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NPTEL

Courses » **Time value of money-Concepts and Calculations**

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Unit 4 - Week 3

Course outline

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○ Future Value

○ Annuities- 1 & 2

○ Perpetuity

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Week 4

Week 3 Assignment 1

The due date for submitting this assignment has passed. **Due on 2016-09-28, 23:00 IST.**
As per our records you have not submitted this assignment.

1) Reema have a choice of investing in either of two accounts: *2 points*
• Account A earns an annual rate of 8.16% with annual compounding.
• Account B earns an annual rate of 8% compounded semi-annually.
 She plans to invest Rs.10,000 in one of the accounts today and withdraw the funds 1 year later. In which account she gets more profit?

   ○ In Account A
   ○ In Account B
   ○ Get same profit in both Accounts
   ○ can't say

No, the answer is incorrect.
Score: 0

Accepted Answers:
Get same profit in both Accounts

2) Yogesh deposits Rs. 9,000 today in an account that earns an annual rate of 7.5%   *3 points*
compounded yearly. At the end of 7 years, how much interest on interest will the account have earned?

   ○ Rs. 14931.44
   ○ Rs. 13725.00
   ○ Rs. 1260.44
   ○ Rs. 1206.44

No, the answer is incorrect.
Score: 0

Accepted Answers:
Rs. 1206.44

3) Consider an annuity consisting of three cash flows of Rs.1500 each. Assume a 5% interest   *3 points*
rate. What is the relationship between all present values (Rs.) of annuities if the first cash flow occurs:
(I) today and other two in next two years
(II) One year later from today and other two in next two years
(III) five years later from today and other two in next two years?

   ○ (I) < (II) < (III)
   ○ (I) > (II) > (III)
   ○ (I) = (II) = (III)
   ○ (I) < (II) > (III)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(I) > (II) > (III)

4) Consider the following cash-flow stream in a bank account paying 3% annual interest. What **2 points** is the future value for the given cash flow (Rs.) at the end of 4th year?

○ Zero

○ 1.00

○ -1.57

○ 1.57

No, the answer is incorrect.
Score: 0

Accepted Answers:
1.57

5) A future amount of Rs.1,000 will be due in exactly two years. The obligation can be settled **1 po** today for Rs.790. What is the annual interest rate involved in this arrangement if interest is compounded continuously?

○ 11.79 %

○ 12.00 %

○ 17.02 %

○ 21.71 %

No, the answer is incorrect.
Score: 0

Accepted Answers:
11.79 %

6) A certain amount was invested on Jan 1, 2010 such that it generated a periodic payment of **2 points** Rs.1,100 at the end of each month of the calendar year 2010. The interest rate on the investment was 12% per annum. Calculate the interest earned.

○ Rs.12380.58

○ Rs. 8194.20

○ Rs. 13200.00

○ Rs. 819.42

No, the answer is incorrect.
Score: 0

Accepted Answers:
Rs. 819.42

7) Let's assume 'P' is the Present worth and 'r' is the annual interest rate of an annuity 'A' for **2 points** continuously compounding. If the present worth is equal to annuity and the value of annual interest (r) is equal to inverse of the number of periods (N), for the concept of "annuity for continuously compounding" what will be the correct relation? (Here 'N' is the number of periods)

○ $e^{(1/N+1)} -2e+1=0$

○ $e^{(1/N)} -2e+1=0$

○ $e^{(1/N+1)} +2e+1=0$

○ $e^{(1/N+1)} -2e-1=0$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$e^{(1/N+1)} -2e+1=0$

8) Deepak have choice when subscribing to a magazine for 4 years: he can   **3 points**

a. Pay Rs.100 now for subscription, or
b. Pay Rs. 28 at the end of each year for four years, or

c. Pay Rs. 54 today and Rs. 54 again two years from today.

Which is the best deal for him, the subscriber, if his opportunity cost of funds is 10%?

- ○ case 'a'
- ○ case 'b'
- ○ case 'c'
- ○ case 'a' & 'b'

No, the answer is incorrect.
Score: 0

Accepted Answers:
case 'b'

9) A credit card company charges an annual rate of 12% compounded monthly. This month's **2 poi**
bill is Rs.6000. The minimum payment is Rs.125. Suppose I keep paying Rs.125 each month. How long
will it take to pay off the bill? What is the total interest paid during that period?

- ○ 65 months, Rs. 2250
- ○ 71 months, Rs. 2070
- ○ 62 months, Rs. 2000
- ○ 66 months, Rs. 2250
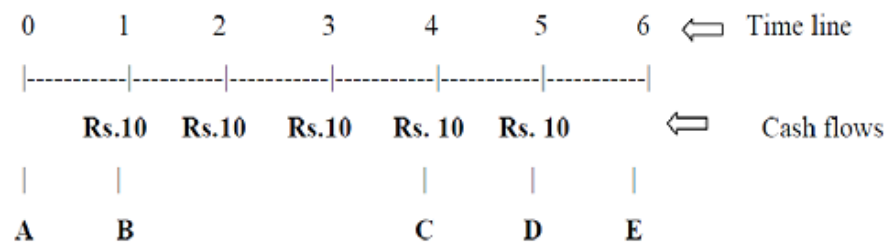
No, the answer is incorrect.
Score: 0

Accepted Answers:
66 months, Rs. 2250

10)Study the time line and accompanying 5-period cash-flow pattern below.   **2 points**

The present value of the 5-period annuity shown above as of _____ is the present value of a 5-
period Ordinary annuity, whereas the future-value of the same annuity as of _____is the future
value of a 5-period Ordinary annuity.

- ○ Point B , Point D
- ○ Point A , Point B
- ○ Point A , Point D
- ○ Point A , Point C

No, the answer is incorrect.
Score: 0

Accepted Answers:
Point A , Point D

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