PPL Que Bank

Unit 1:

1. Take one or two languages you have used and describe facilities provided for program organization.
2. Take one or two languages you have used and describe how language supports interaction with external environment.
3. Explain Software development process? Write about most well known SDLC model?
4. Explain different phases in waterfall model.
5. What is mean by programming paradigms. Write key features of

i) Imperative programming paradigm
ii) Object oriented programming paradigm
iii) Functional programming paradigm
iv) Logic or declarative programming paradigm

6. Explain the co-relation between PL & Computer architecture.
7. Define the qualities of good programming language.
8. Write criteria for good PL

i)PL & reliability
ii)PL & Maintainability
iii)PL & efficiency

9. What is syntax & semantics of PL ?
10. What are different semantic elements of PL?
11. Explain syntax & lexical rule of PL.
12. Draw syntax diagram for lexical & syntax rule for a sample language.
13. Explain Different approaches for description of semantics of PL.
14. What are different options available for language processing.
15. Explain term binding. Give example of

i.Translation time
ii.execution time binding
iii. language implementation time
iv. language definition time.

16. What is data object / variable. What is lifetime of data object.
17. Explain attributes with respect to variables.
18. Write EBNF & syntax diagram for while statement in C.
19. Write factorial program fact recursively and show , Explain activation record for fact(4).
20. What is mean by routine? Explain different types of routines.
21. Explain referencing environment of routines. Explain generic routine.
22. What is difference between recursive call & ordinary call. How recursive subprogram act as important sequence control structure in program.
23. Explain different parameter passing method with example in C++ language.
24. Explain rum time structure concept along with activation record.
25. Explain about static and dynamic links in activation record

Unit Two:

1. What is mean by DT?
2. Advantage of built-in DT?
3. What is mean by type constructors?

4. Explain Cartesian product, discriminate union,, finite mapping, recursion,, sequence and power set models for type constructors with suitable example.
5. What is difference between union & structure.
6. Justify static scope doesn't support recursion.
7. Explain different user defined data types with suitable examples.
8. Explain abstract data types with example.
9. Explain type system of PL
10. Write difference between dynamic & Static type checking.
11. What is mean by strongly type system? Why it is useful?
12. What is mean by coercion?
13. Explain Generic data types along with examples from C++ and ADA languages.
14. Write type structure for C++, Pascal and Java languages.
15. Whether nested procedures & function acts as an efficient design construct?
16. What is mean by Block oriented structure programming.
17. List functions by C# for delegation & event handler.
18. Facilities & deficiencies of PROLOG control predicates.
19. Write application of logic programming.
20. Show how variant record type in pascal and ADA used to define a binary tree of integer.
21. What is dangling reference? How it arise during execution and why it is dangerous?
22. In C++, what is difference between assigning value to pointer and assigning value to reference.
23. How ADT is defined in ADA? Explain with example.
24. Study case statement of pascal and ADA . Compare it to C++ switch statement.
25. Explain side effects and aliasing with examples.
26. Explain exception handling facilities in C++ and ADA languages

Unit Three:

1. List and structuring compilation discuss the statement level control structures and unit level control structure with their syntax.
2. What is generic programming ? How C++ offers generic programming constructs? Give example.
3. What re four main programming paradigms? Which .
4. Programming languages are based on these? Explain the feature of any one of these.
5. Explain various methods of grouping programming units in Ada. What is advantages of grouping the units?
6. Recognize efficient programming paradigm for a given example and justify your answer-design and implement of hashing technique using chaining.
OR
Design and implement to find shortest path in given graph.
7. Explain following concepts in C++ and ADA
8.
1) Encapsulation 2)Interface and implementation 3)Grouping of units 4)Library of modules
9. Explain separate and independent compilation along with programming languages as examples.
10. Study and present the main features of separate compilation.
11. Complete the implementation of the packages body in figure 5.3.
12. Suppose two Ada units U1 and U2 must use the same procedure P. Can P be embedded in a single sub unit? Can P be embedded in a single unit? In the latter case, what are the constraints on the order of compilation?
13. Consider a generic function swap(x,y) that interchanges the values of its two arguments. Write a bubble sort in C++ that uses swap to interchange the elements. How would your solution be

different if you try the same approach in Ada?
14. Ada defines two kinds of types: private type and limited private type. (Check these features in the manual.) What is the difference between these two? Is there a similar concepts in C++? If not? Does their absence imply a lack of functionality in C++.
15. what is the difference between overloaded functions and generic functions in C++?
16. Suppose we want to write a generic sort routine to sort elements of types T. we might use our swap routine from a fragment of the C++ routine might look like this:

```
template<class T>
sort(...)
{
...
swap(x,y)
...
}
```

I f we were to write sort in Ada, we would have to instantiate swap first. What type should we use to instantiate swap? Explain the problem you encounter. Check the Ada manual to find a solution to this problem.

Unit Four:

1. what are primitive data types? List the primitive data types in java and their respective storage capacity.
2. Explain various methods of grouping programming units in Ada. What is advantage of grouping the units?
3. What is an Interface in Java? How is this different than a class? Give example of interface.
4. What do you mean by method overloading ? Write a program which adds two integers and three integers by using overloaded methods for adding two and three integers respectively.
5. What is the use of static variables and methods in Java? Give example of static declaration. What are restrictions on methods which are declared static?
6. What is methods overriding in Java? What is advantages of using overriding? Demonstrate method overriding with example.
7. How is the architecture of an applet different than a console based program? Explain the function of init(), start() and stop() methods.
8. Which class support character input to the program? Write a program to read the name of the user and display welcome massages.
9. What is the use of PrintStream and PrintWriter classes?Which methods are supported by these classes? Give examples of each.
10. What are uncaught exceptions? What are advantages of exception handling ? State the use of try(), catch(), and throw() methods.
11. Write a java program which explains inheritances with super keyboard. A class to display the attributes of the vehicle Color, Speed, Size which are used by another class with attributes as CC, Gear.

Unit Five:

1. What is inheritance? What are advantages of using inheritance ?
Show by example the simple inheritance in Java.

2. Explain the concepts and sate the difference in the following with examples :
(1) Method Overloading and Overriding

(2) Applet and Console Program.

3. Explain classes in Java? Also explain how instances of classes are created in Java.

4. What is the use of this keyword in Java?

5. Explain garbage collection in Java.

6. What do you understand by static and final classes in Java?

7. Explain nested and inner classes in Java.

8. Explain use of super keyword in Java.

9. Write a short note on use of packages in Java.

10. What is Interface in Java? What is the difference between Classes and Interfaces?

Unit Six:

1. State with example the use of the following built in exceptions in Java :
(1) IndexOutOfBoundsException( )
(2) NullPointerException( )
(3) ArrayIndexOutOfBoundsException( )

2. Write a program in Java using switch-case statement to perform addition, subtraction, Multiplication and Division of given two numbers and print the result. Does the program generate any exception ?

3. Explain use of try, catch, throw, throws, finally keywords in Java.

4. How to use multiple catch clauses for the same try blocks?

5. How to use nested try blocks in Java?

6. How to create our own Exception sub classes in Java?

7. Write a short note on reading console input and writing console output in Java.

8. Explain Applet architecture in detail.

9. Distinguish between Applet and Application program?

10. Write a short note on Applets in Java.