

Code : 1G451

III B.Tech. I Semester Regular Examinations Nov/Dec 2014

Automata and Compiler Design
(Information Technology)

Max. Marks: 70**Time: 03 Hours**Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) Define NFA and design a NFA that recognizes the language $(a/b)^*abb$. 7M
 b) Define DFA and design a DFA that accepts the language $(a/b)^*abb$. 7M
2. Draw a neat diagram of the Phases of a compiler and explain the functionality of each Phase. 14M
3. a) Construct an YACC specification for a simple desk calculator using the grammar

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

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

$$F \rightarrow (E) / \text{digit.}$$
 7M
 b) What is Handle? Discuss about handle pruning with an example. 7M
4. a) Construct a syntax tree for the expression: $a * 5 + x$. 7M
 b) Write the quadruples representation for the given three – address statement

$$a := b * - c + b * - c.$$
 7M
5. a) How to do type checking for an expression, discuss with an example, 7M
 b) Differentiate dynamic and static type checking. 7M
6. Discuss the following storage – Allocation strategies.
 (a) Stack Allocation 7M
 (b) Heap Allocation strategies. 7M
7. Write a details notes on
 (a) Flow Graph 7M
 (b) Peephole optimization 7M
8. Write a detail notes on DAG representation of basic blocks. 14M

Code : 1G153

III B.Tech. I Semester Regular Examinations Nov/Dec 2014

Computer Networks

(Common to CSE & IT)

Max. Marks: 70

Time: 03 Hours

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) Draw OSI reference model and Explain the functionalities of layers of OSI reference Model. 10M
b) What are the advantages and disadvantages of Wireless LANs? 4M
2. a) What is PSTN? What is Local LOOP? 7M
b) Discuss the advantages of packet switching over circuit switching 7M
3. a) Explain error detection and correction mechanisms in Data Link Layer. 4M
b) Explain sliding window protocols. 10M
4. a) What is Ethernet? Illustrate Channel allocation using Multiple Access Protocols 7M
b) Discuss Collision Free Protocols 7M
5. a) Illustrate any two Network Layer Routing Protocols 10M
b) Explain Multicast Routing and Broadcast Routing. 4M
6. a) What is Internet? Explain significance ip address in internet working? 7M
b) Briefly explain about mobile IP and IPV4. 7M
7. a) What is Data Unit in Transport Layer? What are the services provided by Transport Layer? 7M
b) What are the advantages of TCP over UDP considering IP in Network Layer? 7M
8. a) What is Domain Name System? What is WWW? 10M
b) Explain any two application layer protocols. 4M

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III B.Tech. I Semester Regular Examinations Nov/Dec 2014

Information Storage Management
(Information Technology)

Time: 3 hours

Max Marks: 70

*Answer any FIVE Questions from the following
All questions carry equal marks (14 Marks each)*

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|-------|---|-----|
| 1. | Discuss any two E-Commerce applications in detail | 14M |
| 2. | Discuss about | |
| | a. Any one Mercantile Model from Merchant's Perspective | 7M |
| | b. Any one Mercantile Model from Consumer's Perspective | 7M |
| 3. | Explain the Digital Token-based electronic payment systems in brief | 14M |
| 4. a) | Define EDI. Explain about EDI Layered Architecture. | 7M |
| b) | Define VAN. Explain the functions of third-party VAN. | 7M |
| 5. | Write Short Notes on | |
| | a. Supply Chain Management | 7M |
| | b. Customization and Internal Commerce | 7M |
| 6. a) | Discuss about the Facilitators of Wireless Environment for E-Commerce | 7M |
| b) | Explain about Wireless Industry Standards for E-Commerce | 7M |
| 7. a) | Discuss about Corporate Data Warehouses in brief | 7M |
| b) | Write a short notes on Market Research in E-Commerce | 7M |
| 8. a) | Discuss about Electronic Yellow Pages in detail | 7M |
| b) | Write a short notes on Information Filtering | 7M |

Code : 1G355

III B.Tech. I Semester Regular Examinations Nov/Dec 2014

Microprocessors and Interfacing
(Common to CSE & IT)

Max. Marks: 70

Time: 03 Hours

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) Explain the register organization of 8086 in detail. 7M
b) What is mean by pipelined architecture? How it is implemented in 8086. 7M
2. a) Write an ALP to display the message "The study of microprocessors is interesting" on the CRT screen of a microcomputer. 8M
b) Explain all ASCII instructions of 8086 in detail. 6M
3. a) Interface D/A converter to the 8086 microprocessor. Write an ALP to generate the following signals.
(i) Sinusoidal wave (ii) Triangular wave 8M
b) Explain the operating modes of 8255 in detail. 6M
4. a) Explain different types of Address decoders in detail. 6M
b) Draw and discuss the architecture of 8257. 8M
5. a) Draw and discuss the structure of interrupt vector table of 8086. 6M
b) Draw and discuss the internal architecture of 8253. 8M
6. a) Write a short note on USB. 4M
b) Design the hardware interface circuit for interfacing 8251 with 8086. Set the 8251 in asynchronous mode as a transmitter with even parity enabled, 2 stop bits, 8-bit character length, frequency 160 KHz and baud rate 10K. Write an ALP to transmit 100 bytes of data string starting at location 2000:5000, also draw the interfacing diagram. 10M
7. a) Draw and discuss the internal architecture of 80286. 10M
b) Explain the features of Pentium processor. 4M
8. a) Write an ALP in 8051 to initialize the accumulator with value 55H and complement the accumulator 800 times. 6M
b) Explain memory organization of 8051 in detail. 8M

Code : 1G453

**ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: RAJAMPET
(AUTONOMOUS)**

III B.Tech. I Semester Regular Examinations Nov/Dec 2014

Software Engineering
(Information Technology)

Time: 3 hours

Max Marks: 70

*Answer any FIVE Questions from the following
All questions carry equal marks (14 Marks each)*

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|-------|---|----|
| 1. a) | Define software and software engineering. Discuss software characteristics. | 8M |
| b) | Explain the Management myths and reality. | 6M |
| 2. a) | Compare Spiral model with concurrent development model | 7M |
| b) | Discuss the format of software requirements document. | 7M |
| 3. a) | Describe the steps involved in requirement elicitation and analysis. | 9M |
| b) | What is meant by context model? | 5M |
| 4. a) | Give the taxonomy of architectural styles. | 6M |
| b) | Explain in brief various design concepts. | 8M |
| 5. a) | What is coupling? Discuss various categories of coupling. | 7M |
| b) | Explain interface design evaluation cycle. | 7M |
| 6. a) | Differentiate between black box and white box testing. Discuss examples. | 8M |
| b) | Explain the metrics for source code briefly. | 6M |
| 7. a) | How to develop a risk table? Why is it required? Give an example. | 7M |
| b) | Discuss the indirect measures for the software product. | 7M |
| 8. a) | Explain the activities of software quality assurance team. | 8M |
| b) | Write a note on software reliability. | 6M |

Unix Programming
(Information Technology)

Max. Marks: 70

Time: 03 Hours

Answer any five questions

All Questions carry equal marks (14 Marks each)

1. a) i) Write about the structure of UNIX operating system.
ii) What are the features of UNIX operating system? (any 4) 10M
- b) What are the effect of the following common commands :
i) date -u 4M
ii) who -uH
2. a) i) Discuss about the directories in UNIX?
ii) What are hard links and symbolic links? 8M
- b) i) List out all the attributes of 'ls -l' command?
ii) Write the command to display the hidden files 6M
3. a) What is the effect of the following command
i) \$ echo \< > \ " \' \ \ \$
ii) \$ alias dir = 'ls -l'
\$ dir
iii) Who | tee whoOct2 6M
- b) i) Write about Redirections in UNIX?
ii) What is the use of pipe and tee command? Explain with an example. 8M
4. a) What are the types of modes in vi Editor? How does mode switch happen in vi Editor? 6M
- b) i) Write the Vi Editor commands for Deleting a character
ii) Write the Vi Editor commands for Deleting a line
iii) What is the effect of \$ find ~ -type f -exec grep -l "Raven" { }
iv) What is the effect of \$ egrep -n '^A-G]' testfile 8M
5. a) i) What is sed script? Give the change command of sed.
ii) Explain substr, index and length functions of awk with examples 8M
- b) Explain the built in variables with example
i) FS 6M
ii) NF
iii) FILENAME
6. a) Write about variables in korn shell 8M
- b) What is numeric validation and file type validation 6M
7. a) i) How do you handle on-off variables in interactive C Shell?
ii) What would be printed for the following script segment? Explain why?
foreach i (1 2 3 4 5 6 7 8 9)
@ i *= 2
@ i -= 1
if (\$i<=9) then
echo \$i
endif 8M
end
- b) Explain start up and shutdown scripts in interactive C shell? 6M
8. a) What are the different types of files? Discuss 6M
- b) Write the operations which are unique to directories. 8M
