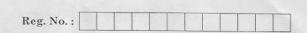
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Question Paper Code: 52859

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Third/Fifth/Sixth Semester

Computer Science and Engineering

CS 6303 - COMPUTER ARCHITECTURE

(Common to: Electronics and Communication Engineering/Electronics and Communication Engineering/Electronics and Instrumentation
Engineering/Instrumentation and Control Engineering/Robotics and Automation
Engineering/Information Technology)

(Regulation 2013)

 ${\it Also common to PTCS~6303-Computer~Architecture~for~Computer~Science~and} \\ {\it Engineering~(Fifth~Semester-Regulation~2014)}$

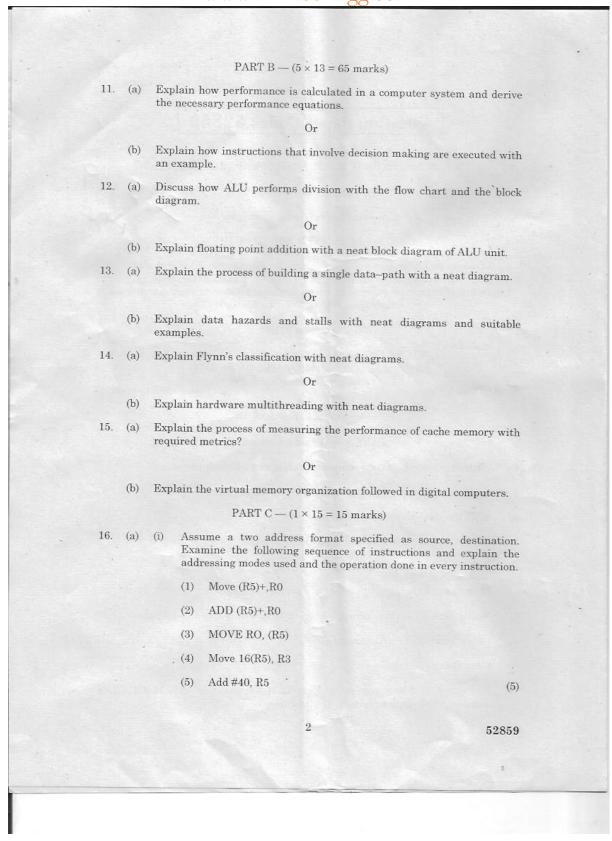
Time: Three hours Maximum: 100 marks

Answer ALL questions.

PART A — $(10 \times 2 = 20 \text{ marks})$

- 1. Write the components of a computer system and list their functions.
- Give the MIPS code for the statement f = (g + h) (i + j).
- 3. State the rules to add two integers.
- 4. Define scientific notation and normalized notation.
- Define edge triggered clocking.
- 6. Identify the hazards with respect to a processor function.
- 7. Neatly sketch the three primary units of dynamically scheduled pipeline.
- Define speculation with example.
- 9. What is miss penalty?
- 10. How many total bits are required for a direct-mapped cache with 16 KB of data and 4-word blocks, assuming a 32-bit address?

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	(ii) Consider the following code segment in C-	
	(ii) Consider the following code segment in C:a = b + e;	
	a = b + e, c = b + f;	
	Here is the generated MIPS code for this segment, assuming all variate in memory and are addressable as off sets from \$t0:	bles
	lw \$t1, 0(\$t0)	
	lw \$t2, 4(\$t0)	
	add \$t3, \$t1,\$t2	
	sw \$t3, 12(\$t0)	
	lw \$t4, 8(\$t0)	
	add \$t5, \$t1,\$t4	
	sw \$t5, 16(\$t0)	
	Find the hazards in the preceding code segment and reorder	the
	instructions to avoid any pipeline stalls?	(10)
	Or	
(b)	(i) Analyze the merits and demerits of microprogrammed control	OWAR
	hardwired control.	(7)
	(ii) Analyze and tabulate the major features of programmed I/O, I	MA
	and interrupts.	(8)
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