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J & K BOARD OF TECHNICAL EDUCATION

RND223SCE/IT

Semester: 3RD

Branch: Computer Engineering\IT

Subject: Operating System

Scheme: New

Time : 3 Hrs

Session: ND22

M.M.: 100

Note:- Attempt any five Questions. All Questions carry equal marks.

- Q1. a) What do you understand by operating system? What are the types of operating system. (10)
b) Explain briefly the concept of memory organization in operating system. (10)
- Q2. Explain:
a) Paging b) Virtual Memory (20)
- Q3. a) What do you understand by deadlock? Explain the conditions that are responsible for deadlock. (10)
b) How can deadlock be prevented. (10)
- Q4. What do you understand by a process? Explain various states of a process? (20)
- Q5. With the help of an example, Explain Round Robin CPU scheduling? (20)
- Q6. Explain the various types of file systems? (20)
- Q7. Briefly explain the structure of Linux Operating System? (20)
- Q8. Explain in detail about process Synchronization? (20)
- Q9. Define/Explain:
a) Segmentation w.r.t the functions of operating system
b) Spooling c) Job Scheduler d) Process Scheduler (20)
- Q10. a) What is the difference between the process and a thread. (10)
b) Mention few difference between segmentation and paging. (10)

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Semester: 3RD

Branch: Computer Engineering\IT

Subject: Rational Data Base Management System (RDBMS)

Scheme: New

Time : 3 Hrs

Session: ND22

M.M.: 100

Note:- Attempt any five Questions. All Questions carry equal marks.

Q1. Explain briefly about the advantages and disadvantages of database system? (20)

Q2. Explain the role of :

a) Database Administrators

b) System Analyst

c) Application Programmers

d) End User

in a database management system

(20)

Q3. Explain in detail the concept of 3-level architecture of DBMS? (20)

Q4. What do you understand by Data Independence also explain its types? (20)

(20)

Q5. What do you understand by a Data Model? Explain in detail the various types of Data Models? (20)

(20)

Q6. Explain with the help of a diagram and an example, the ER Modes? (20)

Q7. Explain:

a) Primary Key

b) Foreign Key

c) Referential Integrity

d) Entity Integrity

(20)

Q8. What do you understand by Normalization? What is the need of Normalization? (20)

(20)

Q9. Explain with the help of an example:

a) First Normal Form

b) Second Normal Form (20)

(20)

Q10. Explain:

a) Database Security

b) Locking Method

(20)

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Semester: 3RD

Branch: Computer Engineering\IT

Subject: Digital Electronics

Scheme: New

Time : 3 Hrs

Session: ND22

M.M.: 100

Note:- Attempt any five Questions. All Questions carry equal marks.

- Q1. i) Mention some of the applications of digital signals. (10)
ii) Differentiate between digital and analog signal. (10)
- Q2. What do you understand by 2'S complement? Explain with the help of an example? (20)
- Q3. Draw the truth table of along with circuit diagram:
a) EXOR Gate b) NAND Gate
c) Nor Gate d) Or Gate (20)
- Q4. Explain briefly the basic functions along with the block diagram of MUX? (20)
- Q5. What do you understand by flip flop? Explain JK flip flop in detail? (20)
- Q6. What do you understand by Asynchronous and Synchronous counters? Explain briefly? (20)
- Q7. Explain the following concepts in shift registers:
a) Serial in Parallel out b) Parallel in Parallel out (20)
- Q8. What is a difference between a Latch and a Flip Flop? Explain the concept of a ring counter along with its timing diagram? (20)
- Q9. Solve the following expression using 4 variable K-Map:
 $F(w,x,y,z) = \Sigma(0,2,4,6,8,10) + \Pi(1,3)$ (20)
- Q10. Show that a full adder circuit can be constructed using 2-half adders and an OR gate? (20)

RND223SCE/IT.

Semester: 3RD

Subject: Computer Programming Using C

Scheme: New

Time : 3 Hrs

Session: ND22

M.M.: 100

Q1. What do you understand by debugging? Explain in detail the concept of Algorithm with the help of an example? (20)

Q2. What do you understand by Constants and Variables in C? Explain the concept of data types in C? **(20)**

Q3. Explain with the help of a suitable example:

a) While loop

b) Do- while loop (20)

Q4. Write a program to Illustrate Break and Switch statements? (20)

Q5. What do you understand by a Global and a Local Variable? Explain with the help of a program, the concept of functions in C? (20)

Q6. Explain briefly recursion in C? **(20)**

Q7. What is a structure in C? Explain its need and importance? **(20)**

Q8. Explain the concept of strings in C? Explain the various string handling functions? (20)

Q9. Explain the concept of arrays in C with the help of a program? **(20)**

Q10. What do you understand by:

a) Strings in C

b) Files in C

c) Pointers in C

d) Unions in C (20)

J & K BOARD OF TECHNICAL EDUCATION**Semester: 3RD****Branch: Computer Engineering\IT****Subject: Multimedia and Applications****Scheme: New****Time : 3 Hrs****Session: ND22****M.M.: 100****Note:- Attempt any five Questions. All Questions carry equal marks.****Q1.** Explain:

- a) Multimedia
- b) Hypertext
- c) Hyper graphics
- d) Kiosks

(20)**Q2.** Explain:

- a) Speakers and Printers
- b) Plotters
- c) Multimedia Networks
- d) OCR

(20)**Q3.** What do you understand by multimedia operating systems? **(20)****Q4.** What do you understand by compression? Explain its various types? **(20)****Q5.** What do you understand by file format? Write down various audio and video file formats? **(20)****Q6.** What do you understand by frame rate? Explain few selection tools used in Photoshop? **(20)****Q7.** a) What do you understand by Photoshop Workshop. **(10)****b)** What is the difference between a magic eraser and a simple eraser tool. **(10)****Q8.** What is authoring? Briefly explain? **(20)****Q9.** Explain:

- a) Bitmap
- b) Vector Graphic

(20)**Q10.** a) What is the difference between CD and DVD. **(10)****b)** Explain how virtual reality is useful. **(10)**