

THIAGARAJAR POLYTECHNIC COLLEGE, SALEM

Autonomous Final Semester 2020 Examinations

DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING

Reg. No.

COMPUTER HARDWARE SERVICING AND NETWORKS

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

Time : 2 hrs

Date & Session: 23.09.2020/AN

Max. Marks : 50

PART-A

(4 x 2 = 8 Marks)

Note: (i) Answer any FOUR questions.

(ii) All the questions carry equal marks.

- 1 What is a chipset?
- 2 Define Cache Memory.
- 3 List the keyboard signals.
- 4 Draw the connector diagram and the signal names of USB port.
- 5 Expand the terms: BIOS and POST.
- 6 What is a touch pad?
- 7 List some of the network devices.
- 8 Write the concept of CSMA / CD.

PART-B

(4 x 3 = 12 Marks)

Note: (i) Answer any FOUR questions.

(ii) All the questions carry equal marks.

- 9 What are the front panel and rear side connectors available in PCs?
- 10 Explain the operation of optical mouse.
- 11 Explain the various beep sounds and error messages given by POST.
- 12 Write about ESD and precautions.
- 13 Explain about Network Switches.
- 14 Explain about HAN.
- 15 What is subnetting?
- 16 Compare 802.3 and 802.5 protocols.

PART-C

(3 x 10 = 30 Marks)

Note: i) Answer any THREE questions

ii) All the questions carry equal marks.

- |   |    |
|---|----|
| 17 Explain the architecture and block diagram of multicore processor. | 10 |
| 18 Explain the operation of Laser Printer with neat diagram.          | 10 |
| 19 Draw the block diagram of Laptop and explain.                      | 10 |
| 20 Explain about the any two network topologies.                      | 10 |
| 21 Write briefly about i) Routers and ii) Gateways.                   | 10 |
| 22 Explain the architecture of TCP/IP protocol suite.                 | 10 |

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DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING

Reg. No.

**BIO MEDICAL INSTRUMENTATION**

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

Time : 2 hrs

Date & Session: 24.09.2020/AN

Max. Marks : 50

**PART-A**

**(4 x 2 = 8 Marks)**

**Note: (i) Answer any FOUR questions.**

**(ii) All the questions carry equal marks.**

- 1 What is bio potential?
- 2 Define blood pH.
- 3 What is ERG?
- 4 What is defibrillator?
- 5 State the applications of endoscope.
- 6 State the applications of biotelemetry.
- 7 What is macro shock?
- 8 Write any two laser properties.

**PART-B**

**(4 x 3 = 12 Marks)**

**Note: (i) Answer any FOUR questions.**

**(ii) All the questions carry equal marks.**

- 9 Define lung volume.
- 10 State the clinical uses of EEG.
- 11 Mention the types of lead system used in ECG.
- 12 Compare hemodialysis and peritoneal dialysis.
- 13 Write the importance of ventilators.
- 14 What is leakage current? Mention the types of leakage current.
- 15 Write short notes on angiography.
- 16 State the applications of telemedicine.

**PART-C**

**(3 x 10 = 30 Marks)**

**Note: i) Answer any THREE questions**

**ii) All the questions carry equal marks.**

- |   |    |
|---|----|
| 17 Draw the block diagram of Ultrasonic blood flow meter and explain.         | 10 |
| 18 Explain the principle and working of basic audiometer with a neat diagram. | 10 |
| 19 Draw the block diagram of Heart lung machine and explain.                  | 10 |
| 20 Draw the block diagram of bio-telemetry system and explain.                | 10 |
| 21 Draw the block diagram of X –ray machine and explain its operation.        | 10 |
| 22 Explain in detail the operation of CT scanner with neat diagram.           | 10 |

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DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING Reg. No.

**EMBEDDED SYSTEMS**

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

Time : 2 hrs

Date & Session: 25.09.2020/AN

Max. Marks : 50

**PART-A**

**(4 x 2 = 8 Marks)**

**Note: (i) Answer any FOUR questions. (ii) All the questions carry equal marks.**

- 1 List few applications of embedded system.
- 2 What is the importance of pipelining in a processor?
- 3 What is the use of SWI instruction?
- 4 Name the stack instructions.
- 5 What is the need of cache memory?
- 6 What is meant by Mutual Exclusion?
- 7 Define Scheduling.
- 8 Define Virtual memory.

**PART-B**

**(4 x 3 = 12 Marks)**

**Note: (i) Answer any FOUR questions. (ii) All the questions carry equal marks.**

- 9 Write short notes on ARM nomenclature and Families.
- 10 Distinguish between RISC and CISC.
- 11 List the exception types and its priorities.
- 12 Define cache flushing & Cleaning.
- 13 Write note on memory mapping of LPC2148.
- 14 Explain the advantages of using Wakeup timer.
- 15 List the fundamental components of Embedded OS.
- 16 Write an assembly language program to Multiply any 2 numbers.

**PART-C**

**(3 x 10 = 30 Marks)**

**Note: i) Answer any THREE questions ii) All the questions carry equal marks.**

- |   |    |
|---|----|
| 17 i) Explain the various execution modes of ARM processor.                           | 6  |
| ii) Explain CPSR in ARM.  | 4  |
| 18 i) Explain the Embedded system Hardware with neat block diagram.                   | 7  |
| ii) Write brief note on Endianness.   | 3  |
| 19 Explain the i) Branch Instructions and ii) PSR Instructions with suitable example. | 10 |
| 20 What are the different types of cache policies? Explain them.                      | 10 |
| 21 Draw the block diagram of LPC 2148 and explain the function of each block.         | 10 |
| 22 Explain the concept of Inter process communication.                                | 10 |