

Use separate answer
script for each module

B.Sc. (Honours) Examination, 2019
Semester-IV
Computer Science (Allied)
Course : BCSA-41 (Old)

Time : 3 Hours

Full Marks : 40

Questions are of value as indicated in the margin.

Module –A (New Working)

Answer **any four** questions.

1. a) What are the different address classes in IP?
b) What is the class of the IP address 144.61.21.165?
c) Give an example of a line-coding scheme.
d) Give an example of a data modulation scheme.
2. a) Briefly illustrate QPSK modulation scheme.
b) What are the baud rates for QPSK and 8PSK if the bit rate = 384 kbps? 3+2=5
3. Illustrate the working principle of Go-Back-N ARQ with an example. 5
4. a) Human speech can contain frequencies from 20 Hz to 4 KHz. What is the Nyquist rate for sampling human speech?
b) What is meant by quantization of samples?
c) If 256 quantization levels are used to quantize the speech samples, what is the data rate to transmit PCM coded human speech? 1+2+2=5
5. a) What are the differences between TCP and UDP?
b) What is the use of port id? 4+1=5
6. What are the uses of
a) SMTP b) HTTP c) DNS d) PING e) DHCP 1×5=5

Module – B (Programming in Java)

Answer Question No.1 and **any two** from the rest.

1. Answer **any two** questions.
a) What is the difference between JRE and JDK?
b) What gives Java its 'write once and run anywhere' nature?
c) What is JVM?
d) What is type casting in JAVA
e) Discuss the difference between method overloading and method overriding.
2. a) What is a constructor? With example, show use of default constructor and parameterized constructor?
b) Explain why we can't inherit the constructor of base class into subclasses? (1+4)+2+1=8
P.T.O.

(2)

3. A palindromic number reads the same both ways. The largest palindrome made from the product of two 2-digit numbers is $9009 = 91 \times 99$. Find the largest palindrome made from the product of two 3-digit numbers. 8
4. a) What is the index of the first and the last component of an array of hundred elements?
b) Write notes on 'static variable' and 'static method'.
c) State the differences between abstract class and interface. $2+(2+2)+2=8$
5. a) What are the different types of inheritance? Show how multiple inheritance is supported in Java with a suitable example.
b) Which package is imported by default in Java?
c) What's the difference between comparison done by equals() method and '==' operator? $(3+2)+1+2=8$
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