

THIAGARAJAR POLYTECHNIC COLLEGE, SALEM

(Autonomous)

Reg. No. 

April 2019 Examinations

DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING

Computer Hardware Servicing and Networks

Year/Sem: III / VI (EVEN-III)

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 any three rear panel connectors.
- 2 What do you meant by MFP?
- 3 Define POST.
- 4 What do you meant by peer to peer network?
- 5 Define HTTP.
- 6 List any two features of AGP.
- 7 Mention any 2 types of key board.
- 8 Expand: SMD & ESD.

**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 Mention the features of PCMCIA bus.
- 10 Draw the structure of an inkjet printer.
- 11 Describe about IPL hardware.
- 12 Discuss about the types of connections in a network.
- 13 Describe in detail about socket.
- 14 Describe about the basic power settings used to improve battery life.
- 15 Discuss in detail about wireless Router.
- 16 Mention the features of TELNET.

**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 in detail about the architecture of multicore processor with neat diagram. | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | Explain the working principle & construction of hard disk.                         | 10 |
| 18 | A | Explain the construction & operation of DOT matrix.                                | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | i) Discuss in detail about SVGA.   | 5  |
|    |   | ii) Discuss the working principle of MODEM.  | 5  |
| 19 | A | i) Explain the steps involved in installation.                                     | 7  |
|    |   | ii) Discuss any 2 troubleshooting laptop hardware problems.                        | 3  |
|    |   | <b>(OR)</b>  |    |
|    | B | Explain about firewalls & latest diagnostic software.                              | 10 |
| 20 | A | Explain about various network topologies with its merits and demerits.             | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | Explain in detail about OSI model with neat diagram.                               | 10 |
| 21 | A | Explain in detail about TCP & UDP with neat diagram.                               | 10 |
|    |   | <b>(OR)</b>  |    |
|    | B | Explain in detail about subnetting & supernetting.                                 | 10 |

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DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING

Bio Medical Instrumentation

Year/Sem: III / VI (EVEN-III)

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 action potential?
- 2 What is heart rate?
- 3 Mention any two types of lead system used in ECG.
- 4 What is pacemaker?
- 5 State the applications of endoscope.
- 6 State the applications of biotelemetry
- 7 What is micro shock?
- 8 State the applications of laser in medicine.

**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 cell structure.
- 10 State the clinical uses of EEG.
- 11 List the types of audiometer.
- 12 Compare hemodialysis and peritoneal dialysis.
- 13 What is ventilator? Mention its types.
- 14 Mention the risks associated with electro surgery.
- 15 Write short notes on angiography.
- 16 State the applications of telemedicine.

**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 different types of electrodes used to measure bio potentials.                                     | 10 |
|    |   | <b>(OR)</b>   |    |
|    | B | Draw the block diagram of Ultrasonic blood flow meter and explain.  | 10 |
| 18 | A | Explain the working of ECG with its block diagram.  | 10 |
|    |   | <b>(OR)</b>   |    |
|    | B | Explain the principle and working of basic audiometer with a neat diagram.                                    | 10 |
| 19 | A | Explain the operation of ac defibrillator with a neat diagram.  | 10 |
|    |   | <b>(OR)</b>   |    |
|    | B | Draw the block diagram of Heart lung machine and explain.   | 10 |
| 20 | A | Draw the block diagram of bio-telemetry system and explain  | 10 |
|    |   | <b>(OR)</b>   |    |
|    | B | List the methods of accident prevention and explain any one in detail.  | 10 |
| 21 | A | Draw the block diagram of X-ray machine and explain its operation.  | 10 |
|    |   | <b>(OR)</b>   |    |
|    | B | Explain in detail the principle and operation of magnetic resonance imaging technique with necessary diagram. | 10 |

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DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING

Embedded Systems

Year/Sem: III / VI (EVEN-III)

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 Define Embedded System.
- 2 Write any three applications of Embedded System.
- 3 List any three types of Data processing instructions.
- 4 Mention the four fields in Program Status Register (PSR) instruction.
- 5 Define the term flushing.
- 6 What is split cache?
- 7 Write brief note about scheduler.
- 8 What is the function of RTC?

**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 What are the three differences between RISC and CISC?
- 10 What are the two power control modes?
- 11 List any three differences between POP and PUSH instruction.
- 12 Draw the diagram of Barrel shifter.
- 13 What are the three main components of cache memory?
- 14 Mention the types of cache policies.
- 15 Briefly explain the concept of multitasking.
- 16 Briefly explain the format of Endianness.

**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 in detail about Embedded system Hardware with neat block diagram.   | 10 |
|    |   | <b>(OR)</b>   |    |
|    | B | Explain the operation of pipeline with neat block diagram.  | 10 |
| 18 | A | Explain the Arithmetic instructions and Logic instructions with an example.   | 10 |
|    |   | <b>(OR)</b>   |    |
|    | B | Draw and explain in detail about the program status register instruction (PSR) with suitable example.                 | 10 |
| 19 | A | Explain in detail about the concept of memory hierarchy with neat block diagram.                                      | 10 |
|    |   | <b>(OR)</b>   |    |
|    | B | Explain the working principle of virtual memory with neat block diagram.  | 10 |
| 20 | A | Draw the architecture of LPC2148 and explain each explanation in detail.  | 10 |
|    |   | <b>(OR)</b>   |    |
|    | B | Explain the functional operation of Universal Asynchronous Receiver Transmitter (UART) with its register description. | 10 |
| 21 | A | Draw and explain in detail about the concept of context switching.  | 10 |
|    |   | <b>(OR)</b>   |    |
|    | B | Explain in detail about the concept of semaphores and its types with neat sketch.                                     | 10 |

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