



Biomedical Engineering

**Project Management**  
**Course Code: UNR431**  
**Level: 400**  
**Allowed Time: 2 hours**  
**28/8/2018**  
**Self-Study**  
**Final Exam [50 Marks]**



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**Eight questions are in two pages.**

**Don't use pencil.**

**Answer ALL the questions.**

**Q.1) [5 Marks]**

**Draw a model for an optimum Product/Service Success Criteria.**

**Q.2) [5 Marks]**

**What are the main characteristics of the biomedical project manager?**

**Q.3) [5 Marks]**

**Assuming that you want to rent an electricity generator for your project with a \$200 per day, and you can buy this equipment by the investment cost of \$2000, plus \$20 operating daily cost. What is period of time needed to equal the cost of the lease and the cost of the purchase?**

**If you need the item for 42 days, should you rent or buy it?**

**Q.4) [5 Marks]**

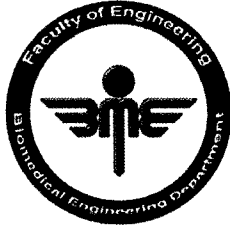
**Benchmarking is a technique used in:**

- a. Inspections
- b. Root cause analysis
- c. Plan quality management
- d. Perform quality control

**Q.5) [5 Marks]**

**You are the project manager for a medical waste burning project. Local residents and environmental groups are opposed to this project. Management agrees to move this project to a different location. This is an example of which one of the following risk responses?**

- a. Passive acceptance
- b. Active acceptance
- c. Mitigation
- d. Avoidance



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**Q.6) [5 Marks]**

**Procurement negotiation is a soft skill sets which is very vital for project manager. Which of the following is not true about conducting procurement negotiation?**

- a. The project manager should be the lead negotiator.
- b. Subjects covered may include responsibilities and authority to make changes.
- c. Contract negotiations may be an independent process with inputs of its own.
- d. Negotiations should clarify the structure, requirements, and other terms of the purchase.

**Q.7) [5 Marks]**

**Explain the role of Total Quality Management (TQM) approaches of KAIZEN, 6 Sigma, & Balanced Score Cards in health care projects.**

**Q.8) [15 Marks]**

**Determine the critical path of the project: Development of new insulin pump, using the data of the table below, assuming that all tasks will start as soon as possible.**

Activity	Description	Dependency	Duration (Day)
A	Initiate the project and determine objectives	-	6
B	Target customers and marketing tool	-	3
C	Select the team	B	7
D	Discuss the alternative ideas of design	A	4
E	Choose the appropriate/optimum idea	B	5
F	Design the full identity of the project	C	9
G	Select the suitable portal of the project	E	3
H	Collect information, and materials	E	25
I	Execute the project	D	35
J	Monitor and control the project	I	26
K	Test the project outcomes	H	17
L	Prepare the appropriate prototype	G,F	7
M	Package, and deliver (close the project)	L,K,J	6

All Best Wishes, Dr. Nabil Shalaby