14/12/11 TE IT sem-V (R) MPPS

ws Sept-2011-190

**Con. 6542–11.** **MP–3928**

(3 Hours) **[ Total Marks : 100**

**N. B. :** (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions from remaining **six** questions.
(3) Draw **neat** sketches wherever **ncecessary**.
(4) All **dimensions** mentioned in **component** drawing are in mm.
(5) Use of **standard code** sheets for **G** and **M** codes is **permitted**.

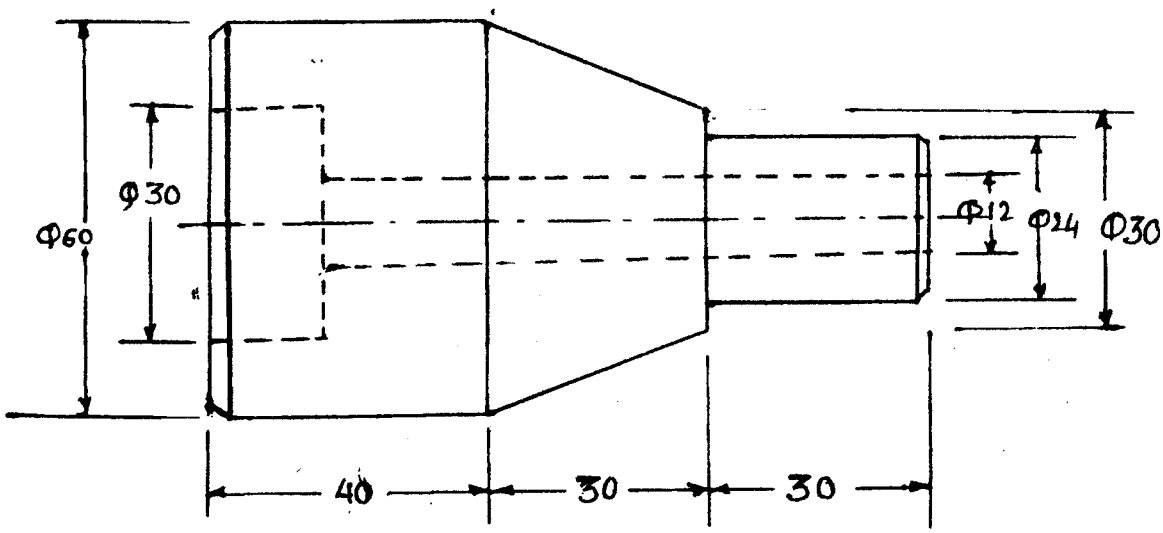
1. (a) Explain the role of computers in manufacturing. **6**
(b) Expain any one type of plant layout. **4**
(c) List any eight operations that can be performed on Lathe machine and explain any four of them. **10**

2. (a) Explain any four SQC tools with sketches. **8**
(b) Following table gives number of missing screws in a assembly of parts. Construct C-chart with 3 sigma limit and comment on the process. **12**

| **Assembly number** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **No. of Missing Screws** | 15 | 14 | 21 | 27 | 10 | 16 | 26 | 12 | 14 | 15 |

3. (a) What is ergonomics ? Which factors are to be considered for an ergonomic design of Benchdesk used in classroom ? **8**

(b) For the given component drawing, prepare a suitable Process Plan. Mention clearly, the operation number, description of the operation, the machine used, tooling used and measuring instruments required. **12**

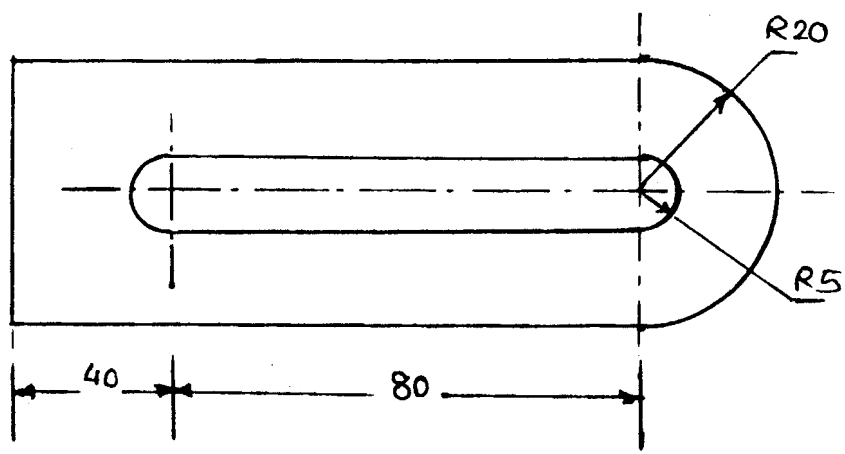



**[ TURN OVER**

4. (a) Explain flexible manufacturing system with neat sketch. 10
   (b) Explain assemble-to-order in relation to demand management. 5
   (c) State benefits and limitations of group technology. 5

5. (a) Differentiate between Thermostats and Thermoplast. Explain process of extrusion related to polymer manufacturing. 10
   (b) With neat sketches, explain TIG and MIG welding. Compare them. 10

6. (a) Explain any **two** of the following :– 8
   (i) CNC (ii) DNC-I (iii) DNC-II.
   (b) For the given component drawing, write a suitable part program, to machine the outer profile and a slot. Make suitable assumptions regarding the tools, speed, and feed rates. Show on your sketch, the set point and the axis. 12




7. Write short note on an **four** :– 20
   (a) JIT
   (b) MRP-I
   (c) Robots in Manufacturing
   (d) Automation
   (e) Transformation Process.

---

L TE IT Sem-I (REV) 19/12/2011
OOAD

VT-Sept.-11- 176

**Con. 6712–11.** **MP–3937**

( 3 Hours ) **[ Total Marks : 100**

**N.B. :** (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.

1. The TJSB Bank client must be able to deposit an amount to and withdraw an amount from users account using the bank application. Each transaction must be recorded, and the client must have the ability to review all transactions performed against a given account. Recorded transaction must include the date, time, transaction type, amount and balance amount after the transaction. Construct Activity Diagram and use Case Diagram. **20**

2. (a) Explain the following terms :– **10**
   (i) Abstraction
   (ii) Generalization
   (iii) Association
   (iv) Role Names
   (v) Aggregation.
   (b) Explain usability testing and user satisfaction testing. **10**

3. (a) What is the difference between Specialization and Generalization ? Explain with the help of example. **10**
   (b) State different types of coupling and cohesion ? Explain types of coupling and cohesion. **10**

4. (a) Construct sequence diagram for withdrawing money from ATM machine. **10**
   (b) Draw class diagram for Hotel Management System. **10**

5. (a) Construct usecase diagram for Hospital Management System. **10**
   (b) What is Deployment Diagram ? What are the elements used in Deployment Diagram ? Explain each. **10**

6. (a) Explain Architectural patterns and Design patterns. **10**
   (b) For the Tit-Bit Pizza develop statechart diagram for the following classes :– **10**
   (i) Customer
   (ii) Employee
   (iii) Pizza Type
   (iv) Order
   (v) Payment.

7. (a) Construct component diagram for Online Railway Reservation System. **10**
   (b) What is Requirement ? What are the techniques for Gathering and Analyzing requirement ? **10**

**********

TE IT Sem-IV (R) CGVRS

**Con. 6164–11.** **MP–3925**

(3 Hours) **[Total Marks : 100**

**N.B. :** (1) Question No. **1** is **compulsory**.
(2) From remaining **six**, solve any **four**.
(3) **All** questions carry **equal** mark.
(4) Make **suitable** assumptions wherever **required**.

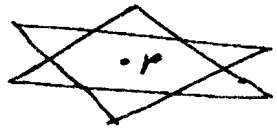
1. (a) What is meant by homogenous matrix representation. **20**
(b) List various workstation based Architecture.
(c) What is meant by Geometric modelling in case of virtual reality.
(d) What are Bezier Curves.

2. (a) Explain the type of co-ordinate systems used in computer graphics. **20**
(b) What are the five classic components of virtual Reality System.
(c) How is the 3-D world viewed.
(d) What are PC graphic Accelerators.

3. (a) Give various Applications of Computer graphics. **20**
(b) Explain Translation of a line in detail.
(c) Explain method of region code Generation in case of Cohen-Sutherland line clipping Algorithm.
(d) What is the advantage of using virtual reality.

4. (a) For A $(x_1\ y_1)$ and B $(x_2\ y_2)$ as endpoints, Use DDA Algorithm to draw a line joining them. **20**
(b) What are different types of reflections.
(c) Explain 3-D Tracker performance parameters like jitter and drift.
(d) Explain the concept of collision detection and surface deformation in case of physical modelling in virtual Reality.

5. (a) Explain the viewing Transformation model in 2D. **20**
(b) For the given shape show how inside outside test is used to find point P.




(c) List various gesture interface devices and explain any one.
(d) What is meant by Scaling of a object.

6. (a) Explain the concept of Text Clipping. **20**
(b) Explain the Term Personal graphic displays.
(c) What is meant by Computer Animation.
(d) Compare boundary fill and flood fill Algorithm.

7. (a) Explain the Algorithm for Midpoint Subdivision line Clipping Method. **20**
(b) Write short note on haptic interface I/0 device.
(c) What are fractals in computer graphics.
(d) Explain the graphics rendering pipeline.

---

9/12/11 TE IT Sem - V (Rev) CTNC

Con. 6367-11. **MP-3934**

(3 Hours) **[Total Marks : 100**

**N.B. :** (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions from **remaining** questions.
(3) Consider **suitable** data if **necessary**.

1. Attempt the following :— **20**
   (a) What are the different between ASK,FSK,PSK digital modulation technology ?
   (b) Why M-ary PSK schemes give a higher data rate ? What are practical problems in increasing the phases beyond a limit ?
   (c) Explain ISO-OSI layered architecture in brief.
   (d) What is difference between virtual circuit switching, circuit switching and packet switching ?
   (e) What is the importance of logical layers in Telecommunications Management Networks (TMN) ?

2. (a) Explain differentially encoded phase shift keying (DEPSK) in detail. **10**
   (b) What is mean by Handoff ? Explain how proper handoff takes place with some Handoff Algorithms. **10**

3. (a) Explain in detail block diagram of analog and digital communication system. **10**
   (b) What is basic difference between transparent bridging used in Multi-bridging in Ethernet LANs ? **10**

4. (a) Explain Code Division Multiple Acess technique. How spreading and scrambling takes place also explain Direct Sequence Spread Spectrum ? **10**
   (b) Explain the merits and demerits of input buffering, output buffering and shared buffering. **10**

5. (a) Explain ISDN architecture and How call is established as well as released in ISDN ? Also describes the protocol stack for ISDN ? **10**
   (b) What is difference between traffic shaping and traffic policing ? How can shaping avoid Policing ? Explain with a simple example ? **10**

6. (a) What is need for network management ? Differentiate between the TMN functional Architecture and TMN physical architecture. **10**
   (b) Explain in details digital signatures and certificates ? **10**

7. Write short notes on any **four** of following :— **20**
   (a) Kerberos
   (b) 3G UMTS network
   (c) Data multiplexing
   (d) Bluetooth technology
   (e) Error Correction And Detection Methods at data link layer
   (f) RSA algorithms.

———S———

29/11/11. T.E. Sem V. I.T.
Operating System for Computational Devices.



**Con. 5975–11.**

**MP–3932**

( 3 Hours ) **[ Total Marks : 100**

**N.B. :** (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions from the remaining questions.
(3) Assume **suitable** data wherever **necessary**.

1. (a) Explain various system calls with appropriate syntaxes. **10**
   (b) Explain mutual exclusion. Also write a note on Peterson's Algorithm. **10**

2. (a) Explain Demand Paging. **10**
   (b) What are various disk scheduling algorithms ? Explain each one in brief. **10**

3. (a) Explain the page replacement policies Implement LRU, OPT, FIFO for the following sequence :– **10**
   0, 1, 2, 4, 3, 7, 1, 4, 2, 3.
   Also calculate hits and faults.
   (b) Write a note on Buffering Techniques. **10**

4. (a) What are pre emptive and non-premptive algorithms. **10**
   (b) Explain DMA in terms of system concurrency. What is its implication on hardware design ? **10**

5. (a) Write a note on File Access Methods. **10**
   (b) Consider the following snapshot :– **10**

| Process | Allocation | | | Max | | | Available | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | A | B | C | A | B | C |
| $P_0$ | 1 | 3 | 5 | 0 | 6 | 5 | 6 | 5 | 6 |
| $P_1$ | 1 | 0 | 0 | 2 | 1 | 3 | | | |
| $P_2$ | 2 | 0 | 1 | 3 | 4 | 6 | | | |
| $P_3$ | 4 | 1 | 1 | 1 | 5 | 7 | | | |
| $P_4$ | 5 | 4 | 3 | 0 | 0 | 1 | | | |

Answer the following questions :–
(i) What is the content of matrix need ?
(ii) Is the system in safe state ?
(iii) If process $P_1$ arrives with a request of (4, 5, 3), can the request be granted.

6. (a) Draw and explain architecture of RTOS. **10**
   (b) What is a Semaphore ? Explain in detail the usage of semaphore and resource acquisition and release. **10**

7. Write short notes :– **20**
   (a) Race Condition
   (b) VM Ware
   (c) Monolithic Vs Micro Kernels
   (d) Shared OS Configuration for Multi Processor System.

**********