|		R5965	**Total Pages: 2**
Reg No.:_____		Name:_____	

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018

Course Code: CS305

Course Name: MICROPROCESSORS AND MICROCONTROLLERS

Max. Marks: 100 | Duration: 3 Hours

PART A

		Answer all questions, each carries 3 marks.	Marks
1		Usage of BHE and A0 signals- 2 marks 2 memory cycles – 1 mark	(3)
2		a) MOV [DI], AL – 02230+0CCC= 02EFCH – 1.5 marks b) MOV [SI][56H], BL – 02230 + 1234+56= 034BAH – 1.5 marks	(3)
3		inter-segment CALL (1.5 marks) intra-segment CALL(1.5 marks)	(3)
4		a) ASSUME – 1 mark b) EQU - 1 mark c)OFFSET – 1 mark	(3)

PART B

		Answer any two full questions, each carries 9 marks.	
5		Diagram – 4 Marks Explanation of signals – 5 marks	(9)
6		Any Nine addressing modes with example – 1 mark each.	(9)
7		Correct program – 9 marks	(9)

PART C

		Answer all questions, each carries 3 marks.	
8		Type 1- single step – TF=1 - 1 mark Type 2- NMI high - 1 mark Type 3- Breakpoint - 1 mark	(3)
9		8086 interrupt acknowledgement cycle – explanation – 3 marks	(3)
10		I/O mapped I/O – 1.5 marks Memory mapped I/O- 1.5 marks	(3)
11		scanned keyboard mode with 2-key lockout explanation – 3 marks	(3)

PART D

		Answer any two full questions, each carries 9 marks.	
12		Diagram – 4 marks Explanation – 5 marks	(9)
13	a)	IVT explanation- 1 mark type 7 Interrupt vector table address 7*4 = 28 = 1C H - 2 marks 0000:001C -1314 (IP value) – 1 marks 0000:001E – 1112 (CS value) – 1 marks	(5)
	b)	Control word format with BSR mode -1 mark IO mode - 3 marks	(4)
14		Diagram – 5 marks Memory map – 4 marks	(9)

PART E				
Answer any four full questions, each carries 10 marks.				
15	a)	criteria for selection – 4 marks		(4)
	b)	Functions of various I/O ports – Port0 , port2 – 2marks Port1- 1 mark Port 3 – 3 marks		(6)
16	a)	EA signal		(1)
	b)	Organization of Internal RAM – 5 marks		(5)
	c)	SP – 8 bit register - 1 mark Explanation of PUSH and POP – 3 marks		(4)
17	a)	Explanation – 3 marks		(3)
	b)	Explanation – 5 marks Order of priority – 2 marks		(7)
18		All addressing modes with examples- 10 marks		(10)
19	a)	LCALL - 1 mark ACALL – 1 mark		(2)
	b)	Correct program – 6 marks		(6)
	c)	No Justification – 2 marks		(2)
20		Architecture – diagram – 2 marks Explanation -4 marks Modes of operations – 4 marks		(10)
*****				
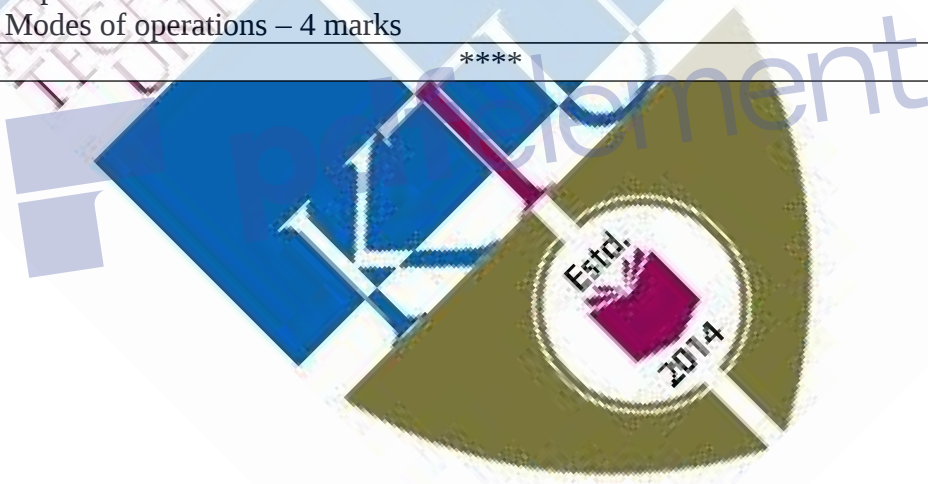
Question Paper Pattern

1. There will be *five* parts in the question paper – A, B, C, D, E
2. Part A
   a. Total marks : 12
   b. *Four* questions each having *3* marks, uniformly covering modules I and II; All *four* questions have to be answered.
3. Part B
   a. Total marks : 18
   b. *Three* questions each having *9* marks, uniformly covering modules I and II; *Two* questions have to be answered. Each question can have a maximum of three subparts.
4. Part C
   a. Total marks : 12
   b. *Four* questions each having *3* marks, uniformly covering modules III and IV; All *four* questions have to be answered.
5. Part D
   a. Total marks : 18
   b. *Three* questions each having *9* marks, uniformly covering modules III and IV; *Two* questions have to be answered. Each question can have a maximum of three subparts
6. Part E
   a. Total Marks: 40
   b. *Six* questions each carrying 10 marks, uniformly covering modules V and VI; *four* questions have to be answered.
   c. A question can have a maximum of three sub-parts.
7. There should be at least 60% analytical/numerical questions.