

B.Sc. IT (Part III) Examination, 2014

DIGITAL ELECTRONICS & MICROPROCESSOR

Part A (Marks: 10)

1. Realize the OR gate using NOR gate.
2. Convert the following hexadecimal number into decimal number.
 $(\text{COFFEE})_{16} = ()_{10}$
3. Minimize following boolean function.
 $F = x'y'z' + x'y'z + x'yz + x'y + xz$
4. Define Half Adder.
5. What will be the output of SR flip flop when both the inputs are 1(one)?
6. Draw excitation table of D flip-flop.
7. What do you understand by opcode?
8. How many selection line are required for the construction of 16x1 multiplexer?
9. Differentiate between Half Adder & Full Adder.
10. Write down any two 3-byte instructions.

Part B (Marks: 10)

1. Simplify the following functions using k-map:
 $F = A'B'D' + ACD + A'BC$
 $D = A'BC'D + A'CD + AB'D'$
2. Write a short note on De-multiplexer.
3. Explain master-slave flip-flop.
4. Differentiate between combinational circuit and sequential circuit.
5. Write program to multiply two B-bit numbers.

Part C (Marks: 30)

1. Explain logic familiar and their characteristics.

OR

- (a) Explain x-map in SOP and POS forms.
- (b) Simplify the following function using k-map

$$F = BDE + B'C'D + CDE + A'B'CE + A'B'C + B'C'D'E'$$

2. Explain counter and its types

OR

Explain construction, working and timing diagram of 7490.

3. (a) Explain D/A and A/D converter interfacing to microprocessor.
- (b) Explain seven segment LED display.

OR

- (a) Explain bus organisation of 8085.
- (b) Draw pin diagram 8085.

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OPERATING SYSTEM

Part A (Marks: 10)

1. What is Operating System?
2. What is Kernel?
3. What is the use of “man” command in Unix?
4. What will be the output of following command:

```
cat file1 file2 > file1
```
5. What is Spooling?
6. Define System Call.
7. Explain the Semaphores.
8. What is the use of shell in a Operating System?
9. Write the stages of process life cycle.
10. Explain the virtualization in Operating System.

Part B (Marks: 10)

1. Write technological difference between Unix and Windows.
2. Explain the Mutual Exclusion property of process.
3. Explain the following commands of Unix:
 - (i) date
 - (ii) tar
4. Explain the file system of Unix.
5. Write the steps to create and save a file using vi editor.

Part C (Marks: 30)

1. Explain the various types of Operating Systems.

OR

Describe the interprocess communication and explain the critical section of operating system.

2. Describe the various process scheduling techniques.

OR

Explain the following:

- (i) Architecture of Window 2000
 - (ii) Structure of concurrent system
3. Write a shell program for decision making and describe the C compiler used in Unix Operating System.

OR

Write a shell script for looping structure with the use of arrays.

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E-COMMERCE

Part A (Marks: 10)

1. Define consumer to consumer business model.
2. What is Encryption?
3. Define confidentiality.
4. What is EFT?
5. What is E-Cheque?
6. Define Worms.
7. What is the use of digital library?
8. Why PGP is used?
9. What is cipher text?
10. Why digital signatures are used?

Part B (Marks: 10)

1. Write 4 advantages of E-Commerce.
2. What is mobile computing?
3. Explain Just-in-time approach in reference to EDI.
4. Write 4 applications of E-Commerce.
5. What do you mean by media convergence?

Part C (Marks: 30)

1. What is public key cryptography? Explain with diagram.

OR

Explain in detail the process of making payment through credit card while you are doing online shopping.

2. Explain mercantile process model from consumer's perspective.

OR

Explain business applications of EDI.

3. Explain the architecture of www.

OR

What is firewall and why it is used? Explain any firewall in detail.

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VISUAL BASIC PROGRAMMING

Part A (Marks: 10)

1. Define OLE.
2. What is procedure?
3. What is variant?
4. What is event?
5. What is full form of ADO?
6. What is type conversion?
7. What is now()?
8. Name any four graphic properties.
9. What are the types of module?
10. State dynaset-type recordset.

Part B (Marks: 10)

1. Differentiate between MDI and SDI.
2. Write a program in visual basic to calculate factorial of any inputted number.
3. Explain immediate window with example.
4. What is recursion? Explain with example.
5. What is the difference between scroll bar and slider control?

Part C (Marks: 30)

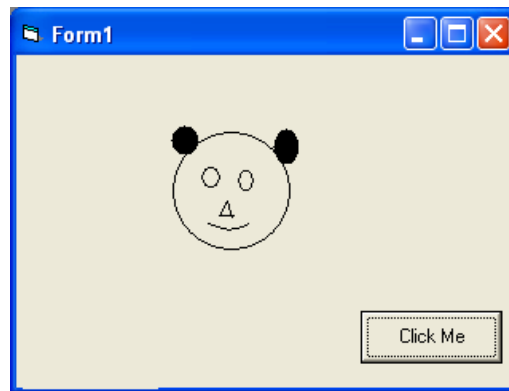
1. (a) What is event driven programming? Explain with a suitable example.
(b) State advantages of Visual Basic.

OR

- (a) Explain IDE
 - (b) What are the characteristics and features of Visual Basic?
2. (a) What are the steps of creating toolbar?
- (b) How to create a shortcut menu?

OR

Write a program in Visual Basic to create following pattern:



3. Explain the data access methods.

OR

Explain following controls with example:

- (i) Timer
- (ii) Image
- (iii) Combo Box
- (iv) List Box

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MULTIMEDIA BASIC

Part A (Marks: 10)

1. Write any two image capturing devices.
2. Write short note on CODEC.
3. What is colour depth?
4. What is typography?
5. Define sample rate.
6. Expand DVI and AVI.
7. Name four computer output tags.
8. What is meant by virtual reality?
9. What do you mean by browser?
10. Difference between
 and <P>.

Part B (Marks: 10)

1. What is meant by multimedia authoring tools? Name any four.
2. Define image maps.
3. Briefly define speech recognition.
4. Define lists in HTML.
5. Difference between get and post method in context with an HTML form.

Part C (Marks: 30)

1. What do you mean by Audio Synthesis? Explain all types of audio synthesis techniques available.

OR

- (a) Describe different types of color models.

(b) Define NTSC and SECAM video standards.

2. Explain different types of multimedia devices and presentation devices.

OR

Write advantages and disadvantages of multimedia.

3. Explain the following tags:

(i) Anchor tag/Hyperlink tag

(ii) Fony tag

(iii) Frameset

(iv) Marquee

OR

What do you mean by CSS? Describe all types of CSS including id and class selections.