Academic Year (2017-18)

Department of Information Technology (Under Graduate Course) B.Sc.IT

Question Bank

Semester – IV

Core Java(USIT401)

Advanced Learners

1. Explain how memory is allocated to objects in Java?
2. Discuss in detail the working of 'foreach' loop in Java.
3. Explain the need of variable arguments with help of an example.
4. What is garbage collection in Java? How is it helpful?
5. When do we use keywords final and static? Explain the working of static member functions.
6. What do you mean by method overloading? Write a program to implement the concept of constructor overloading.
7. Explain : (i) Variable Arguments(Varargs) (ii) this.
8. Write a short note on access specifiers in Java.
9. Demonstrate the behavior of static members in Java using a a suitable example.
10. Write a comparative note on overloading and overriding in Java.

Slow Learners

1. List and explain the components of Java Virtual Machine(JVM).
2. Java is called a platform independent and strongly typed language. Justify your answer.
3. What do you mean by object reference variable in Java? Differentiate between object and reference of a class.
4. What are the primitive data types in Java? Briefly explain their size, range and other details.
5. Define Identifier. Explain rules for identifiers in Java.
6. Write a short note on Java Virtual Machine (JVM).
7. How is the main( ) method of Java written? Explain in detail.
8. List and explain the salient features of Java.
9. What is meant by Keyword in Java. What are the Keywords available in Java
10. Write in detail about different types of operators in Java, category-wise quoting their functionality, operands and return type. Give one example statement for each.

Assignments

1. Explain the use of keywords super and this. What are the facts based on which base class constructors will be called while creating derived class objects?
2. What is an interface? How is an interface different from a class?
3. Explain the concept of method overriding with the help of an example.
4. What is the purpose of a package? Explain the steps to create user define packages in Java.
5. Write a program to implement the concept of multilevel inheritance.

Introduction to Embedded System(USIT402)

Questions: Advanced Learner

1. Differentiate between RISC and CISC.
2. Explain Little Endiannes and Big Endiannes.
3. What is embedded system? What are the working elements of an embedded system?
4. Define embedded system with the help of microwave oven as an example.
5. Compare 8051 family members.
6. Explain 8051 microcontroller hardware.
7. Write a note on Remote Debuggers.
8. Write a note on Emulator.
9. Explain context switch.
10. Write a note on task synchronization.

Questions: Slow Learner

1. Differentiate between general purpose computers and embedded system?
2. Give classification of embedded systems based on generations.
3. Explain various types of RAM.
4. Explain various types of ROM.
5. Explain various datatypes used in 8051 C programming.
6. Write an 8051 C program to send values from 00H to FFH on port 1.
7. Explain the structure of embedded system.
8. What is delay? Explain use of delay in embedded system.
9. Explain various task states.
10. Write a short note on schedulers.

Assignments

1. Write a short note on COTS.
2. Write short note on hybrid type of memory.
3. Write an 8051 C program to get bit P1.0 and send it to P2.7 after inverting it.
4. Write a note on ROM Emulator.
5. What is Firmware debugging?

Computer Oriented Statistical Techniques(USIT403)

Please refer Mathematics Q.Bank

Software Engineering(USIT404)

Questions: Advanced Learner

1. Short note of System Engineering.
2. Define Critical System. What are their types? Give some examples.
3. What are the fundamental activities of software process? What are the types of software Process models? Explain in brief.
4. Describe Waterfall Model. (SDLC)
5. What is Feasibility study? Explain.
6. What are the phases of software requirements elicitation and analysis Process? Why is it difficult to elicitate the requirement in real situation?
7. Explain the Activities of user interface process.
8. Short note of Software inspection.
9. What are the stages of automated static analysis?

10. Explain Security Risk Management.

Questions: Slow Learner

11. Differentiate between System Software and Application Software.
12. What is software engineering? Describe the layered technology of Software Engineering.
13. What is the software Validation? What are the steps of Software testing?
14. Explain the phases of Rational Unified Process (RUP).
15. Explain the term Ethnography.
16. List the multiple checks to be conducted during the requirement validation Process.
17. What is the type of cost estimation techniques? Explain in brief.
18. Explain Algorithmic cost modeling.
19. What is metrics & measurement?
20. Explain the attributes & characteristics of Process.

Assignments

21. Describe the Safety Critical System with examples.
22. List and explain the responsibilities of Software manager as part of the management team.
23. What are the weaknesses of structured methods? What are its supportive tools?
24. List the tools of RAD environment.
25. What are the six stages of service construction by composition in system development? Explain.

Computer Graphics and Animation (USIT405)

Questions: Advanced Learner

1. Explain the following Video Displays Devices (a) refresh cathode ray tube(b)raster Scan Displays (c) Random Scan Displays (d)Color CRT Monitors
2. Digitize a line from (10,12) to (15,15) on a raster screen using Bresenham's straight line Algorithm what are the various line drawing algorithms
3. Write down and explain the midpoint circle drawing algorithm. Assume 10 cm as the radius and co-ordinate as the centre of the circle.
4. Calculate the pixel location approximating the first octant of a circle having centre at (4,5) and radius 4 units using Bresenham's algorithm
5. Explain the following 3D composite transformations (i)Translation (ii)Rotation
6. Explain in detail the Sutherland-Hodgeman clipping algorithm with an example
7. Explain painter's algorithm.
8. Explain types of projection with its type.
9. Write short notes on the following visible surface detection methods.(i)Back face detection (ii)Depth –Buffer method (iii)A-Buffer method
10. How will you convert from CMYK to RGB color models?

Questions: Slow Learner

1. Define Computer graphics.
2. What are the video display devices
3. Define refresh buffer/frame buffer.
4. What is meant by scan code?
5. Define 2D transformation.
6. List out the merits and demerits of DVST

7. Explain BSP.
8. write a short note on colorimetry.
9. What is raster scan and Random scan system
10. What is a pixel?

Assignment

1. Define Projection.
2. What is Output Primitive?
3. What are points and lines in the computer graphics system?
4. What is DDA? What are the disadvantages of DDA algorithms?
5. Explain histogram equalization.