PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

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Arasanoor, Sivagangai – 630561

DEPARTMENT OF CSE

OUESTION BANK

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FACULTY INCHARGE HOD/CSE

UNIT-I
[OVERVIEW]

Part - A

1. Differentiate object oriented programming from procedure oriented programming.
2. Define abstraction and encapsulation.
3. Differentiate between object and class.
4. List some applications of oop.
5. What is object oriented programming?
6. List the operators used in C++ for handling memory.
7. What is function prototype? Give its specification.
8. What is the difference between a pointer and a reference?
9. What is a namespace?
10. State the purpose of namespaces with an example.
11. What is meant by ADT and abstract class?

Part – B

1. What are the needs for object oriented paradigm?
2. Explain in detail of object oriented concepts.
3. Explain the characteristics of OOPS in detail.
4. List the features of object oriented programming.
5. Explain data encapsulation and inheritance in detail.
6. Explain the structure of C++ program.
7. Explain various control statements used in C++.
8. Explain Do-While with an example.
9. Compare inline functions of C++ with ordinary functions and with macros.
10. What is dynamic binding? How is it achieved?
11. Write short notes on call and Return Reference.
12. Write short notes on New and Delete Operators.
13. Write a C++ program to implement dynamic memory allocation.
14. Explain the concept of ADT with some illustrative example.

UNIT-II
[BASIC CHARACTERISTICS OF OOP]

Part - A

1. What is dynamic constructor? Give an example.
2. Write copy constructor for class date (assume mm, dd, yy as its members).
3. When will the destructor be called? Is it implicit or explicit?
4. What are copy constructors?
5. Highlight the advantages of static data members and static functions in C++.
6. What is destructor?
7. Define attribute.
8. Define operator overloading.
9. State the significance of this pointer in C++.
10. What is encapsulation? Does friend function violate encapsulation?
11. List the operators that cannot be overload.
12. What is a friend function?
13. Why can't friend function be used to overload assignment operator?
14. What is the use of operator overloading?
15. What is friend class?
16. What are merits of using classes?

Part – B

1. Explain in detail about data hiding.
2. Write a C++ program that will ask for a temperature in Fahrenheit and display.
3. Write a program to declare array of objects, initialize and display the contents of arrays.
4. Explain in detail about class, objects, methods and messages.
5. Write about static member variable and static member functions.
6. Write about object creation and destruction.
7. Write a program to illustrate multiple constructors and default argument for a single class.
8. Write a C++ program to define overload constructor to perform string initialization, string copy and string destruction.
9. Write a C++ program to generate Fibonacci using copy constructor.
10. Discuss the characteristics of constructors and destructors.
11. What are constructors? Explain the concept of destructor with an example.
12. Explain the constructors and destructors in detail with an example program.
13. Explain friend function with an example.

14. Write a program to perform multiplication using an integer and object. Use friend function.
15. Design calculator using function overloading.
16. Illustrate the concept of function overloading to find the maximum of two numbers.
17. Write about operator overloading with an example.
18. Write a C++ program to implement C=A+B, C=A-B and C-A*B where A, B and C are objects containing a int value (vector).
19. Write a program to concatenate two strings using + operator overloading.
20. Write a program using operator overloading to add two time values in the format HH:MM:SS to the resulting time along with rounding off when 24 hrs is reached. A time class is created and operator + is overloaded to add the two time class objects.
21. Write the list of rules for overloading operators with one example.

UNIT-III
[ADVANCED PROGRAMMING]

Part – A

1. What is difference between a function template and template function?
2. What is STL, Standard Template Library?
3. How are virtual functions declared in C++?
4. What is single inheritance?
5. What is to be done if we inherit some of the properties of constructor?
6. What is abstract class in cpp in C++?
7. Compare overloading and overriding.
8. Define exceptions. Give an example.

Part – B

1. Explain the usage of templates in C++.
2. Describe templates and its types.
3. Explain function templates with an example.
4. Explain major categories of containers supported by STL.
5. Explain the components of standard template library in detail.
6. Explain with examples, the types of inheritance in C++.
7. What is multiple inheritances? Discuss the syntax and rules of multiple inheritances in C++. How can you pass parameters to the constructors of base classes in multiple inheritances? Explain with suitable example.
8. What is inheritance? List out the advantages of inheritance.
9. Write a C++ program to illustrate the concept of hierarchical inheritance.

10. Explain the order in which the constructors are called when an object of derived class is created.
11. State the rules for virtual functions. Write a C++ program to declare a virtual function &demonstrate it.
12. Explain run time polymorphism with an example program in C++.
13. Explain about implementation of run time polymorphism in C++ with an example.
14. What is an abstract class? What is dynamic binding? How is it achieved?
15. What is the difference between a virtual function and a pure virtual function? Give example of each.
16. Explain about exception handling with an example program.
17. Write a C++ program to generate user defined exception user inputs odd numbers.

UNIT-IV
[OVERVIEW OF JAVA]

Part – A

1. What is JVM?
2. What is byte code? Mention its advantage.
3. Give sample statement for parseInt() and give comments for the statement.
4. Why is java language called as 'robust'?
5. What is inner class?
6. What is the difference between super class and subclass?

Part – B

1. Explain the virtual machine concept with reference to java.
2. Explain the importance of JVM in JRE.
3. Explain various features of java.
4. Explain how C++ differs from java.
5. Write a java program to find factorial of a given number.
6. Write a menu based java program that can calculate the area of triangle, circle or square based on the user's choice.
7. Write a java program to find the sum of the following series.

   1 - 2 + 3 - 4 +…. + n.
8. Write a java program to create two single dimensional arrays, initialize them and add them; store the result in another array.
9. Write a java program to find the maximum number of given array.
10. Write a program to convert an integer array to string.

11. Discuss about java command line arguments.
12. Explain arrays and its types in detail with suitable example.
13. Create a complex number class in java. The class should have a constructor and methods to add, subtract and multiply two complex numbers and to return the real and imaginary parts.
14. Write a java class called 'student' with name, marks of 3 subjects and total marks. Write another class name calculate that gets marks of the student and calculates the total marks and displays the result. (pass and fail).
15. Create class box and box3d. box3d is an extended class of box. The above two classes has to fulfill the following requirement.
    (i) Include constructor (ii) Set value of breadth, height (iii) find out area and volume.
16. Explain in detail about the inheritance mechanism in java with an example programs.

UNIT-V
[EXCEPTION HANDLING]

Part – A

1. List any four packages in java and highlight their features.
2. What are packages?
3. Define interface. State its use.
4. What is the difference between an interface and an abstract class?
5. What is API package?
6. Under which contexts would you use 'final' and 'finally'.
7. What is the difference between throw and throws?
8. What are the advantages of using exception handling?
9. What are the two ways of creating java threads?
10. What is thread? How does it differ from a process?
11. What is multithreading?
12. Which class and interface in java is used to create thread and which is the most advantageous one?
13. What is the difference between the String and String Buffer classes?
14. What is stream? What is input stream?
15. Name the two super classes used in character stream.

Part – B

1. What are packages? How do they created and used?
2. Explain about packages in java.
3. How do we add a class or interface to a package?

4. Write a java program to implement nested packages.

5. Explain the interfaces in detail with suitable example.

6. What is an exception? List the java common exception types and causes.

7. Write a java program to add 2 integers and raise exception when any other character except number (0-9) is given as input.

8. Write a java program to create a user defined exception whenever user input a word “hello”.

9. Write a program containing a possible exception. Use a try block and throw it and a catch block to handle it properly.

10. Explain with an example program, exception handling in java.

11. Explain the life cycle of a thread in detail with an example.

12. What is a thread? How do you create threads?

13. What is multithreading? Explain with an example.

14. Explain about thread synchronization with an example.

15. Write a java program to perform all string operations using the string class.

16. Explain about various string operations in java.

17. Write short note on Strings in java.

18. Write a simple program to find a given string in a string array.

19. Write a java program to split a string into multiple java string objects.

20. Explain the concept of stream and its byte stream classes in detail.

21. Write a short note on various I/O streams in java.

22. Write a java program to demonstrate how to read and write data to a file