Student Name:

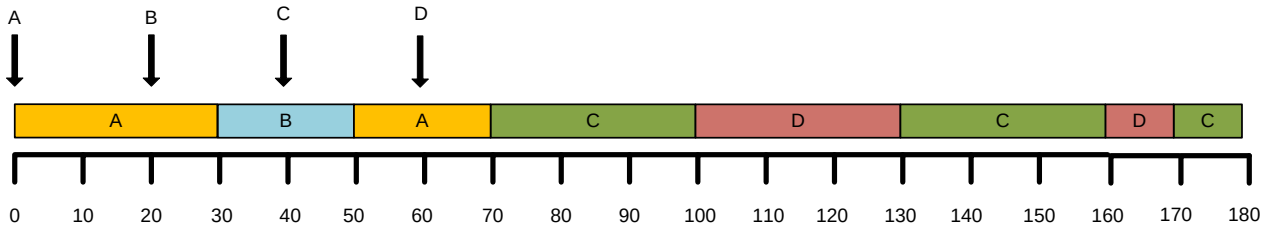
ROBT 305 – Embedded Systems Quiz #3

Answer 5 out of 6 questions. Please provide precise answers.

1. A set of independent tasks A, B, C and D need to execute on a processor

Task	Arrival Time	Execution time	Priority
A	**0**	**50**	**4**
B	**20**	**20**	**1**
C	**40**	**70**	**3**
D	**60**	**40**	**2**

Determine the task schedule for the interval [0, 180] generated by Round Robin (RR) (non-priority) scheduling algorithm. Assume a time quantum, q = 30 time units, and processor context switching time of 0 time units **(1 point)**.



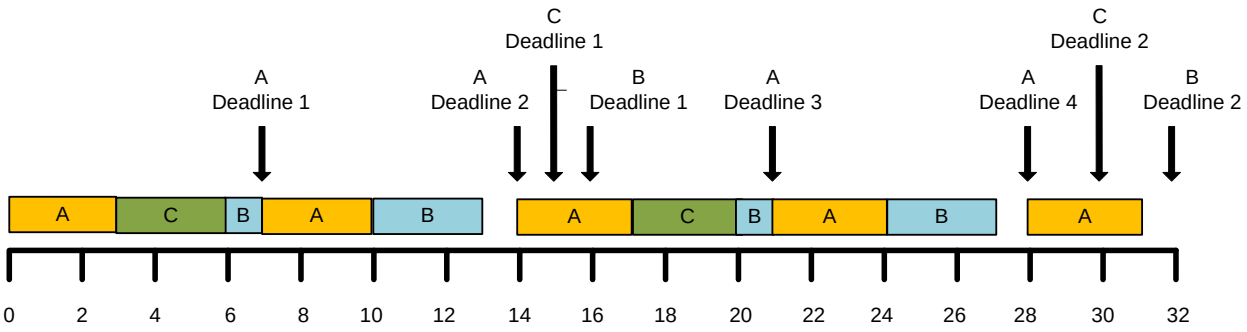
2. What determines the priority of a task in an embedded application with fixed priority? **(1 point)**

A task period determines a fixed priority of the task in the rate-monotonic scheduling

3. A set of independent tasks A, B, C need to execute on a processor

Task	Execution time	Period
A	**3**	**7**
B	**4**	**16**
C	**3**	**15**

Construct the schedule generated by the rate-monotonic (RM) algorithm for the interval [0, 32]. **(2 point)**



4. What is the main difference/advantage of cyclic scheduling over other scheduling algorithms? **(1 point)**

A cyclic scheduling can be implemented in the simple embedded systems without multitasking operating system.