

G 1517

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2015**

**Fourth Semester**

**EN 010 402—PRINCIPLES OF MANAGEMENT**

(Common to AI, AU, EC, EI, IC, IT, ME, MT, PO, PE and ST Branches)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. Mention the objectives of control function.
2. List the advantages of training.
3. What are the three time estimates of PERT ?
4. What are the functions of financial management ?
5. List four different types of market.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Explain different steps in planning.
7. What are the benefits of quality circle to the employees ?
8. Explain the different stages of product life cycle.
9. Explain different methods of costing with examples.
10. Write a note of sales promotion and sales forecasting.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.*

*Each full question carries 12 marks.*

11. Explain the following functions of management :—
  - (i) directing.
  - (ii) staffing.
  - (iii) communicating.

Or

**Turn over**

12. Differentiate between line organisation and stag organisation. Write the advantages and disadvantages of both types.
13. Explain what do you understand by recruitment. What are the different sources of recruitment ? What are the merits and demerits of recruitment through these sources ?

Or

14. What is industrial fatigue ? What are the causes ? How they are overcome ?
15. Describe the scope and objectives of production management. What are the different types of production systems ?

Or

16. A small project consists of 7 activities whose time estimates are listed below :

Activity		$t_o$	$t_m$	$t_p$
1 - 2	...	1	1	7
1 - 3	...	1	4	7
1 - 4	...	2	2	8
2 - 5	...	1	1	1
3 - 5	...	2	5	14
4 - 6	...	2	5	8
5 - 6	...	3	6	15

- (i) Draw the project network and identify the critical path.
- (ii) Find the expected time and variance of each activity.
- (iii) What is the probability that the project will be completed at least three weeks earlier than expected ?

17. What are the objectives and functions of financial management ? Explain.

Or

18. (a) Define capital. What are the different types ? Explain their important features.  
(b) Write a note on standard costs.
19. (a) Explain different steps in advertising. Explain the media of advertisement.  
(b) What are the different types of competitive situations found in a market ?

Or

20. Explain the different steps in marketing research. What is the importance of marketing research ?

(5 × 12 = 60 marks)

**G 1597**

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2015**

**Fourth Semester**

Branch : Information Technology

**COMPUTER SYSTEMS ARCHITECTURE (T)**

(Old Scheme—Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions briefly.  
Each question carries 4 marks.*

1. What is operating systems ? What is its function ?
2. What are the control and status signals of 8085 ? Explain the functions of each ?
3. What are the functions of MOV and MVI instructions ? Differentiate between them.
4. Explain the different types of rotate instructions in 8085 ?
5. Explain signed division operation with an example.
6. Explain the control sequence for executing the instruction ADD.
7. Give the structure of memory hierarchy with suitable diagram.
8. What a Cache coherence ? How to solve it ?
9. What are I/O processors ?
10. State the speed mismatch problem.

(10 × 4 = 40 marks)

**Part B**

*Answer all questions.  
Each full question carries 12 marks.*

11. (a) Explain the features of the general purpose registers in 8085. (4 marks)
- (b) What do you understand by an instruction cycle ? How it differs from the machines cycle ? Explain. (4 marks)
- (c) Describe the various flags and their functions in 8085 ? (4 marks)

Or

12. With a neat block diagram, describe the functional units in a digital computer. Give suitable examples for each unit and briefly mention their functions.

**Turn over**

13. Describe all the ADD instructions in 8085 with examples and identify their addressing modes. Compare them.

Or

14. Explain different addressing modes in 8085, giving suitable examples.  
15. With neat diagrams, explain a 4 bit carry save adder.

Or

16. What is Booth's algorithm ? Multiply  $29X - 6$  using the same.  
17. Illustrate the principle of paging and segmentation under the virtual memory concept with suitable diagrams.

Or

18. (a) What are the operations on cache in virtual memory environment ? (6 marks)  
(b) Describe associative memory organisation with the help of suitable block diagrams. (4 marks)
19. (a) What is burst mode DMA ? Explain. (6 marks)  
(b) It is proposed to connect 8 devices to a processor. Describe various ways of connecting them stating the merits in each case. (6 marks)

Or

20. (a) State any four pieces of I/O design. (4 marks)  
(b) Distinguish failure rate among CPU, memory disk, SCSI controller and power supply. (8 marks)

[5 × 12 = 60 marks]

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Reg. No.....

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**B.TECH. DEGREE EXAMINATION, MAY 2015**

**Fourth Semester**

Branch : Information Technology

IT 010 406—OBJECT ORIENTED TECHNIQUES

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.  
Each question carries 3 marks.*

1. List any four OOP languages and their main features.
2. How to invoke static members of a class ?
3. List different types of inheritances.
4. Which are various functions used for formatted output operations.
5. What does mean life cycle ?

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.  
Each question carries 5 marks.*

6. State the difference between procedure oriented programming and object oriented programming.
7. State the characteristics of member function.
8. What is containership ? Explain with suitable example.
9. Mention some of the methods defined by Thread class.
10. Write short notes on adapter classes.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.  
Each question carries 12 marks.*

11. Write short notes on pointer types.

Or

Turn over

12. Explain in detail about the following terms with example program :—

- (a) Function Invocation.
- (b) Function Prototypes.

13. Explain runtime polymorphism with suitable example.

*Or*

14. What is copy and default constructor ? Give syntax and example program.

15. Explain break and continue statements with an example in Java.

*Or*

16. What are the different forms of inheritance ? Explain with an example.

17. Explain in detail about exception handling.

*Or*

18. Explain in detail about interfaces.

19. Explain Applet lifecycle in detail.

*Or*

20. Write short notes on following components :—

- (a) Label.
- (b) TextField.
- (c) Text Area.
- (d) List.
- (e) Choice.
- (f) Button.

(5 × 12 = 60 marks)

G 1542

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2015**

**Fourth Semester**

Branch : Information Technology

IT 010 403—COMPUTER ORGANISATION AND ARCHITECTURE (IT)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. What are the functional components of a computers ? Explain.
2. Explain instruction Execution cycle.
3. List the different types of semiconductor memories.
4. What is your notion of program controlled I/O ?
5. Explain memory consistency.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Explain the issues in the design of Instruction Formats.
7. Explain the internal processor organization in detail.
8. Explain in detail the cell structure of SRAM and DRAM.
9. Write short notes on Firewall and Infini band.
10. What is pipelining ? Explain different pipeline hazards.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. Explain the architectural differences between RISC and CISC.

Or

12. Discuss in detail the characteristics of Machine Instruction.

**Turn over**

13. Describe the characteristics of memory systems.

*Or*

14. What is cache ? Explain cache mapping techniques briefly.

15. What are the major functions of an I/O module ? Explain in detail, each of them.

*Or*

16. What is DMA ? Explain its operation.

17. Explain the implementation of hardwired control unit.

*Or*

18. What are the different types of Registers in a computer ? Explain the purpose of each of them.

19. Explain the design issues of a pipelined architecture (any *four*).

*Or*

20. What are Multiprocessors ? Explain its organisation.

(5 × 12 = 60 marks)



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**B.TECH. DEGREE EXAMINATION, MAY 2015**

**Fourth Semester**

Branch : Information Technology

LINEAR INTEGRATED CIRCUITS AND APPLICATIONS (T)

(Old Scheme—Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 4 marks.*

1. Draw the equivalent circuit of operational amplifier and explain its parameters.
2. Draw the circuit of an inverter using Op-amp for a voltage gain of 5.
3. List the advantages of active filters.
4. Draw a zero crossing detector with inversion and sketch input-output waveforms, for a sinusoidal input.
5. What are the sources of error in an ADC ?
6. What are the merits and demerits of a weighted resistor DAC compared to a ladder type DAC ?
7. Write the advantages and disadvantages of a switching regulators compared to a linear regulator.
8. Draw the circuit of a zener shunt voltage regulator and explain how regulation is effected against changes in load current.
9. Explain the need for LPF in a PLL.
10. Draw the internal block diagrams of 565 and explain.

(10 × 4 = 40 marks)

**Part B**

*Answer all questions.*

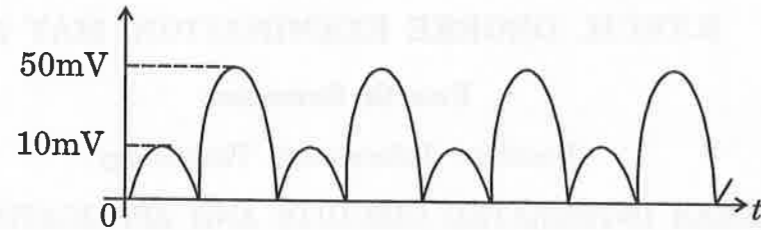
*Each question carries 12 marks.*

11. Define slew rate. Explain its cause. Derive the equation to measure the slew-rate. With necessary circuit, show how slew rate can be determined ?

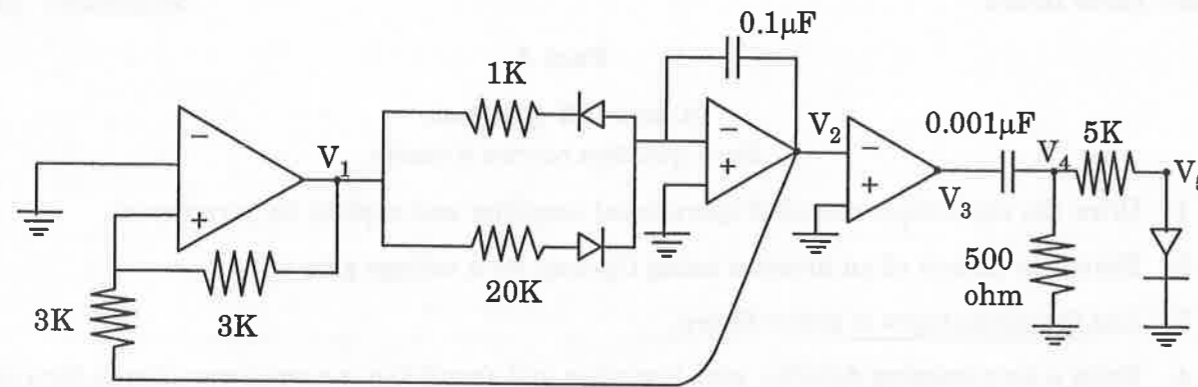
Or

Turn over

12. Draw and design a circuit to produce the following waveform, starting from an input sine wave :



13. Draw the waveforms at  $V_1$ ,  $V_2$ ,  $V_3$ ,  $V_4$  and  $V_5$ . Determine the amplitudes and time intervals of each :



Or

14. Cascade an active LPF and BPF to design a wide band pass filter which passes frequencies from 20 Hz to 2 kHz using Op-amp.

15. Draw and explain a 4-bit R-2R ladder DAC with  $R = 10k \Omega$  and  $V_R = 10$  Volt. Determine the value of  $R_f$  so that the following conditions to be met with :

- (i) The value of 1 LSB at the output is 0.5 Volt.
- (ii) An analog output of 6V for a binary of input 1000.
- (iii) The full scale output voltage of 12 Volt.
- (iv) The actual maximum output voltage is 10 Volt.

Or

16. Draw and design a 3-bit simultaneous type ADC. Explain its working and mention its merits and limitations.

17. With the internal functional block diagram, explain the working principle of 723 monolithic voltage regulator. Explain how the IC can be used to provide regulated output voltage in the range 2 Volt to 7 Volt.

Or

18. Draw and explain how a fixed voltage regulator circuit can be set up using IC 7805. Also draw and explain how 7805 can be used as a current source.

19. Draw and explain the circuits of (i) AM detector ; and (ii) FM discriminator using PLL.

Or

20. Describe the circuit of an IC power amplifier. What are the merits and demerits of this circuit ?  
(5 × 12 = 60 marks)