

**Time : 50 min.**

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**Question 1**

A local car wash charges 3.00 JD per wash or the option of paying 12.98 JD for five washes payable in advance with the first wash. If you normally washed your car once a week and your MAR is 15% compounded weekly :

- (a) What is the rate of return ?**
- (b) Would you accept the option ?**

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**Question 2**

Amman city plan a pipeline to transport water from a distant source to the city. The pipeline will cost 10 millions JD now and have an expected life of 50 years. The city anticipates it will need to keep the water line in service indefinitely. If the city requires 25% rate of return or more, how much should the city collect each year to compensate for the expenses?

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### Question 3

Consider the following alternatives :

	A1	A2	A3
First cost	50	150	110
Uniform annual benefits	28.8	39.6	39.6
Useful life ( Years )	2	6	4
Computed rate of return	10%	15%	16.4%

None of the alternatives can be replaced at the end of its useful life. If the Minimum attractive rate of return is 10%, which alternatives should be selected?

**Solve using annual worth on incremental basis approach!**

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### Question 4

Find the unknown parameter in the following balanced cash flow diagram

