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Jordan University of Science & Technology  
Industrial Engineering Department  
First Exam

Engineering Economy IE341

Student name: \_\_\_\_\_

ID No. \_\_\_\_\_

19<sup>th</sup> March, 2015

Section: 6

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**ANSWERS (USE CAPITAL LETTERS ONLY)**

1	2	3	4	5	6	7	8	9	10	11	12	13
E	C	D	A	E	B	B	C	D	A	B	B	D

Q1. If you borrow \$3000 at 6% simple interest per year for 7 years, how much will you have to repay at the end of the 7<sup>th</sup> year?

- A) \$4,470      B) \$4511      C) \$1260      D) \$1511      E) \$4260

Q2. If you want to have \$40,000 at the end of 5 years from now, how much do you need to deposit today if the interest rate is 15% per year?

- A) \$9943.5    b) \$14915    C) \$19887    D) 24858    E) \$17633

Q3. If you borrow 7,000 today at an interest rate of 8% per year and plan to repay the loan in 6 end-of-year equal payments, what will be your yearly payment?

- A) \$1,963    b) \$1,082    C) \$1,298    D) \$1,514    E) \$1,731

Q4. When 10 end-of-year payments of \$28,951 each were invested into a project, they accumulated to \$400,000 at the end of year 10. Find the effective annual interest rate.

- A) 7%    b) 6%    C) 5%    D) 4%    E) 8%

Q5. If you invest \$25,000 today at a nominal interest rate of 12% compounded monthly, how much would you have at the end of five years from now?

- A) \$54,501    b) \$39,412    C) \$27,251    D) \$36,334    E) \$45,417

Q6. What is the monthly payment on a loan of \$150,000 for five years at a nominal interest rate of 9% compounded monthly?

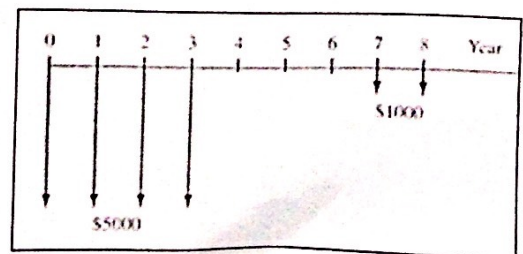
- A) \$2,076    b) \$3,114    C) \$4,152    D) \$1,732    E) \$1,038

Q7. How much do you need to invest in equal annual amounts for the next 10 years if you want to have \$16,000 at the end of year 12? The interest rate is 8% per year for the first 10 years and 10% per year for the last two years.

- A) \$799    b) \$913    C) \$1,027    D) \$537    E) \$685    F) \$412

Q8. The equivalent uniform annual amount in years 1 through 8 using an interest rate of 10% per year for the amounts shown is:

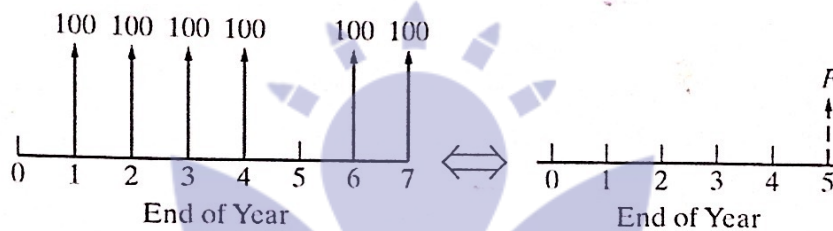
- A) \$18,414    B) \$3,254.8    C) \$3,450.8    D) \$3,621.2    E) \$4,624.3



Q9. If you deposit \$5000 today into an account that pays 12% per year compounded quarterly, after how many years, approximately, will you have \$10,000 on your account?  
 A) 7 years    b) 23 years    C) 9 years    D) 6 years    E) 5 years

Q10. An investment account pays an interest rate of 12% per year. How much should you invest today in this account if you want to receive \$25,000 five years from now and another \$15,000 ten years from now?  
 A) \$19015    B) \$90644.5    C) \$11250    D) \$22,235

Q11. In the following cash flows diagram, Determine the value of  $F$  that makes the two cash flows diagrams equivalent if the interest rate  $i = 12\%$  per year?



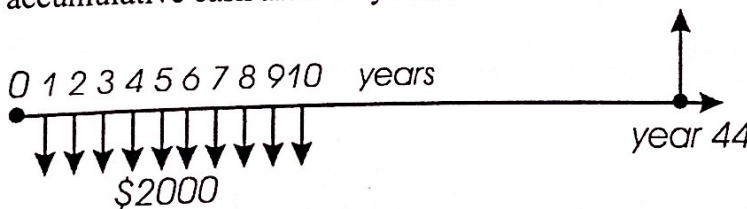
A) \$428    B) \$704    C) \$686    D) \$596    E) \$736

Q12. A sum of \$5,000 has been invested into a certain business and accumulated to \$7,058 at the end of year 4. At the end of what year  $N$  will it accumulate to \$9,960 if the interest rate remains the same? See the cash-flow diagram.



A)  $N=7$     b)  $N=8$     C)  $N=9$     D)  $N=10$     E)  $N=15$

Q13. Consider the following cash flow diagram, if the interest rate is 8% then the accumulative cash after 44 years is:



A) \$28,973    B) \$ 191,149    C) \$564,816    D) \$ 396,645