(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2063 Roll No. | | | | | | | | | | |

B. Tech.

(SEM. VI) THEORY EXAMINATION 2010-11

OBJECT ORIENTED SYSTEMS AND C++

Time : 3 Hours *Total Marks : 100*

Note : Attempt **all** questions.

1. Attempt any **two** parts : **(10×2=20)**

(a) (i) Describe the following terms with suitable example : Abstract Data Type and Polymorphism.

(ii) What are the advantages and disadvantages of Object Oriented Programming ? Discuss.

(b) (i) A directory file system contains information about files in a directory, including both directory files as well as other directory systems. Prepare an object diagram which models directory files and ordinary files.

(ii) What do you understand by aggregation ? Explain with an example. Is the aggregation and association concepts same ? Discuss.

(c) (i) What do you mean by generalization ? Explain with a suitable example. Is it same as specialization ? Explain.

(ii) Draw a class and instance diagram for looping statements in C++.

2. Answer any **two** parts : **(10×2=20)**

(a) What is the role of scenarios in modeling ? Explain. Some combined bath-showers have two facets and a lever for controlling the flow of the water. The lever controls whether the water flows from the shower head or directly into the tub. When the water is first turned on, it flows directly into the tub. When the lever is pulled, a valve closes and latches, diverting the flow of water to the shower head. To switch from shower to bath with water running, one must push the lever. Shutting off the water releases the lever so that the next time the water is turned on, it flows directly into the tub. Write a scenario for a shower that is interrupted by a telephone call.

(b) (i) What do you understand by activity and action ? What are their role in modeling ? Explain with an example.

(ii) What do you mean by an event trace ? Discuss with some real example showing event classes and attributes.

(c) Discuss the following with an example :

(i) Event Generalization

(ii) Conditions

(iii) Notations used to make state diagram

(iv) Automatic transition.

3. Attempt any **two** parts : **(10×2=20)**

(a) What do you mean by data flow diagram ? What are the various symbols used to make data flow diagram ? Prepare a data flow diagram for computing the volume and surface area of a cylinder. Inputs are the height and radius of the cylinder. Outputs are the volume and surface area. Put the appropriate constraints on the input values. Discuss the several ways of implementing the data flow diagram.

(b) (i) Write short note on the Nested Data Flow diagram.

(ii) How are the dynamic model, object model, and functional model related ? Explain.

(c) Explain the following with suitable example :

(i) actor

(ii) terminator

(iii) control flow

(iv) client

(v) action.

4. Answer any **two** parts : **(10×2=20)**

(a) (i) What do you understand by virtual functions ? Discuss the merits and demerits of using virtual functions. Explain with an example.

(ii) Describe the principles of object oriented programming in detail.

(b) (i) Write a function in C++ to check that whether a given string is a palindrome or not ? Give the flow chart for the same.

(ii) What do you understand by inheritance extended class ? Explain with some suitable example.

(c) (i) What do you mean by polymorphism ? How polymorphism is implemented in C++ ? Discuss with an example.

(ii) Write a short note on Exception handling in C++.

5. Answer any **four** parts : **(5×4=20)**

(a) Describe the following UNIX commands with proper syntax and an example :

(i) cat,

(ii) tail

(iii) who

(iv) date

(v) more.

(b) Discuss the structure of a typical UNIX directory with the help of a diagram.

(c) What is the difference between the relative path and absolute path ? Modify your command prompt so that it always displays the absolute path of your current working directory.

(d) Describe any 5 vi editor commands.

(e) Describe any FIVE commands in UNIX to handle ordinary files.

(f) Write a program using shell programming to read the two integers values and display their sum and also display which is greater one.