



K18P 0072

Reg. No. :

Name :

**Third Semester M.C.A. Degree (Regular/Supplementary/Improvement)
Examination, January 2018
(2014 Admission Onwards)**

MCA3C17 : ADVANCED MICROPROCESSORS & MICROCONTROLLERS

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **any ten** questions. **Each** question carries **three** marks.

1. What are the functional parts of 8086 CPU ?
2. List out the functions of flag register in 8086.
3. What are the functions of the following signals of 8086.
 - i) ALE
 - ii) READY
 - iii) INTR
4. What are the advantages of math coprocessor ?
5. Define Paging.
6. How to use the instruction and data caches in Pentium?
7. What is mode 0 operation of 8255 ?
8. Mention the uses of 8251 chip.
9. What are the uses of application software ?
10. List out the services provided by Operating System.
11. Mention the interrupt sources of 89C51 with their vector address.
12. What are the merits and demerits of a single board computer ? **(10×3=30)**

P.T.O.



SECTION – B

Answer **all** questions, **each** question carries **ten** marks.

13. a) i) Draw and discuss the internal block diagram of 8086. 5
 ii) With suitable examples, explain the various addressing modes for the 8086 instructions. 5
 OR
- b) i) What is instruction set ? Explain the instruction format in 8086. 5
 ii) Explain the 8086 interrupts types in detail. 5
14. a) i) Briefly discuss the basic architecture of 80286. 5
 ii) Explain the virtual memory management in 80386. 5
 OR
- b) i) Briefly explain the functional block diagram of 80386. 5
 ii) What are real and protected modes in 80386 ? 5
15. a) i) Explain briefly the salient features of Pentium processor. 5
 ii) List out the recent trends in microprocessor design. Discuss their merits of each. 5
 OR
- b) i) Discuss the special features of 80486. 5
 ii) What are the various modes of operation of 8255 ? 5
16. a) i) What are the differences between a microprocessor and a microcontroller ? 5
 ii) Explain the architecture of embedded operating system. 5
 OR
- b) i) What are properties, functions and uses of watchdog timer ? 5
 ii) Which are the categories of embedded operating systems ? 5
17. a) Briefly summarize the Components of an Embedded System with examples. 10
 OR
- b) i) Discuss the different addressing modes of PIC microcontroller with suitable example. 5
 ii) Write short note on PC add-on cards and their uses. 5