

**BACHELOR OF COMPUTER APPLICATIONS  
(BCA) (Revised)**

**Term-End Examination**

04765

**June, 2018**

**BCS-041 : FUNDAMENTALS OF COMPUTER  
NETWORKS**

*Time : 3 hours*

*Maximum Marks : 100*

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*Note : Question no. 1 is compulsory. Answer any three questions from the rest. Use of calculator is allowed.*

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1. (a) Given data frame is 1101011011 and generator polynomial  $G(x) = x^4 + x + 1$ . Derive the transmitted frame using CRC method. Write all the steps involved in the process. 10
- (b) Explain each step of the process for generating 128 bit MD5 digest from any given number and key. 10
- (c) Differentiate between classful addressing and classless addressing. Explain how classless addressing results in decrease in the table size. 10
- (d) Explain how routing and switching is done in ATM Networks. 10

2. (a) Write the importance of Time Division Multiplexing (TDM). What are the applications of TDM ? Also write its disadvantages (if any). 10
- (b) Discuss the differences between IPv4 and IPv6. Also highlight the need of IPv6. 10
3. (a) Draw and explain connection establishment and termination in TCP using the three-way handshaking method. 10
- (b) With the help of an example, explain Go-back-N sliding window protocol. 10
4. (a) Discuss the functions of DHCP and SNMP. 10
- (b) Differentiate between circuit switching and virtual circuit. Also explain the effect of router failure in virtual circuits. 10
5. Write short notes on the following : 4×5=20
- (a) RSA
- (b) Fiber Optic Cables
- (c) OSI Model
- (d) CSMA/CD
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