Printed Pages – 4   Roll No. : ....

322612(22)

B. E. (Sixth Semester) Examination, April - May 2021

COMPILER DESIGN

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

*Note : Attempt all questions. Part (a) of each question is compulsory and carries 2 marks. Attempt any **two** parts from (b), (c) and (d) which carry 7 marks each.*

Unit-I

1. (a) Explain boot strapping and cross compiler   2

   (b) Draw the transition diagram and corresponding

code that recognizes :　　　　　　　　　7

(i)　Identifiers

(ii)　Relational Operators

(c)　Describe various phases of Compiler.　7

(d)　What are different compiler construction tools?　7

Unit-II

2.　(a)　Write four components of context free grammer.　2

(b)　Show that following grammar is not a SLR (1).　7

$$S \to L = R$$
$$S \to R$$
$$L \to \alpha R$$
$$L \to id$$
$$R \to L$$

(c)　Explain operator precedence parsing with example.　7

(d)　Construct CLR parser for the grammar given below and show the action of parser for valid input string

$$(a, \wedge)$$　　　　　　　　　　　　　　　7

$$S \to a | \wedge | (R)$$
$$T \to S.T \mid S$$
$$R \to T$$

Unit-III

3.　(a)　Define syntax directed translation.　2

(b)　Write short notes on :　　　　　　7

(i)　Three address code

(ii)　Translation

(c)　Differentiate S-attribute and L-attribute with example.　　　　　　　　　7

(d)　Define syntax tree. Write function for constructing syntax trees and draw syntax tree for the expression:　　　　　　　　　　　7

$$a + a * (b - c) + (b - c) * d$$

Unit-IV

4.　(a)　Define activation record.　2

(b) Name various techniques for storage allocation. Differentiate between stack and heap allocation.   7

(c) What is parameter passing? Explain various methods of parameter passing.   7

(d) Write a note on dynamic storage allocation.   7

Unit-V

5. (a) Define code optimization.   2

(b) Describe the implementation of basic block with the help of DAG and by using algebric identities.   7

(c) Explain in brief issues in the design the code generator.   7

(d) Generate the assembly code for the following statement: 7

$$X := a / (b + c) - d * (e + f)$$

Printed Pages – 3   Roll No. : ....

322651(22)

B. E. (Sixth Semester) Examination, April-May 2021

(New Scheme)

(CSE Branch)

COMPUTER NETWORKS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) is compulsory carry 2 marks. Attempt any *two* from part (b), (c) and (d) each of 7 marks.

Unit-I

1. (a) What is Arpanet?   2

    (b) Define network topology. Draw and explain different types of network topologies and their characteristics. 7

(c) Explain layered architecture of OSI Model.　　7

(d) What do you understand by guided and unguided media?　　7

Unit-II

2. (a) What is ARP?　　2

(b) Explain MAC Addresses.　　7

(c) What is HDLC Protocol? Explain the features of HDLC.　　7

(d) Write short notes on :　　7
   (i) ALOHA
   (ii) CSMA

Unit-III

3. (a) Explain ICMP Message format.　　2

(b) Explain distance vector routing with suitable diagram.　　7

(c) Write the difference between IPV_4 and IPV_6.　　7

(d) Write short notes on :　　7
   (i) BGP
   (ii) Mobile IP

Unit-IV

4. (a) What is Multiplexing?　　2

(b) Write the differences between TCP and UDP.　　7

(c) Explain congestion control in Transport layer.　　7

(d) Explain the Integrated and Differentiated Services, Intserv and Diffserv.　　7

Unit-V

5. (a) Explain SMTP protocol.　　2

(b) Exlplain DNS in brief.　　7

(c) What do you mean by MIME? Specify the detail of different MIME header along their details.　　7

(d) Write short notes on :　　7
   (i) Firewalls
   (ii) Gateway

Printed Pages – 4   Roll No. : ....

322652(22)

B. E. (Sixth Semester) Examination, April–May 2021

(New Scheme)

(CSE Engg. Branch)

COMPILER DESIGN

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Part (a) is compulsory for each question. Solve any two from (b), (c) and (d). All questions carry equal marks.

Unit-I

1. (a) Define token, lexeme and pattern.   2

   (b) Draw the transition diagram of relational operator and identifiers and translate into code.   7

(c) Expalin in brief different phases of the compiler. How the following statement is processed in different phases?

$$Amount = Amount + 50 * Cost$$ 7

(d) Construct the minimum state DFA for the regular expression $(a/b)*a(a/b)$. 7

Unit-II

2. (a) Define operator grammar. 2

(b) When the grammar is said to be LL (1) or LR (1)? Eliminate left recursion and find first and follow for the following grammar. 7

$$S \rightarrow (S)/a$$

$$L \rightarrow L, S \mid S$$

(c) Write a YACC program that generates the parser, which checks the syntax of arithmetic expressions. 7

(d) Construct SLR parse table for the given dangling else grammar. 7

$$S \rightarrow iEtSeS \mid iEtS \mid a$$

$$E \rightarrow b$$

Unit-III

3. (a) Differentiate between inherited and synthesized attributes. 2

(b) Write three address code, quadruples, triples and indirect triples for the expression : 7

$$-(a+b)*(c+d)-(a+b+c)$$

(c) Using the given grammar, write the syntax directed definitions to evaluate an expression. Construct the annotated parse tree for the sentence $2 + 3 * 7$.

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

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

$$F \rightarrow (E)/num$$ 7

(d) Write the translation scheme to translate Boolean expressions into three-address code. 7

Unit-IV

4. (a) When call by name is preferred than other parameter passing techniques? 2

(b) Differentiate between stack, static and heap allocation strategies. 7

(c) Explain how memory is allocated to the program at run time. What is the use of activation record? Explain different fields in the activation record. 7

(d) What is the use of symbol table? List the capabilties and the contents of the symbol table. 7

Unit-V

5. (a) Define the term flow graphs. 2

(b) Write in detail the steps of code generation algorithm including the function 'getreg' with an example. 7

(c) Explain in brief issues in the design the code generator. 7

(d) Construct the DAG for the following basic blocks : 7

$$D = B * C$$

$$E = A + B$$

$$B = B * C$$

$$A = E - D$$

322653(22)

B. E. (Sixth Semester) Examination, April-May 2021

(New Scheme)

(CSE Branch)

ENTERPRISE RESOURCE PLANNING

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *All questions are compulsory. Part (a) from each question is compulsory and carry 2 marks. Attempt any **two** parts out of (b), (c) and (d) carry 7 marks each.*

Unit-I

1. (a) Define ERP and compare with MIS.   2

   (b) What are product life cycle management (PLCM)? Explain its briefly through proper block diagram.   7

(c) What is BPR? As a head of an organisation, what problem you may face at the time of re-engineering of business process and how to resolve them?   7

(d) What is Data Warehousing? Explain OLAP with block diagram.   7

Unit-II

2. (a) What do you mean by hidden cost?   2

(b) Explain the role of Project Manager in monitoring the ERP implementation.   7

(c) How ERP implementation life cycle works? Explain with diagram.   7

(d) Explain object oriented architecture of system development.   7

Unit-III

3. (a) Define Quality Management in detail.   2

(b) Explain plant maintenance module with its subsystem & functionality.   7

(c) "Human resources & development plays an important role in ERP system" Explain.   7

(d) Explain Sales & Distribution in detail.   7

Unit-IV

4. (a) Define term Market place.   2

(b) What are the functional areas of ERP?   7

(c) Explain CRM in detail. How it relates with supply chain?   7

(d) Explain function modules of ERP software.   7

Unit-V

5. (a) What is future directions of ERP?   2

(b) Describe the market share & product portfolio of people soft in Indian in Indian & Globle market.   7

(c) Discuss the need of ERP implementation in an organization to changes the organizational structure & culture. Justify with suitable examples.   7

(d) Write short notes on the following : (any **two**)   2×3.5

    (i) E. Commerce

    (ii) EIA

    (iii) SAP AG

322654(22)

B. E. (Sixth Semester) Examination, April-May 2021

(New Scheme)

(Computer Science and Engg. Branch)

SOFTWARE ENGINEERING & PROJECT MANAGEMENT

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

*Note : Attempt all questions. Part (a) from each question is compulsory. Attempt any **two** parts from parts (b), (c) and (d) of each question.*

Unit-I

1. (a) Define Software?   2

(b) Explain waterfall models with diagram in detail? 7

(c) What do you mean by capability maturity model explain in detail. 7

(d) Draw and explain generic view of process software engineering. 7

Unit-II

2. (a) What do you understand by Requirement Elicitation? 2

(b) Write difference between functional and non-function requirements? 7

(c) Explain contact model in detail? 7

(d) Explain why software requirement specification is needed during making of project? 7

Unit-III

3. (a) Write any two difference between coupling and Cohesion? 2

(b) Draw and explain architectural design? 7

(c) What do you mean by object oriented design explain along with its features. 7

(d) Explain size oriented measures by Haustead's? 7

Unit-IV

4. (a) What do you mean by system testing? 2

(b) Write atleast 10 difference between black box testing and white box testing? 7

(c) Explain debugging process alongwith its approaches? 7

(d) What metrics are nead for maintenance of software quality explain? 7

Unit-V

5. (a) Brief about 4p's in software project management? 2

(b) Draw and explain taxonomy of Case tools? 7

(c) Explain different types of software risk management? 7

(d) Write ISO 9000 quality standards? 7

322655(22)

B. E. (Sixth Semester) Examination, April-May 2021

(New Scheme)

(CSE Branch)

COMPUTER GRAPHICS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all units. Part (a) of each unit is compulsory carry 2 marks. Attempt any 2 part from (b), (c) and (d) carry 7 marks.

Unit-I

1. (a) What do you mean by resolution?   2

    (b) What is computer graphics? What are the different uses and applications of computer graphics?   7

(c) Compare the merits and demerits of raster scan and random scan system. 7

(d) Discuss the various types of graphics monitor with proper net sketch. 7

Unit-II

2. (a) What do you mean by clipping and clip window? 2

(b) Give the drawback of DDA algorithm and discuss bresenhams line generation algorithm in detail. 7

(c) Plot a circle using mid-point algorithm whose radius = 10 and center is at (0, 0). 7

(d) Rasterize the elipse by using mid-point ellipse method with parameter $r_x = 8$ and $r_y = 6$. 7

Unit-III

3. (a) Why homogenous coordinates are used for transformation computation? 2

(b) Translate the square $ABCD$ whose coordinate A (0, 0), B (3, 0), C (3, 3), D (0, 3) by 2 units in both direction then scale it by 1·5 unit in x direction and 0·5 unit in γ direction. 7

(c) Compute the visible portion of the line sgement doining P (15, 0) and Q (15, 40) for the window area P_0 (10, 10), P_1 (20, 10), P_2 (20, 30) and P_3 (10, 30) by using cyrus beck line clipping algorithm. 7

(d) Use the Cohen sutherland algorighm to find the visible portion of the line P (40, 80), Q (120, 30) the window is defined as $ABCD$: A (20, 20), B (60, 20), C (60, 40) and D (20, 40). 7

Unit-IV

4. (a) List the types of projection. 2

(b) Write the properties of Bezire curve and B-spline curve. 7

(c) Explain 3 D translation and scalling with matrix representation and homogeneous co-ordinate. 7

(d) Determine the basic functions of non-uniform B-spline given that $d = 3$ and $n = 4$ and the knot vector is specified as (0, 0, 1, 1, 2, 2, 3, 3). 7

Unit-V

5. (a) What is key framing? 2

(b) Discuss the BSP-tree and Octree method with suitable example.　　　　7

(c) Explain merits and demerits of z-buffer hidden surface ellimination algorithm.　　　　7

(d) Discuss design of animation sequence and general computer animation functions.　　　　7

322673(33)

BE 6th Semester
Examination April-May 2021
Branch: CSE (New Scheme)

Multimedia & Virtual Reality

Time Allowed : Three Hours

Maximum Marks : 80   Passing Marks : 28

Note:	(i)	Attempt all questions.	
	(ii)	Part (a) of each question is compulsory. Attempt any **two** from (b), (c) and (d) parts of each question.	
	(iii)	Assume if any data is missing.	

UNIT-I

1.	(a)	Define Data Stream.	[2]
	(b)	Write down main properties of Multimedia.	[7]
	(c)	Write down 7 multimedia applications.	[7]
	(d)	What are the various characteristics of continuous multimedia?	[7]

UNIT-II

2.	(a)	Define MIDI.	[2]
	(b)	Define various steps involved in animation.	[7]
	(c)	Discuss various design and authoring tools and its categories.	[7]
	(d)	Explain Different types of images.	[7]

UNIT-III

3.	(a)	Define JPEG and MPEG.	[2]
	(b)	Explain dynamic Huffman Technique.	[7]
	(c)	Write short notes on Lossy and Lossless Compression Techniques.	[7]
	(d)	Explain Static Huffman Technique with an example.	[7]

UNIT-IV

4.	(a)	Define WORMS.	[2]
	(b)	Write down advantages of CD-DA	[7]
	(c)	Discuss all developments on CD ROM Technologies.	[7]
	(d)	Explain frames, Tracks and Blocks of CD-DA.	[7]

UNIT-V

5.	(a)	Define Virtual Reality.	[2]
		Write Short notes on any Two:	
	(b)	Tele Operation	[7]
	(c)	Augmented Reality System	[7]
	(d)	Time Critical Rendering	[7]

Printed Pages – 4   Roll No. : ....

322674(22)

B. E. (Sixth Semester) Examination, April-May 2021

(New Scheme)

(CSE Engg. Branch)

INTER-NETWORKING with TCP/IP

(Professional Elective-I)

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : All questions are compulsory. Part (a) of each question is compulsory. Attempt any two parts from (b), (c) and (d). The figures in the right-hand margin indicates marks.

Unit-I

1. (a) What do you mean by Bandwidth?   2

(b) What do you mean by internetworking? Discuss the role of major equipments/components needed for establishing internetworking in different network segments/subnets.　　7

(c) Explain circuit-switching and packet switching? What advantages does a circuit switched network have over a packet-switched network?　　7

(d) How the numbers of cross-points reduced in the multistage swtitch having 03 stages, show with example? And explain different types of switches.　　7

Unit-II

2. (a) How does the switch decide which output port to place each packet on?　　2

(b) Why subnetting is needed? How it improves the performance of N/W? Explain by drawing suitable block diagram.　　7

(c) You need to configure a server that is on the subnet 192.168.19.24/29. The router has the first available host address. Which of the following should you assign to the server? Justify your answer.

(i) 192.168.19.0 255.255.255.0

(ii) 192.168.19.33 255.255.255.240

(iii) 192.168.19.26 255.255.255.248

(iv) 192.168.19.31 255.255.255.248　　7

(d) Explain ARP and RARP for dynamic mapping of logial address with physical address.　　7

Unit-III

3. (a) What is Intra domain and Inter domain routing?　　2

(b) What do you mean by source-based tree multi-casting protocol? Write a technical note on MOSPF.　　7

(c) Explain RIP in detail by specifying working of distance vector routing and RIP updation algorithm.　　7

(d) Explain the principle of DVMRP also explain the use of cached information in DVMRP to minimize the multicast trees.　　7

Unit-IV

4. (a) What do you mean by encapsulation and de-capsulation in context with TCP operation.　　2

(b) Explain the various states of TCP state machine in connection establishement phase and connection teardown phase.　　7

(c) Compare Karn's algorithm with Leaky bucket algorithm.　　7

(d) What do you mean by Send Window, Receive Window, Shrinking of window and Silly window Syndrome in TCP?　　7

Unit-V

5. (a) What are BISDN servics?　　2

(b) Explain the ATM architecture by giving the details of interfaces, TP, VCI and VPI.　　7

(c) How your company is connected by ISDN line to ISP? Explain by drawing suitable block diagram with indication of special equipments used.　　7

(d) What do you mean by transmission paths, virtual paths and virtual circuits?　　7

Printed Pages – 3   Roll No. : ....

322675(22)

B. E. (Sixth Semester) Examination, April-May 2021

(New Scheme)

(CSE Engg. Branch)

MANAGEMENT INFORMATION SYSTEMS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Part (a) of each question is compulsory and carry 2 marks. attempt any **two** part of (b), (c) & (d) of each question and carreis 7 marks each.*

Unit-I

1. (a) What is MIS? Explain role of MIS in Industry.

   (b) Explain feature of MIS list out some MIS system that are used in education system?

(c) Differenciate between report writing software Vs. mathematical software in MIS.

(d) How we can use MIS as problem solving?

Unit-II

2. (a) Examine computer literacy.

(b) What is CBIS? Explain the structure of CBIS.

(c) Explain the business level & firm level strategy with suitable example.

(d) Who are the users in MIS? Explain users functionality in detail.

Unit-III

3. (a) What is Executive Information System?

(b) Explain Decision Support System Sales & Marketing Information System.

(c) Explain any one case study in Finance & Account Information System.

(d) Explain in detail of Human-Resource Information System.

Unit-IV

4. (a) What are the Information Resources?

(b) Explain Strategic Planning for Information Resources.

(c) Explain Advanced uses & implementations of Information Technology in Management Information Systems.

(d) What is End User Computing as a strategic issues?

Unit-V

5. (a) What is E-Commerce?

(b) Explain of E-commerce methodology & E-commerce technology.

(c) Explain Computer Crime, ethics & social issues.

(d) What are the problems in implementing Global Information Systems.

Printed Pages – 3   Roll No. : ....

322676(22)

B. E. (Sixth Semester) Examination, April-May 2021

(New Scheme)

ADVANCED OPERATION SYSTEM

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

*Note : Attempt all questions. Part (a) of each question is compulsory and caries 2 marks. Attempt any **two** parts from (b), (c) and (d) which carries 7 marks each.*

Unit-I

1. (a) Define distributed O. S.

(b) Explain the distributed file service architecture in a distributed file system with an exmple.

(c) Explain Andrew file system.

(d) X.500 directory service is more than a global directory. Comment.

Unit-II

2. (a) Define cryptography.

(b) Explain RSA algorithm with a suitable example.

(c) Explain digital signature in detail.

(d) Explain different issues in distributed algorithm design principles.

Unit-III

3. (a) Define a file.

(b) Explain briefly I/O process management in UNIX.

(c) What is SHELL? What are the responsbilities of Shell? Give the general format for unix command system.

(d) Describe shell programming environment.

Unit-IV

4. (a) Define comamnt interpreter.

(b) Draw and explain the architecture of WINDOWS OS.

(c) Explain windows programming environment.

(d) Explain brielfy memory management of window OS.

Unit-V

5. (a) Define Memory.

(b) Compare memory management of Windows with Linux.

(c) Explain system calls of Windows OS.

(d) Explain system calls of Linux OS.

Printed Pages – 3   Roll No. : ....

322678(22)

B. E. (Sixth Semester) Examination, April-May 2021

(New Scheme)

(CSE Engg. Branch)

OBJECT ORIENTED MODELING & DESIGN

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Question (a) is compulsory of each unit.*
Attempt any two trom (b), (c) & (d). Each
question carry equal marks..

Unit-I

1. (a) What is object orientation?   2

    (b) What is an Aggregation? Write their differnt types
        with example.   7

322678(22)   **PTO**

(c) Explain Links and Associations with suitable example. 7

(d) Write five difference between Aggregation and Generalization in tabular form. 7

Unit-II

2. (a) Event separates two states.

(True or False) 2

(b) Write scenario for an ATM system. 7

(c) Draw an Event Trade Diagram for ATM system. 7

(d) Draw use case diagram for on-line shpoing which have 5 use-cases and three Actors. 7

Unit-III

3. (a) What is System Conception? 2

(b) Explain Domain Analysis. 7

(c) Explain Domain State Model. 7

(d) Write about the Application Interaction Model. 7

Unit-IV

4. (a) What do you mean by the "bank of the envelope"? 2

(b) Explain how a system designer estimate the system performance and make a reversable plan for an Application. 7

(c) Explain Design, Optimization and Rectification of behaviour with suitable example. 7

(d) How a class designer bridges the gap from high-level requirements to low-level services for an application. 7

Unit-V

5. (a) What is fine-turning classes? 2

(b) Explain Integration and Validation Testing. 7

(c) Explain 0 0 Databases. 7

(d) Write short notes on the following : 7

   (i) Reusability

   (ii) Externibility

   (iii) Robustness