

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016

Subject Code: 2161102**Date: 25/10/2016****Subject Name: Advanced Microprocessor****Time: 10:30 AM to 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Define the following : **07**
- | | | |
|-------------------|---------|-------------------------|
| 1. Delayed Branch | 2. RTOS | 3. Harvard Architecture |
| 4. ARMsd | 5. TLB | 6. Big Endian Memory |
| 7. AMBA-APB | | |
- (b)** (i) Write a note on RISC Design Philosophy. List the features rejected from RISC Design for improved ARM Design. **04**
- (ii) What is CPSR? Draw an approximate format of SPSR register. **03**
- Q.2 (a)** What is exception? List its types with examples. Also explain process of Exception entry & Exception return. **07**
- (b)** What is core Extension? Mention its types and explain in detail with neat sketch. **07**
- OR**
- (b)** What is core? Draw & Explain ARM core data flow mode. **07**
- Q.3 (a)** Explain Stack operation in ARM with it's types in detail. Also explain instructions used for Stack. **07**
- (b)** Compare AHB, ASB & APB buses of AMBA Bus system of ARM Architecture. **07**
- OR**
- Q.3 (a)** Explain the following ARM instruction with examples. **07**
- (i) STMFD (ii) BLX (iii) MOVEQ (iv) CLZ (v) ADDDB (vi) MRS (vii) UMULL
- (b)** Explain Addressing Modes used for ARM data transfer Operation. Explain the types of Base plus offset addressing used for ARM data transfer operation with examples. **07**
- Q.4 (a)** Discuss the thumb programmer's model in brief. Also Explain Thumb Software interrupts instruction. **07**
- (b)** Write a note on Fast Context Switch Extension of MMU. **07**
- OR**
- Q.4 (a)** List the properties of Thumb Instruction Set. Write a note on Thumb Implementation. **07**
- (b)** How Virtual Memory works? Also Explain the components of Virtual Memory System. **07**
- Q.5 (a)** Write a C program to generate saw tooth waveform at the output of DAC. **07**
- (b)** Write an ALP to find the factorial of a given number. **07**
- OR**
- Q.5 (a)** Write an ALP to find the larger of the two 32 bit numbers. **07**
- (b)** Write a C program to demonstrate various numbers on 7 segment display. **07**
