

C 82194

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Name.....Ujain M.....

Reg. No.....

**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
APRIL 2020**

Computer Science Engineering

CS/IT 14 602—COMPUTER GRAPHICS AND MULTIMEDIA

(2014 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer any ten questions.

Each question carries 2 marks.

1. What is meant by device independent packages ?
2. List the interactive graphics program used in our day to day activities. X
3. Name the logical devices supported by Simple Raster Graphics Package (SRGP). X
4. Define projectors and center of projection. ✓
5. What are the classifications of locator devices based on their independent characteristics ✓
6. Define control-to-display ratio.
7. List the multimedia portable devices. X
8. What are the two different information units for continuous media ? X
9. Give the frequency range for ultrasound and infrasound signals. X
10. What are the drawbacks of uncompressed graphics ? ✓
11. List the coding methods used in H.261. ✓
12. What are the fundamental components of Digital Video Interactive (DVI) technology ? X

(10 × 2 = 20 marks)

Turn over

Part B*Answer all questions.**Each question carries 5 marks.*

1. List the advantages of interactive graphics.
2. Write few uses of computer graphics in the field of medicine.
3. Draw a block diagram of conceptual model of the 3D viewing process and explain the major steps involved.
4. Draw a one point and two point perspective projection of a cube and explain.
5. Write the properties of multimedia system.
6. Differentiate asynchronous and synchronous transmission mode.
7. Discuss about the major steps in data compression.
8. State the advantages of MPEG for video encoding.

(8 × 5 = 40 marks)**Part C***Answer all questions.**Each question carries 10 marks.*

1. (a) Elaborate on the input and output technology used for computer graphics.
Or
(b) Draw a block diagram of conceptual framework for interactive graphics and explain.
2. (a) Explain single level and hierarchical menu design using suitable examples.
Or
(b) Discuss about the three classifications of locator devices.
3. (a) Elaborate on the components of MIDI synthesizer device.
Or
(b) Explain the animation techniques used for web.
4. (a) Describe the classification of coding/compression techniques used in multimedia.
Or
(b) Draw a block diagram and explain the steps in JPEG compression process.

(4 × 10 = 40 marks)

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**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, APRIL 2020**

Computer Science Engineering
CS/IT 14 603—COMPILER DESIGN
(2014 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer any **eight** questions.
Each question carries 5 marks.

1. State the compiler construction rules.
2. Compare lexeme, token and pattern with example.
3. Mention the disadvantages of simple LR parser. How it can be overcome by Canonical LR Parser.
4. Differentiate parameter passing methods with example.
5. Write rules for finding first and follow sets for a given CGF :
E → TA
A → TA/ε
T → FB
B → *FB/ε
F → (E)/id
6. Compare inherited and synthesized attributes.
7. Elaborate on loop optimization technique.
8. What are the different ways of representing an intermediate code? Give example.
9. Explain the data structure used in implementation of symbol table.
10. Write a LEX program to identify the keywords, and identifiers in a language.

(8 × 5 = 40 marks)

Part B

Answer **all** questions.
Each question carries 15 marks.

11. (a) Explain the compiler construction tools in detail.

Or

- (b) For the following source language statement show the output at each phases of the compiler :

$Y = a*b + a*b.$

Turn over

12. (a) Consider the following grammar :

$$S \rightarrow SS+ / SS^* / a$$

- (i) Construct SLR set of items and their GOTO function.
- (ii) Construct SLR Parsing Table.
- (iii) Show the moves of LR parser for the string aa^*a+

Or

(b) Explain the steps and rules involved for converting a regular expression into DFA with suitable examples.

13. (a) Explain the bottom up approach of parsing with suitable examples.

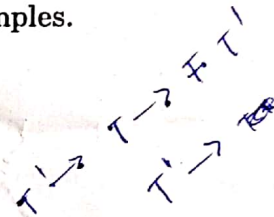
Or

(b) Construct a predictive parsing table for the grammar :

$$E \rightarrow E + T / F$$

$$T \rightarrow T * F / F$$

$$F \rightarrow (E) / id.$$



14. (a) Explain the issues in design of code generator.

Or

(b) Explain the non-local names in runtime storage managements.

(4 × 15 = 60 marks)

Handwritten derivation:

$$T \rightarrow T$$

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**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, APRIL 2020**

Computer Science Engineering
CS/IT 14 604—COMPUTER NETWORKS
(2014 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer any eight questions.

Each question carries 5 marks.

- ~~1.~~ Write short notes on Channel allocation problem.
- ~~2.~~ List out the various features of wireless LAN and explain each.
3. Describe the various fields in frame format of FDDI.
- ~~4.~~ Explain about virtual circuits and their phases. *Not asked*
- ~~5.~~ Explain the various flags used in TCP. *VAPES*
6. Explain the CRC error detection mechanism using Generator polynomial.
- ~~7.~~ Explain the duties of a Transport layer.
- ~~8.~~ Write short notes on resilient packet ring.
- ~~9.~~ Explain the different types of data compressions.
- ~~10.~~ Draw the flow chart of CSMA/CA used in wireless LAN and explain.

(8 × 5 = 40 marks)

Part B

Answer all questions.

Each question carries 15 marks

11. ~~(a)~~ Describe the functionalities of various layers of OSI model with neat diagram.

Or

- (b) Explain in detail about the physical properties and access protocols of 802.3 Ethernet.

Turn over .

IPV4
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12. (a) What is IP addressing? How is it classified? Explain the process of sub netting

Or

(b) Explain the fields in IPv4 header with a neat sketch.

13. (a) Discuss the various performance issues in transport layer protocols.

Or

(b) Explain the state transition diagram for TCP connection establishment, data transfer and connection termination.

14. (a) Explain the World Wide Web in detail.

Or

(b) Write the working of electronic mail, with a neat sketch.

(4 × 15 = 60 marks)

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SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
APRIL 2020

Information Technology

IT 14 605—HUMAN COMPUTER INTERACTION

(2014 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer any ten questions.

Each question carries 2 marks.

1. What are the two types of photoreceptor in the human eye? 100
200
2. Name the types of reasoning.
3. List any three benefits of command line interface.
4. Mention the necessities for evaluating the design.
5. What are the three categories of principles to support usability?
6. Give examples for form-filling interfaces.
7. List the three specific characteristics of participatory design.
8. What are the two types of contexts within conversion?
9. Name the three types of utterances in task-related conversion.
10. What is synchronous interaction? Give examples.
11. State the difference between email systems and co-authoring systems.
12. What are the devices used Virtual Reality applications?

(10 × 2 = 20 marks)

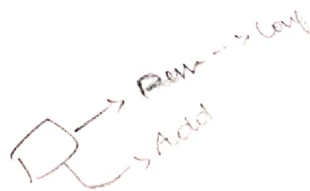
Part B

Answer all questions.

Each question carries 5 marks.

1. Differentiate short term memory and long term memory.
2. List the significance of pointer component of WIMP interface.

Turn over



3. Draw a network diagram to add and remove used from the messaging system and explain.
4. List the potential problems of prototyping. *Time, Mouse, Print, New box*
5. Explain how task analysis is used for requirements capture of software.
6. Draw a state chart for television control panel and explain.
7. Mention the advantages of video conferences.
8. What are the advantages of replicated group architecture over client-server group architecture?

(8 × 5 = 40 marks)

Part C

Answer all questions.

Each question carries 10 marks.

1. a) Discuss the factors that limit the performance of interactive systems. *Time, Class, V/D, Prototyping tools, Computing devices - comp, WIMP, Display control - activity, WWW, Action and Language*
- b) Elaborate on any two paradigms for interaction.
2. a) Draw the block diagram of throw-away prototyping within requirements specification and explain.

Or

- b) Draw a block diagram to explain the roles of a windowing system.
3. a) Using suitable examples, explain Task-action grammar (TAG) linguistic model.

Or

- b) Describe the methods used in participatory design to convey the information to the user by the designer.
4. a) Elaborate on the architectures of groupware.

Or

- b) Discuss about current and future applications of Virtual Reality.

(4 × 10 = 40 marks)

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**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
APRIL 2020**

Information Technology

IT 14 606—OBJECT ORIENTED MODELING AND DESIGN

(2014 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer any eight questions.

Each question carries 5 marks.

1. Derive a set of use cases for library management system.
2. How is the role of a user different from that an actor?
3. Draw the state diagram for library management system.
4. Explain how an activity diagram differs from a traditional flow chart.
5. Distinguish between sequence diagram and interaction diagram.
6. Explain view handler design pattern.
7. Discuss the features of ADL.
8. State the need for OCL.
9. Enumerate the different kinds of events.
10. Draw the state diagram for vending machine.

(8 × 5 = 40 marks)

Part B

Answer all questions.

Each question carries 15 marks.

11. (a) Enumerate and explain the eight steps in object design.

Or

- (b) With examples elaborate the various kinds of relationships between objects.

Turn over

12. (a) Explain interaction diagram with an example. Also write its significance in behavior modeling.

Or

(b) Explain sequence diagrams in UML for ordering food in Hotel.

13. (a) What is significance of state machines ? Explain its advanced features.

Or

(b) Explain the composite and submachine state with suitable examples.

14. (a) Explain the implementation workflow of OCL.

Or

(b) Explain in detail about architecture description language.

(4 × 15 = 60 marks)