

**PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)**

**BVoc DEGREE EXAMINATION MAY 2022  
(Fourth Semester)**

Branch – **NETWORKING AND MOBILE APPLICATION**

**EMBEDDED SYSTEM**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks (10 x 1 = 10)

- 1) Which design activity can be used for the mapping operation to hardware?
  - (i) High-level transformation
  - (ii) Scheduling
  - (iii) Compilation
  - (iv) Hardware / Software partitioning
- 2) An Embedded system is \_\_\_\_\_ designed to perform a specific function.
  - (i) An External and Internal System
  - (ii) A Hardware and Software system
  - (iii) An Electronic/Electro-mechanical system
  - (iv) both a & b
- 3) Which of the following processor architecture supports easier instruction pipelining?
  - (i) Harvard
  - (ii) Von Neumann
  - (iii) Both of them
  - (iv) none of the above
- 4) ASICs Stands for
  - (i) Application Server Integrated Circuits
  - (ii) Application Specific Integrated Circuits
  - (iii) Application Source Integrated Circuits
  - (iv) None of the above
- 5) Embedded systems are application and Domain-and Specific.
  - (i) No, it have application only
  - (ii) Yes, Embedded are application and domain Specific
  - (iii) False
  - (iv) None of the Above
- 6) Which of the following is a distributed embedded system?
  - (i) Cell Phone
  - (ii) Notebook Computer
  - (iii) SCADA system
  - (iv) All of the above
- 7) The standard 8051 architecture supports 6 interrupts, what are they
  - (i) 2 external, 2 timer and 2 serial
  - (ii) 3 external , 1 timer and 2 serial
  - (iii) 1 External, 2 Timer and 3 Serial
  - (iv) 3 external, 2 timer and 1 serial
- 8) 8051 is built around the \_\_\_ Architecture
  - (i) Harvard Processor
  - (ii) Von-Neumann Processor
  - (iii) U Processor
  - (iv) None of the Above
- 9) \_\_\_ design allows the reuse of the software and the hardware components
  - (i) Memory
  - (ii) Platform based
  - (iii) Peripheral
  - (iv) Input
- 10) Which design activity helps in the transformation of the floating point arithmetic to fixed point arithmetic?
  - (i) High-level transformation
  - (ii) Scheduling
  - (iii) Compilation
  - (iv) Task-level concurrency management

**SECTION - B (25 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** Marks (5 x 5 = 25)

11) a. Describe the Introduction of Embedded system.

OR

b. Explain the difference between Embedded System vs General Computing Systems

12) a. Explain the Harvard and Von Neumann Processor/Controller Architecture.

OR

b. Outline the Application Specific integrated Circuits(ASICs)

Cont...

13) a. Explain Characteristics of an Embedded Systems.

OR

b. Describe the operational Quality Attributes in Embedded

14) a. Bring out the 8051 Microcontrollers?

OR

b. Show the Block Diagram of 8051 Architecture.

15) a. State the objective of EDLC.

OR

b. Summarise the development Platform trends in embedded systems.

**SECTION -C (40 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 8 = 40)

16) a. Elucidate the purpose of Embedded Systems.

OR

b. Discuss the wearable devices in embedded systems.

17) a. Explain the Memory in core of Embedded Systems

OR

b. Distinguish between Sensors and Actuators:

18) a. Enumerate the Characteristics and Quality attributes of Embedded Systems

OR

b. Point out the Application Specific in Embedded systems.

19) a. Examine the Factors to be considered in selecting a controller

OR

b. Classify the Hardware/ Software trade-offs.

20) a. Examine the embedded Categories.

OR

b. Discuss the Different Phases of EDLC.

Z-Z-Z END