
- 15 a) Explain the working of scheme interpreter in the DFA simulation with an example. (5)
b) Write short notes on Higher order functions. (4)
- 16 a) What is an exception? How is it handled? Write an example in any one language. (6)
b) Explain equality testing in scheme with example. (3)

PART D

Answer any two full questions, each carries 12 marks.

- 17 a) Explain dynamic method binding in object-oriented programming. (6)
b) Explain data types supported by scripting languages. (6)
- 18 a) Explain features and architecture of java virtual machines. (9)
b) Explain the term barrier and monitor. (3)
- 19 a) Explain pattern matching mechanism in scripting languages. (6)
b) Explain Reflection in detail. (6)

