

15. a) Write notes on character streams and byte classes in Java.  
 b) Discuss briefly about Java I/O classes.

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- (b) Find the Norton equivalent of the circuit shown in the figure below :—

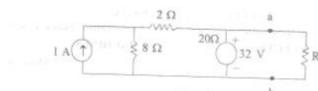


Fig. 2

12. (a) Deduce an expression for power in a 3-phase balanced circuit in terms of line voltage and line current. 5  
 (b) Derive the expressions for energy stored in inductance and capacitance. 5  
 13. (a) Explain the principle of operation of a transformer on no-load. 5  
 (b) A transformer on no-load takes 4.5 A at a power factor of 0.25 lagging when connected to a 230 V, 50 Hz supply. The number of turns of the primary winding is 250. Calculate  
 (a) the magnetising current,  
 (b) the core loss, and  
 (c) maximum value of flux in the core. 5  
 14. (a) Derive the emf equation of a dc generator. 5  
 (b) Explain the working principle of a dc motor. 5  
 15. (a) Explain the production of a rotating magnetic field with a 3-phase supply and 3-phase winding. 6  
 (b) Derive the torque equation of an induction motor. 4  
 16. (a) Explain the principle of operation of a stepper motor. 5  
 (b) Explain the principle of operation of a split phase capacitor start-capacitor run motor. 5  
 17. Write short notes on any THREE of the following :— 10  
 (a) Dot convention  
 (b) Measurement of power by 2-wattmeter method  
 (c) Capacitor start and capacitor run Induction motor  
 (d) Applications of D.C. motors.

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FACULTY OF ENGINEERING  
 B.E. 2/4 (CSE) II Sem. (Suppl.) Examination, January 2012  
 ELECTRICAL CIRCUITS AND MACHINES

Time: 3 Hours]

[Max. Marks: 75

Note : Answer all questions from Part A.  
 Answer any five questions from Part B.

- PART – A (25 Marks)
- What is rms value of an alternating current? 2
  - Draw the speed torque characteristics of induction motor. 3
  - What are the basic features of split-phase motors? 3
  - How are single phase motors made self starting? 2

PART – B (5x10=50 Marks)

11. Find using Thevenins theorem, the current in the  $5\Omega$  resistor connected across AB in the network shown in figure.



12. A balanced load of  $(8+j6)\Omega$  per phase is connected to a 3-phase, 230V, 50Hz supply. Find the line current, power factor, real power, reactive power and apparent power.

(This paper contains 2 pages)

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Code No.: 5240

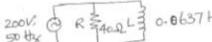
16. Explain open circuit and short circuit tests on a transformer and also explain how you can find efficiency and regulation from these tests.

17. Write a short notes on the following :— 3  
 a) Energy stored in inductance. 3  
 b) Regulation of transformer. 3  
 c) Split phase motor. 4



## PART – B

(50 Marks)

11. a) An alternating voltage is given by  $v = 141.4 \sin 314 t$  find  
     (i) frequency (ii) rms value (iii) average value (iv) instantaneous value. .... 4  
     b) Determine the real and reactive power consumed by the circuit given below.  
         (i) frequency (ii) rms value (iii) average value (iv) instantaneous value. .... 4  
     c) Determine the real and reactive power consumed by the circuit given below. .... 6
- 
12. a) Explain the measurement of 3- $\phi$  power by using two wattmeter method. .... 5  
     b) A 40 kVA single phase step down transformer has a full load secondary current of 200 A and the total resistance referred to secondary is 0.008  $\Omega$ . Find the efficiency of the transformer at full load and unity power factor. .... 5
13. Describe the construction and working principle of a dc machine and explain how emf is produced in a generator. .... 10
14. a) Explain the production of rotating magnetic field. .... 5  
     b) Explain any one method of speed control of induction motor. .... 5
15. Explain the operation of capacitor start capacitor run single phase induction motor. .... 10
16. A 4 kVA, 400/200 V, 50 Hz, single phase transformer has the following test data.  
     OC test : 200 V, 2A, 90 W.  
     SC test : 20 V, 10A, 100 W.  
     Find the equivalent circuit referred to high voltage side. .... 10
17. Write a short notes on the following :  
     a) Autotransformer .... 3  
     b) Energy stored in capacitor .... 3  
     c) Application of DC motors. .... 4



Code No. : 6213

FACULTY OF ENGINEERING  
 B.E. 2/4 (C.S.E.) (II Semester) (Supple.) Examination, December 2009  
 ELECTRICAL CIRCUITS AND MACHINES

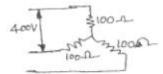
Time: 3 Hours]

[Max. Marks: 75]

Note : Answer all questions from Part A. Answer any five questions from Part B.

## PART – A

(25 Marks)

1. Derive the expression for r.m.s. value of a sine wave. .... 3  
 2. Define reactive power. .... 2  
 3. Calculate the power consumed by the 3- $\phi$  circuit given below. .... 3
- 
4. Define voltage regulation of a transformer. .... 2  
 5. Give the applications of series and compound motors. .... 3  
 6. Why is it not possible to run an induction motor on synchronous speed ? .... 3  
 7. How can the direction of rotation of a capacitor start motor be reversed ? .... 2  
 10. Where and why is a centrifugal switch used in a split phase motor ? .... 3

Code No.: 5237/O

FACULTY OF ENGINEERING  
B.E. 2/4 (CSE) II Semester (Old) Examination, May/June 2012  
OBJECT ORIENTED PROGRAMMING USING JAVA

Time : 3 Hours]

[Max. Marks : 75

Note : Answer all questions of Part A.

Answer five questions from Part B.

Time : 3 Hours]

[Max. Marks : 75

Note : Answer all questions of Part A.

Answer five questions from Part B.

PART – A

25

1. What are packages ? 3
2. What are static methods ? 2
3. What is the purpose of print writer class ? Discuss. 3
4. What are threads ? 2
5. Briefly discuss about iterators. 3
6. What are comparators ? 2
7. List the interface's of Java Input Stream. 2
8. Briefly discuss about serialization. 3
9. List different layout's managers. 2
10. Discuss briefly about different menu events. 3

PART – B

50

11. a) Explain the control statements used in Java. 2
- b) What are the various object oriented concepts ? Discuss. 3
9. List different layout's managers. 2
10. Discuss briefly about different menu events. 3

PART – B

50

11. a) Explain the control statements used in Java. 2
- b) What are the various object oriented concepts ? Discuss. 3
12. Explain in detail about Java's exception handling mechanism. 5

(This paper contains 2 pages)

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Code No. : 5439/N

FACULTY OF ENGINEERING  
B.E. 2/4 (CSE) II Semester (New) (Main) Examination, May/June 2012  
OBJECT ORIENTED PROGRAMMING USING JAVA

Time : 3 Hours]

[Max. Marks : 75

- b) Write a program to create and use user defined exception. 5

(This paper contains 2 pages)

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**B.E. 2/4 (CSE) II Semester (Main) Examination, June 2010**  
**OBJECT ORIENTED PROGRAMMING USING JAVA**

Time: 3 Hours]

[Max. Marks : 75]

**Note :** Answer all questions from Part – A. Answer any five questions from Part – B.

**PART – A**

**25 Marks**

1. List control statements with simple example. 3
2. What is a class ? 2
3. Write a simple program for reading a file. 3
4. Explain PrintWriter class with an simple example. 2
5. Explain about string tokenizer. 2
6. Explain about Bitset and Timer. 3
7. List the methods in Inputstream . 3
8. List the methods in OutputStream . 2
9. Explain about string tokenizer. 2
10. Explain the life cycle of an applet. 3

**PART – B**

**50 Marks**

11. Explain the concept of inheritance and give examples on each type of inheritance. 3
12. Write a program that shows three methods that exit in various ways, none without executing their finally clauses. 3

(This paper contains 2 pages)

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P.T.O.

Time : 3 Hours]

[Max. Marks : 75]

**Answer all questions of Part A.**

**Answer any five questions from Part B.**

**Part A – (Marks : 25)**

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1. What can be the various states of a process ? 2
2. What can be the different parameters to define a multilevel feedback queue scheduler? 3
3. Under what circumstances do page faults occur? 2
4. What is a Free – space list? What are the different approaches to implement it. 3
5. What is a Semaphore ? Where can it be used ? 2
6. What is a Resource – Allocation Graph? Where can it be used? 3
7. With regard to Disk scheduling, define seek time, rotational latency. 2
8. How does DMA increase system concurrency? 2
9. What are the aims of the central conflict resolution mechanism provided by LINUX system? 3
10. What are the design principles of the WindowsXP system? 3

**Part B – (Marks : 5 × 10 = 50)**

11. (a) Describe the actions taken by a Kernel to switch context between processes. 5  
(b) Explain the criteria for comparing CPU scheduling algorithms. 5
12. (a) Explain the "Segmentation with paging" scheme of memory management. 5  
(b) What are the advantages and disadvantages of contiguous, linked and indexed allocation schemes of disk space. 5  
(b) What are the advantages and disadvantages of contiguous, linked and indexed allocation schemes of disk space. 5
13. (a) Give an algorithm to solve the readers – writers problem using semaphores. 6  
(b) What are various schemes for recovery from deadlocks ? Explain. 4

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**FACULTY OF ENGINEERING**

**B.E. 2/4 (CSE) II Semester (Suppl.) Examination, January 2012**

**OPERATING SYSTEMS**

Time: 3 Hours]

[Max. Marks: 75]

**Note : Answer all questions from Part A, answer any five questions from Part B.**

**PART – A**

**(25 Marks)**

**(25 marks)**

1. What are the five major activities of an operating system in regard to file management ? 3
2. Enlist the major criteria for comparing CPU scheduling algorithms. 2

3. What is the use of translation look aside buffer in memory management ? 3  
 4. Enlist the different file allocation methods to effectively utilize the disk space. 2  
 5. How is the "condition construct" useful in the Monitor-synchronization scheme ? 3  
 6. What are the necessary conditions for deadlock to occur ? 2  
 7. How is reliability by redundancy obtained in disks ? 2  
 8. What is the specific advantage of using interrupt priority levels ? 3  
 9. What are the basic design principles of LINUX system ? 3  
 10. What is the importance of hardware abstraction layer in WINDOWS-XP ? 2

PART – B (5x10=50 Marks)

11. a) What are the benefits of using virtual machines ? Explain. 5  
 b) What is multilevel queue scheduling and multilevel feedback queue scheduling ? Where is it more useful ? 5  
 12. a) What is a page fault ? What are the steps in handling a page fault ? Explain. 5  
 b) What is the advantage of Acyclic-graph directory structure as compared to the tree directory structure of files ? 5

(This paper contains 2 pages) 1 P.T.O.

PART – A (25 Marks)

1. What are the five major activities of an operating system with regarding file management ? 3  
 2. Why is it important for the scheduler to distinguish I/O bound programs from CPU bound programs ? 2  
 3. What is thrasing ? 2  
 4. In what situations would using memory as a RAM disk be more useful than using it as a disk cache ? 3  
 5. What are the necessary conditions for dead lock situation ? 2  
 6. What is meant by critical section problem ? 3  
 7. What is Boot Block ? Where it is stored ? 2  
 8. What are the advantages and disadvantages of supporting memory mapped I/O to device control registers ? 3  
 9. List the layers of network structure in LINUX. 2  
 10. What is the importance of process manager in Windows XP ? 3

PART – B (50 Marks)

11. a) Explain about process control block. 5  
 b) Explain about importance of a medium term scheduler. 5

(This paper contains 2 pages) 1 P.T.O.

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FACULTY OF ENGINEERING  
B.E. 2/4 (CSE) II Semester (Suppl.) Examination, January 2012  
DATA COMMUNICATIONS

Time: 3 Hours [Max. Marks: 75]

Note : Answer all questions of Part A.  
Answer five questions from Part B.

PART – A (25 Marks)

1. Explain the communication model. 3  
 2. Define B8ZS encoding. 2  
 3. How stop-and-wait algorithm works ? 3  
 4. What is interfacing ? 2  
 5. Define CSMA/CD. 3  
 6. What is a ATM cell ? 2  
 7. Define topology ? How many types of topologies are there ? 3  
 8. What is Ad Hoc networking ? 2  
 9. Compare wired LAN with wireless LAN. 3  
 10. Define FDDI. 2

PART – B (5x10=50 Marks)

11. Compare OSI model with TCP-IP model. 2  
 12. Convert the following digital data into digital signal by using:  
 a) NRZL \_\_\_\_\_

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FACULTY OF ENGINEERING  
B.E. 2/4 (CSE) II Semester (Main) Examination, June 2010  
OPERATING SYSTEMS

Time : 3 Hours [Max. Marks : 75]

Notes : Answer all questions of Part A.  
Answer five questions from Part B.

PART – A (Marks : 25)

1. What is the operating system's role in a computer system ? 2  
 2. What is the specific advantage of multilevel feedback queues in process scheduling ? 3  
 3. What is understood by - 'Belady's Anomaly' ? 3

FACULTY OF ENGINEERING  
B.E. 2/4 (CSE) II Semester (Main) Examination, June 2010  
OPERATING SYSTEMS

Time : 3 Hours

[Max. Marks : 75]

Notes : Answer all questions of Part A.  
Answer five questions from Part B.

PART – A

(Marks : 25)

1. What is the operating system's role in a computer system ? 2
2. What is the specific advantage of multilevel feedback queues in process scheduling ? 3
3. What is understood by - 'Belady's Anomaly' ? 3
4. What are the different schemes for - Free space management on the disk ? 2
5. What are the requirements that a solution to the critical section problem must satisfy ? 3
6. Differentiate between "Request Edge" and "Assignment Edge" in a Resource Allocation Graph. 2
7. What is the importance of different RAID levels. 2
8. Differentiate between blocking and non-blocking I/O. 2
9. What are the aims of The Conflict Resolution Mechanism in LINUX ? 3
10. What are the basic services provided by Windows XP Executive ? 3

PART – B

(Marks : 50)

11. a) How does the addition of a medium-term scheduler affect the process execution time ? Explain. 5
- b) Discuss the various criteria for comparing CPU scheduling algorithms. 5

(This paper contains 2 pages)

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12. a) What is 'thrashing' ? What is the cause ? How can it be prevented ? 5
- b) Explain about 'Mounting' a file system. 5
16. a) Briefly describe the concept of multi-threaded programming and state its benefits of it. 5
- b) Describe the steps in a DMA transfer and explain the advantage. 5
17. Write short notes on any two : (5x2)  
a) Revocation of Access Rights  
b) Virtual File System in Linux  
c) Process Management in Windows XP.

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FACULTY OF ENGINEERING  
B.E. 2/4 (CSE) II Semester (Old) Examination, May/June 2012  
DATA COMMUNICATIONS

Time: 3 Hours

[Max. Marks : 75]

Note: Answer all questions of Part A. Answer any five questions from Part B.

PART – A

25

1. What is a protocol ? 2
2. Define Manchester and differential Manchester encoding. 3
3. What is interfacing ? 3
4. What is a parity check ? 2
5. What is congestion ? 3
6. What is the use of AAL protocol ? 2
7. Compare Bus topology with star topology. 3
8. What is Ad-HOC Networking ? 2
9. Define FDDI. 2
10. What are the advantages of CSMA/CD over CSMA ? 3

PART-B

- 3. What is interfacing ?
- 4. What is a parity check ?
- 5. What is congestion ?
- 6. What is the use of AAL protocol ?
- 7. Compare Bus topology with star topology.
- 8. What is Ad-HOC Networking ?
- 4. What is a parity check ?
- 5. What is congestion ?
- 6. What is the use of AAL protocol ?
- 7. Compare Bus topology with star topology.
- 8. What is Ad-HOC Networking ?
- 9. Define FDDI.
- 10. What are the advantages of CSMA/CD over CSMA ?

PART-B

- 11. What are the transmission impairments ? Explain all of them.
- 12. Write a notes on :
  - a) Guided transmission media.
  - b) Sliding window protocol.

(This paper contains 2 pages)

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P.T.O.

