

Model Question Paper

MAHATMA GANDHI UNIVERSITY

IV SEMESTER B.Sc. PHYSICS Programme EXAMINATION

APPLIED ELECTRONICS (Model II)

PH4B12U – APPLICATIONS OF MICRO PROCESSORS.

Instructions:

1. Time allotted for the examination is 3 Hours.
2. Answer **all** question in part A. This contains 4 bunches of 4 objective type questions
For each bunch, Grade A will be awarded if all the 4 questions are correct,
B for 3, c for 2, D for 1 and E for 0.
Answer any 5 questions from B, any 4 from Part C and any 2 from Part D.
3. Candidates can use(type of calculator/tables)

Part A (objective type-weight 1 each)

Fill in the blanks

Bunch 1

1. The number of input/output ports in Z80 are
(a) 0 (b) 2 (c) 4 (d) 5
 2. Microprocessors are intended to be acomputer
(a) General-purpose (b) Special-purpose (d) hybrid (d) Analog
 3. A microcontrollers are of Bit types
(1) 8-bit (b) 32-bit (c) 16-bit (d) All of the above
 4. Which is said to be ‘computer on a chip’
(a) Micro processors (b) Microcontrollers (c) Both (c) None of the above
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Bunch - 2

5. The specified maximum frequencies used in 8051 oscillator clock is
(a) 1 MHz (b) 10 MHz (c) 16 MHz (d) 28 MHz
6. The Program counter in 8051 is a bit register
(a) 8 bit (b) 16 bit (c) 32 bit (d) 64 bit

7. The 1 bit registers provided to store the results of certain program instructions are called a
- (a) Status Register (b) DPTR (c) Program Counter (d) Flag.
8. The power control register is represented as
- (a) PC (b) PSW (c) PCON (d) PR
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Bunch – 3

9. Which is the instruction used for providing direct values to a register through the instruction itself
- (a) MOV (b) MVI (c) ADD (d) JNZ
10. The 7-segment LED displays are of types.
- (a) Common Anode (b) Common Cathode (c) Both (d) None
11. The language understandable for a computer system is
- (a) Machine level language (b) Assembly language (c) high-level language (d) None of the above
12. The symbolic code for each instruction is called as
- (a) Mnemonic (b) Operand (c) Comment (d) Op-code
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Bunch – 4

13. is a program that translate mnemonics to binary codes of the processor
- (a) Compiler (b) Assembler (c) Comparator (d) Converter
14. 1 byte is bits
- (a) 4 (b) 6 (c) 8 (d) 16
15. Logical operation in an 8085 processor include operation
- (a) AND,OR,EXOR (b) Rotate (c) Compare & Complement (d) All of the above
16. The various ways of specifying data are called
- (a) Addressing modes (b) Calling (c) Conditional jumps (d) Interrupts
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Part B (Short answer questions – weight 1 each)

- 17 What is meant by Delay Subroutine?
- 18 What is multiple digit display?

- 19 What are the devices used in Temperature measurement and Control?
 - 20 Draw the connection diagram to generate Square wave using microprocessor.
 - 21 What is the use of flags in 8051 microcontroller?
 - 22 What is meant by interrupt?
 - 23 What is the difference between delay subroutine and interrupt function?
 - 24 What is the use of reset in a controller?
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Part C – (Short Essay/Problem – Weight 2 each)

- 25 What is the difference between a microcontroller and micro processor?
 - 26 Write a program to generate 7-Segment LED display using microprocessor
 - 27 Write a program for producing a short delay using one register.
 - 28 Write a short note on Oscillator clock in 8051 microcontroller.
 - 29 What are the I/O ports used in 8051 controller?
 - 30 What is a Timer? Write a short note on Timer modes of operation.
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Part D – (Long Essay – Weight 4 each)

- 31 Explain a stepper motor operation. Write a program to interface stepper motor using 8085 processor
- 32 Describe briefly 8051 microcontroller hardware
- 33 What is the function of an interrupt in a program. Explain its usage along with the priority levels.
