

**PART-A****(5 x 2 = 10 Marks)****Note: (i) Answer any FIVE questions out of which question No.8 is compulsory.****(ii) All questions carry equal marks.**

- 1 Draw the symbol of IGBT.
- 2 Mention the types of triggering of SCR.
- 3 What is natural communication?
- 4 What is chopper?
- 5 What is SMPS? Mention its types.
- 6 State any two advantages of PLC.
- 7 What is DCS?
- 8 What is an inverter?

**PART-B****(5 x 3 = 15 Marks)****Note: (i) Answer any FIVE questions out of which question No. 16 is compulsory.****(ii) All questions carry equal marks.**

- 9 Write short notes on pulse transformer.
- 10 Draw the circuit diagram of single phase fully controlled bridge converter with RL load.
- 11 List the advantages and disadvantages of SMPS.
- 12 Compare online UPS with offline UPS.
- 13 Draw the ladder diagram for the following gates. (i) OR gate (ii) AND gate (iii) EX-OR gate
- 14 What is the function of I/P module? List the I/P devices.
- 15 Mention the types of information displays used in DCS.
- 16 Compare power MOSFET with power transistor.

**PART-C****(5 x 10 = 50 Marks)****Note: (i) Answer all the questions choosing either sub-division (A) or sub-division (B) of each question.****(ii) All divisions carry equal marks.**

- 17 A Explain the working principle and VI characteristics of MOSFET with neat diagram. 10  
State its applications.  
**(OR)**  
B Explain the working of synchronized UJT triggering circuit with waveforms. 10
- 18 A Explain the working principle of single phase half controlled bridge converter with RL load with diagram. 10  
**(OR)**  
B Explain the working of DC chopper with diagram. 10
- 19 A Explain the working principle of single phase inverter with waveforms and circuit diagram. 10  
**(OR)**  
B Draw the block diagram of SMPS and explain it. State its application. 10
- 20 A Draw the block diagram of PLC and explain each block. 10  
**(OR)**  
B Draw the ladder diagram of star delta starter and explain. 10
- 21 A Draw the architecture of DCS and explain it. 10  
**(OR)**  
B What are the basic elements of local control unit? and explain. 10

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Reg. No. 

April 2019 Examinations

DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING

Communication Engineering

Year/Sem: II / IV (EVEN-II)

Max. Marks : 75

Time : 3 hr.

## PART-A

(5 x 2 = 10 Marks)

**Note: (i) Answer any FIVE questions out of which question No.8 is compulsory.****(ii) All questions carry equal marks.**

- 1 What is attenuator?
- 2 Define amplitude modulation.
- 3 Define Automatic Gain Control.
- 4 Mention any two types of FM detector.
- 5 What is meant by tweeter?
- 6 Expand DVD.
- 7 What is meant by scanning?
- 8 List out the types of TV standards.

## PART-B

(5 x 3 = 15 Marks)

**Note: (i) Answer any FIVE questions out of which question No. 16 is compulsory.****(ii) All questions carry equal marks.**

- 9 Explain any two types of filters.
- 10 State different types of AGC and explain any one.
- 11 Compare AM and FM.
- 12 Explain the generation of PAM.
- 13 Compare Carbon and Condenser microphone.
- 14 Explain Hi-Fi system principle.
- 15 What happens if the flicker is present in display?
- 16 Define antenna and draw Parabolic antenna.

## PART-C

(5 x 10 = 50 Marks)

**Note: (i) Answer all the questions choosing either sub-division (A) or sub-division (B) of each question.****(ii) All divisions carry equal marks.**

- 17 A Derive the expression for Symmetrical 'T' attenuator. 10  
(OR)  
B Explain the working of Yagi antenna with neat diagram. 10
- 18 A What is the need for modulation? Explain balanced modulator with neat diagram. 10  
(OR)  
B Explain the Superheterodyne receiver with block diagram. 10
- 19 A Explain the working of Ratio detector with a neat diagram. 10  
(OR)  
B Explain Generation and detection of PWM with neat diagram. 10
- 20 A Describe the principle, Construction and working principle of Piezo electric Microphone 10  
(OR)  
B Explain in detail about Dolby system. 10
- 21 A Explain about monochrome TV receiver with neat diagram. 10  
(OR)  
B Briefly explain about (i) Cable Television (ii) Handy cam 10

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DIPLOMA IN electronics and communication engineering

Digital Electronics

Year/Sem: II / IV (EVEN-II)

Max. Marks : 75

Time : 3 hr.

**PART-A****(5 x 2 = 10 Marks)****Note: (i) Answer any FIVE questions out of which question No.8 is compulsory.****(ii) All questions carry equal marks.**

- 1 List the types of number system with base.
- 2 Why NAND and NOR gates are called as universal gates?
- 3 State multiplexer.
- 4 Mention the various types of flip flops.
- 5 Expand EPROM and EEPROM.
- 6 Mention the various types of interrupt signals.
- 7 What is microprocessor?
- 8 What are the modes available in shift register?

**PART-B****(5 x 3 = 15 Marks)****Note: (i) Answer any FIVE questions out of which question No. 16 is compulsory.****(ii) All questions carry equal marks.**

- 9 Construct an AND gate by using NAND gate.
- 10 What are the difference between combinational and sequential logic.
- 11 Draw the logic diagram and truth table of half adder.
- 12 Briefly explain about D flip flop.
- 13 List any three difference between asynchronous and synchronous counter.
- 14 What are the different types of memory?
- 15 Briefly explain program counter and stack pointer.
- 16 Mention the difference between DRAM and SRAM.

**PART-C****(5 x 10 = 50 Marks)****Note: (i) Answer all the questions choosing either sub-division (A) or sub-division (B) of each question.****(ii) All divisions carry equal marks.**

- |    |   |  |    |
|----|---|--|----|
| 17 | A | Draw the symbol, truth table and equations of AND, OR and NOT gates.   | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | Simplify the following function using k-map and simulate its output by using gates<br>$F = \Sigma (0,1,2,3,5,7,8,9,10,11,13,15)$ | 10 |
| 18 | A | Draw and explain the logic diagram of multiplexer.   | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | Explain the logic diagram and truth table of full adder.   | 10 |
| 19 | A | Explain in detail about JKMS flip flop with logic diagram and truth table.   | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | Draw and explain the logic diagram of 4 bit ripple up counter.   | 10 |
| 20 | A | Explain the working principle of RAM organization.   | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | Draw and explain the ROM organization in detail.   | 10 |
| 21 | A | Draw and explain the architecture of 8085 microprocessor.  | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | Explain in detail about the different types of addressing modes in 8085 with suitable examples.                                  | 10 |

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April 2019 Examinations

DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING

Linear Integrated Circuits

Year/Sem: II / IV (EVEN-II)

Max. Marks : 75

Time : 3 hr.

**PART-A****(5 x 2 = 10 Marks)****Note: (i) Answer any FIVE questions out of which question No.8 is compulsory.****(ii) All questions carry equal marks.**

- 1 Draw the equivalent circuits of an op-Amp.
- 2 Mention any two differences between Inverting and Non-inverting Amplifier.
- 3 Define ZCD and draw its circuit diagram.
- 4 List any four applications of op-Amp.
- 5 Draw the pin diagram of VCO.
- 6 Define Lock-in Range and capture range of PLL.
- 7 State Nyquist criterion.
- 8 Differentiate fixed voltage regulators with general purpose regulators.

**PART-B****(5 x 3 = 15 Marks)****Note: (i) Answer any FIVE questions out of which question No. 16 is compulsory.****(ii) All questions carry equal marks.**

- 9 Define CMRR and slew rate.
- 10 Mention the advantages of IC over discrete components.
- 11 Draw and briefly explain Unity Gain Amplifier.
- 12 List the applications of Instrumentation Amplifier.
- 13 Draw the basic block schematic of PLL.
- 14 How the analog signal is converted into Digital signal? Briefly explain.
- 15 Explain in brief about fixed voltage regulators with examples.
- 16 Draw free running multivibrator circuit using op-Amp.

**PART-C****(5 x 10 = 50 Marks)****Note: (i) Answer all the questions choosing either sub-division (A) or sub-division (B) of each question.****(ii) All divisions carry equal marks.**

- |    |   |  |    |
|----|---|--|----|
| 17 | A | Explain about Non-inverting and Differential Amplifier with a neat circuit diagram.      | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | Discuss i) Ideal characteristics of an op-Amp ii) Pin description iii) Virtual Ground    | 10 |
| 18 | A | With necessary diagrams describe the working of Inverting and Non-Inverting Comparators. | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | How the op-Amp is used to generate Triangular Wave? Explain.                             | 10 |
| 19 | A | Draw the functional block diagram of IC 566 and explain.                                 | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | List the applications of PLL and also explain about the basic Block diagram of PLL.      | 10 |
| 20 | A | Describe the weighted Resistor DAC with neat diagram and derive the output voltage.      | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | With a neat diagram explain about successive Approximation type ADC with an example.     | 10 |
| 21 | A | Illustrate and explain the functional block diagram of 723 IC.                           | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | Explain about the functional block diagram of 555 timer.                                 | 10 |