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Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester B.Sc Degree Examination, November 2016

BCS3B04 - Fundamentals of Digital Electronics

(2015 Admission onwards)

ax. Time: 3 hours

Max. Marks: 80

**PART - A**

Answer *all* questions. Each question carries *one* mark

What is the minimum number of bits required to represent the hexadecimal number 3A in binary?

Which are the two representations of zero in 1's complement form?

Which gates are known as universal gates?

Find the negation of (a.b')

Fan in of a NOT gate is .....

How many flip flops are required to construct a mod-128 synchronous counter?

How many 2:1 multiplexers are required to construct a 16:1 multiplexer?

If the two inputs of SR flip flop are complement to each other then the flip flop will act like ..... flip flop

In toggle mode, JK flip flop have J = ..... and K = .....

10101010 is a 1's complement representation of the decimal number.....

10 x 1 = 10

**PART - B**

Answer *all* questions. Each question carries *two* marks

Define Excess-3 code with an example.

Give the truth table for the expression  $\sim(a+b)$

What do you mean by toggle state?

Define flip flop. What is the use of it?

What do you mean by shift register?

5 x 2 = 10

**PART - C**

Answer *any five* questions. Each question carries *four* marks

16. Find X and Y in the following equations.

(a)  $(ABC)_{16} = (X)_8$

(b)  $(25)_8 = (Y)_{16}$

17. Represent decimal number 127 in

(a)BCD

(b)Excess-3 code

18. Simplify the following expression by using the laws of logic.

$(A+B)' \cdot (A' \cdot B') \cdot (A+B) ?$

19. State and prove De morgan's Law.

20. What do you mean by combinational circuits? Explain the working of half adder circuit.

21. Explain the concept of a Multiplexer in detail.

22. Explain about Johnson Counter with a neat diagram.

23. What are the differences between SR flip flop and JK flip flop?

5 x 4 = 20

**PART - D**

Answer *any five* questions. Each question carries *eight* marks

24. Explain in detail about error detection and error correction codes?

25. Simplify the following SOP expression using K-map and draw the logic circuit of the simplified form.

$f(A, B, C, D) = \sum (0, 1, 2, 3, 4, 8, 9, 12)$

26. Design all the three basic gates by using NOR gate.

27. Construct a shift register by using SR flip flops.

28. Explain in detail about the rules and laws of boolean algebra.

29. Simplify the following expressions by using K-map

(a)  $f(A, B, C) = \sum (0, 1, 2, 6)$

(b)  $f(A, B, C) = \sum (0, 2, 4, 6)$

30. Construct a 3-bit asynchronous counter.

31. With the help of a neat diagram explain the working of successive approximation A/D converter.

5 x 8 = 40

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester B.Sc Degree Examination, November 2016

A12 - General Informatics

(2015 Admission onwards)

Max. Time: 3 hours

Max. Marks: 80

### SECTION – A

**Question 1 to 10. Answer ALL questions. Each carries ONE mark**

1. Which is the device that converts analog signals to digital and digital signals to analog?
2. What is VPN?
3. What is an OS?
4. What is the use of telnet?
5. What is INFLIBNET?
6. What is cyber crime?
7. Impress is a \_\_\_\_\_ program.
8. \_\_\_\_\_ started free software foundation.
9. Define denial of service.
10. What is email bombing?

(10 x 1=10)

### SECTION – B

**Question 11 to 15. Answer ALL questions. Each carries TWO marks**

11. Define e-governance.
12. Comment on wireless applications.
13. What is the use of a smart card?
14. What is firewall?
15. What is cyber crime?

(5 x 2=10)

### SECTION – C

**Question 16 to 23. Answer any FIVE questions. Each carries FOUR marks**

16. Describe academic search techniques.
17. What is cloud computing?
18. Explain software repository.
19. Explain the symptoms of cyber addiction.
20. What are the major provisions in the IT act 2000.
21. List some cyber attacks.
22. Explain system software and application software with suitable examples.
23. What is internet? What are its major advantages?

(5 x 4=20)

### SECTION – D

**Question 24 to 31. Answer any FIVE questions. Each carries EIGHT marks**

24. Discuss the impact of IT in teaching and learning.
25. Discuss various Linux office and database software.
26. What are the various ways for managing e-waste?
27. Discuss various threats in IT.
28. Discuss various network topologies.
29. Explain various security issues in IT.
30. What is a personal computer? Explain various parts and their uses.
31. Explain the influence of IT in business and commerce.

(5 x 8=40)

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester B.Sc Degree Examination, November 2016

BCS3B05 - Visual Programming Using VB NET

(2015 Admission onwards)

Max. Time: 3 hours

Max. Marks: 80

### SECTION A

Question 1 to 10. Answer *all* questions. Each carries *one* mark

1. What is the difference between Namespace and Assembly?
2. Distinguish between Add and Insert methods of a ListBox object in Visual Basic.
3. What do you mean by Managed code?
4. What is the function of JIT compiler?
5. How can you create dynamic forms in VB.NET?
6. What do you mean by IntelliSense?
7. List out the languages supported by .NET.
8. What is the difference between VB and VB.NET?
9. How can you add a constructor to a Visual Basic class?
10. What are breakpoints in Visual Basic?

(10x1=10)

### SECTION B

Question 11 to 15. Answer *all* questions. Each carries *two* marks

11. Explain date variables in VB.
12. What do you mean by immediate window in VB.NET?
13. Explain type casting in VB.NET
14. What do you mean by scope and lifetime of a variable?
15. How do you create password control in VB.NET?

(5x2=10)

### SECTION C

Question 16 to 23. Answer any *FIVE* questions. Each carries *four* marks

16. Give a note on ADO.NET objects used for data access in Visual Basic.
17. Explain exception handling in VB.NET.
18. Explain tooltip and timer components and their properties and methods.
19. Differentiate between functions and subroutines. Explain argument passing mechanisms with suitable examples.
20. Explain simple and complex bindings of controls to dataset in the context of VB.NET

21. What are events? Explain the concept of event driven programming in VB.NET
22. Write the VB code to generate prime numbers in a range.
23. Explain control statements in VB.NET

(5x4=20)

### SECTION D

Question 24 to 31. Answer any *FIVE* questions. Each carries *eight* marks

24. Explain the .NET framework architecture.
25. Write a VB code to sort an array of strings without using sort() method.
26. Design a user interface and write VB code to change the case of a given string.
27. Explain the various operators in Visual Basic.
28. Write VB code to accept any character from keyboard and display whether it is vowel or not.
29. Develop a VB.NET application to perform timer based quiz of five questions.
30. Explain the tools provided by Visual Basic for debugging.
31. List and explain the various string manipulation functions in VB.

(5x8=40)