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<b>R-14</b>
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**Code: 4G151**

III B.Tech. I Semester Supplementary Examinations November 2018

**Computer Networks**  
( Common to CSE & IT )

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit ( 5 x 14 = 70 Marks )

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<b>UNIT-I</b>
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1. a) List two ways in which the OSI references model and the TCP/IP reference model are the same. Also list two ways in which they differ. Discuss the layered architecture of TCP/IP reference model. 10M
- b) If a binary signal is sent over a 3-kHz channel whose signal to noise ratio is 20 dB, what is the maximum achievable data rate? 4M

**OR**

2. a) What are two reasons for using layered protocols? What is one possible disadvantages of using layered protocols? 7M
- b) Make a comparison between the fiber optics and copper wire. 7M

<b>UNIT-II</b>
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3. a) An 8 bit byte with binary value 10101111 is to be encoded using an even parity hamming code. What is the binary value after encoding? 5M
- b) Explain about pure ALOHA and slotted ALOHA 9M

**OR**

4. a) With the help of neat diagram, explain the architecture of classical Ethernet. 7M
- b) In the binary countdown protocol, explain how a lower numbered station may be starved from sending a packet. 7M

<b>UNIT-III</b>
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5. a) Describe the major differences between the ECN method and the RED method of congestive avoidance. 5M
- b) Explain in detail about the Link State Routing Algorithm with an example. 9M

**OR**

6. a) What is a Routing protocol? List and explain the principles of routing 9M
- b) Convert the IP address whose hexadecimal representation is C22F1582 to dotted decimal notation. 5M

<b>UNIT-IV</b>
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7. Explain the following transport layer protocols. 14M
  - a) Simple protocol
  - b) Stop and wait protocol
  - c) Go-Back-N protocol
  - d) Selective Repeat Protocol

**OR**

8. a) Draw TCP header format. Write the significance of the components in TCP header format 9M
- b) Discuss the advantages and disadvantages of Delay Tolerant Networks. 5M

<b>UNIT-V</b>
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9. a) Can a computer have two DNS names that fall in different top level domains? If so give a plausible example. If not explain why not. 9M
- b) Compare and contrast JPEG and MPEG standard. 5M

**OR**

10. Write a short notes on the following: 14M
  - a) Web Proxies
  - b) Server Farms
  - c) SIP

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Hall Ticket Number :

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**R-14**

**Code: 4G357**

III B.Tech. I Semester Supplementary Examinations November 2018

**Microprocessors and Interfacing**

( Common to CSE & IT )

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit ( 5 x 14 = 70 Marks )

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**UNIT-I**

1. a) Discuss the features of 8086 7M  
b) Explain how the pipelining is implemented in 8086 7M

**OR**

2. a) List different instruction groups and mention two examples in each 7M  
b) Develop 8086 alp to find the smallest word in a array of 100 words 7M

**UNIT-II**

3. a) Differentiate SRAM and DRAM 4M  
b) Interface two 8Kb ROM and four 16Kb RAM memories to 8086 10M

**OR**

4. a) Justify latches and buffers used for interfacing 4M  
b) Explain the architecture with different modes of 8255 10M

**UNIT-III**

5. a) How the DMA is faster than others. 4M  
b) Sketch and explain how to Interface 8257 with 8086 10M

**OR**

6. a) Arrange the sequence of actions in 8086 when interrupt occurs. 4M  
b) Develop the structure of cascading interrupt connection using 8259 10M

**UNIT-IV**

7. a) Give the importance of communication interface 4M  
b) Explain the architecture of 8251 with neat sketch 10M

**OR**

8. a) Give the structure how to connect the devices using RS232 4M  
b) Summarize the each pin function of RS232 10M

**UNIT-V**

9. a) Differentiate segmentation and paging 7M  
b) Explain the salient features of 80386 7M

**OR**

10. a) Discuss Salient features of Pentium processors 7M  
b) Explain the architectural features of Pentium pro processors 7M

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**Code: 4G133**

III B.Tech. I Semester Supplementary Examinations November 2018

**Principles of Programming Languages****(Substitute Subject)**

( Common to CSE &amp; IT )

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit ( 5 x 14 = 70 Marks )

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**UNIT-I**

1. a) Give a brief note on The general problem of describing Syntax and Semantics?  
b) Enumerate the different kinds of Programming Languages and explain?

**OR**

2. a) Explain the characteristics of a good Programming Language and how are they evaluated?  
b) What are the disadvantages of having too many features in a Programming Language?

**UNIT-II**

3. a) What is the logic behind in Binding concept? Compare Static binding with Dynamic binding?  
b) What are the two common problems with Pointers?

**OR**

4. a) Enumerate the Primary design issues for Arithmetic expressions?  
b) What are the advantages of User-defined Enumeration types?

**UNIT-III**

5. a) How the various implementation models of Parameter Passing are implemented?  
b) What are the Common solutions to the Nesting problem for Two-way Selectors

**OR**

6. a) Write short notes on i) overloaded subprograms ii) generic subprograms  
b) Give the advantages and disadvantages of dynamic local variables?

**UNIT-IV**

7. a) Define Abstract data type? What are the advantages of Abstract data types?  
b) What kind of tasks does not require any kind of Synchronization? Describe the Five different states in which a task can be?

**OR**

8. a) What are the Language design requirements for a language that supports Abstract Data types?  
b) Which is more general, Concurrency through Monitors or Concurrency through Message passing?

**UNIT-V**

9. a) Explain different types of propositions present in Logic programming?  
b) Define rule and goal statements of Prolog?

**OR**

10. a) Write and explain about various features and functions used in Haskell  
b) What is the basic concept of Declarative Semantics? Explain the difference between Procedural and Non procedural Languages?

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Code: 4G133

II B.Tech. I Semester Supplementary Examinations November 2018

## Principles of Programming Languages (Substitute Subject)

( Computer Science and Engineering )

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit ( 5 x 14 = 70 Marks )

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### UNIT-I

1. a) What are the reasons for studying concepts of Programming Languages? 9M
- b) Describe the basic concept of Denotational Semantics? 5M

OR

2. a) Write down BNF rules for 'if-then-else' statement and Convert the obtained ambiguous grammar into unambiguous grammar for the same. 8M
- b) What are three general methods of implementing a Programming Language? 6M

### UNIT-II

3. a) Define Strong typing. Write and explain about Type compatibility 7M
- b) What are the design issues for Pointer type? 7M

OR

4. a) Define Heterogeneous Array? Discuss the design issues of Arrays? 7M
- b) Discuss Structural and Name equivalence for types? Give an example of a language used for each approach 7M

### UNIT-III

5. a) Define the following terms: **formal parameters, actual parameters, positional parameters and keyword parameters?** 8M
- b) Write a brief note on 'Iterative statements'? 6M

OR

6. a) List what advantages does Java's break statement have over C's and C++'s break statement? 7M
- b) Explain about Unconditional Statements and Guarded commands with suitable examples? 7M

### UNIT-IV

7. a) List out the features of Abstract Data types? 7M
- b) Differentiate Java packages and C++ namespaces? 7M

OR

8. a) Illustrate C++ parameterized Abstract Data Types with an example. 7M
- b) How Concurrency is achieved using Semaphores? 7M

### UNIT-V

9. a) Write and explain about Fundamentals and Applications of Functional languages? 6M
- b) State and explain about the Basic elements of Prolog with suitable examples? 8M

OR

10. a) Explain why Prolog systems must do Backtracking? Explain how Backtracking works in Prolog? 8M
- b) Compare the Functional languages with Imperative languages? 6M

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