

**Mathematics of Finance
First Year
English Section**

Questions

Question 1: Simple Interest:

Choose the LETTER that corresponds to the BEST answer:

1- A man deposits \$1000 in a bank that pays an interest rate of 5% semiannually. How much interest the man will receive after two years?

(A)\$200 (B)\$500 (C)\$1200

2- In question 1, if the interest rate was 10% annually. How much his balance account will be in the bank?

(A)\$200 (B)\$1500 (C)\$1200

3- In question 1, if the interest rate was 2.5% quarterly. How much interest the man will receive?

(A)\$250 (B)\$200 (C)\$1200

4- In question 1, how much the man will get if he wants to withdraw his balance after three months?

(A)\$300 (B)\$1200 (C)\$1050

5- In question 1, if the deposit was \$2000. How much interest the man will receive?

(A)\$400 (B)\$1200 (C)\$1400

6- A deposit of \$2000 was made on January 1st 2019 at a bank that gives 10.5% per annum. How much interest will be credited to this account on June 30th 2019?

(A)\$2105 (B)\$105 (C)\$210

7- In question 6, if the interest rate was 5.25% quarterly. How much interest will be credited to this account?

(A)\$2210 (B)\$105 (C)\$210

8- In question 6, how much interest will be credited to this account on December 31st 2019?

- (A) \$2105 (B) \$210 (C) \$105

9- In question 6, how much amount will be credited to this account?

- (A) \$2105 (B) \$105 (C) \$210

10- In question 6, how much amount will be credited to this account on December 31st 2019?

- (A) \$2105 (B) \$210 (C) \$2210

11- How long will it takes a principal to earn interest one-half its value, if the interest rate was 20%?

- (A) 15 years (B) 2.5 years (C) 10 years

12- In question 11, how long it will take if we want the interest to be equal the principal?

- (A) 5 years (B) 2.5 years (C) 10 years

13- In question 11, how long will the period be if the interest rate was 4%?

- (A) 2 years (B) 2.5 years (C) 6 months

14- In question 11, how long will it takes if we want the interest to be one-fifth of the principal?

- (A) 1.5 years (B) one year (C) 6 months

15- In question 11, how long will the period be if the interest rate was 10%?

- (A) 5 years (B) 2.5 years (C) 10 years

16- The interest paid on a loan of \$4000 for 3 months was \$120. Find out the semiannual interest rate?

- (A) 12% (B) 1% (C) 6%

17- In question 16, the interest rate that pays quarterly will be?

- (A) 1.5% (B) 3% (C) 6%

- 18- In question 16, the interest rate that pays annually will be?
(A) 12% (B) 1.5% (C) 6%
- 19- In question 16, if the loan was \$8000 how much the interest rate that pays quarterly will be?
(A) 12% (B) 6% (C) 3%
- 20- A person receives \$300 each 3 months from an investment that pays a quarterly rate of interest of 3%, how much he invested?
(A) \$30000 (B) \$20000 (C) \$10000
- 21- On October 3st, 2018, a merchant borrowed \$1200 at 15%. The loan was repaid on March 14th, 2019. The exact interest due on that date was?
(A) \$66.08 (B) \$67 (C) \$65.9
- 22- In question 21, the ordinary interest due on that date was?
(A) \$66.08 (B) \$67 (C) \$65.9
- 23- The exact interest on 90-day loan of \$2000, if the interest rate is 8% semiannually will be?
(A) \$80 (B) \$67 (C) \$78.9
- 24- In question 23, the ordinary interest will be?
(A) \$80 (B) \$67 (C) \$78.9
- 25- A person deposits \$3000 in a bank that pays 12% interest. Determine how many days the amount of deposit remains if the interest earned is \$75?
(A) 80 days (B) 75 days (C) 0.208 year
- 26- A woman borrowed a certain amount from a bank that charges 18% interest. One hundred days later she paid \$150 as an interest on the loan. How much the capital was?
(A) \$3042 (B) \$3050 (C) \$3000
- 27- A man deposited \$2000 at a bank that pays 12%, how much the balance after 6 months?

(A) \$2120 (B) \$120 (C) \$1880

28- A woman got a loan at 8% semiannual rate of interest. Nine months later she paid \$4480. Find out the principle?

(A) \$4226 (B) \$4000 (C) \$5744

29- A merchant sells a certain commodity for \$1600 cash, or \$2000 due in a year. The interest rate the merchant using in this deal is?

(A) 25% (B) 20% (C) 15%

30- How long will it take an amount to double if invested at 10%% semiannually?

(A) 2 years (B) 1.5 years (C) 5 years

31- In question 30, if the interest rate is 20% annually, how long will it take?

(A) 2 years (B) 1.5 years (C) 5 years

32- A certain item is sold for \$1000 cash. If the interest rate is 16%, how much a buyer should pay for it if such a payment made 6 months from now?

(A) \$1160 (B) \$1080 (C) \$1744

33- In question 32, how much will the payment be if it made a year from now?

(A) \$1160 (B) \$1080 (C) \$1744

34- A refrigerator is sold for \$3600 cash or \$4000 due in 9 months. If money is worth 12% which offer is better for the buyer?

(A) The first (B) The second (c) Both of them

35- Compute the simple discount on a debt of \$2000 due in 6 months if the interest rate is 12%

(A) \$120 (B) \$2120 (C) \$113.21

36- A debt of \$3000 is due in a year. The lender offers a simple discount of \$72 upon the payment of such a debt 3 months before maturity. Find the interest rate?

(A) 9.8% **(B) 9.6%** **(c) 9.5%**

37- A debt of a certain amount is due after 15 months. Nine months before its due date, the debtor offers to pay it off and the lender agrees on the basis of 12% interest rate. The simple discount to \$165.14, find the maturity value of the det?

(A) \$1835 **(B) \$2000** **(c) \$1835**

38- A note of \$2000 due in 4 months is discounted at a bank that charges 12% discount rate. Find the bank discount?

(A) \$90 **(B) \$100** **(c) \$90**

39- An obligation of \$2400 is due on July 11, 2019. The obligation was discounted at a bank on February 11, 2019 and the proceeds were \$2220. Determine the discount rate?

(A) 18% **(B) 17%** **(c) 19%**

40- A debt is due a year from today. The debt was discounted at a bank that charges 16% discount rate, and the creditor got \$3024. Find the maturity value of the debt?

(A) \$2607 **(B) \$2120** **(c) \$3600**

41- Find the accumulated value of an ordinary simple annuity consisting of 4 quarterly payments of \$250 each if money is worth 12% per annum.

(A) \$1045 **(B) \$955** **(c) \$1540**

42- A couple deposits \$500 at the end of every 3 months into a saving account that pays interest at interest rate of 11%. They made the first deposit on March 1, 2012. How much money will they have in the account just after they make their deposit on September 1, 2015?

(A) \$5652.5 **(B) \$8347.5** **(c) \$7000**

43- Mr. Simpson deposits \$525 every 3 month for 4 years with simple interest rate 15% annum find his balance, If the deposit made at the end of the period?

(A) \$2362.5 **(B) \$8400** **(c) \$10762.5**

44- In question 46, find his balance If the deposit made at the beginning of the period?

(A) \$11077.6 (B) \$8400 (c) \$10762.5

45- A man wants to accumulate a fund. He deposits \$300 on February 1, 2017, and his plan calls for the deposit to be accumulated on February 1, 2018. In a bank, that pays 10% per annum. Find the size of the deposit if he makes the deposits at the end of every 2 months?

(A) \$11077.6 (B) \$1852.5 (c) \$1837.5

46- In question 48, Find the size of the deposit if he makes the deposits at the beginning of every 2 months?

(A) \$1852.5 (B) \$1852.5 (c) \$1837.5

47- A man deposits annuity every beginning of 3 month with interest rate of 14% after two years he found his balance was \$1389. What his periodical deposit was?

(A) \$100 (B) \$150 (c) \$200

48- An ordinary annuity payable \$150 semiannual for 3 years, it accumulated \$990. What the interest was?

(A) 9% (B) 8% (c) 10%

49- An annuity its periodic deposit \$300 payable each 3 month for 2 years with discount rate 9% annually calculate the present value of the annuity if it is ordinary one?

(A) \$2400 (B) \$2211 (c) \$2157

50- In question 52, calculate the present value of the annuity if it is due one?

(A) \$2211 (B) \$2643 (c) \$2157

Question 2: Compound Interest:

Choose the LETTER that corresponds to the BEST answer:

1- Find the compound amounts of \$2500, invested at 6% converted quarterly for 5 years.

(A) \$3367.14 (B) \$36713 (c) \$2157

2- A principal of \$1000 is deposited at 6% for 10 years. What will be the compound interest if the interest is compounded annually?

(A) \$1790.85 (B) \$790.85 (c) \$7157

3- In question 2, compute the amount if the interest is compounded annually?

(A) \$1790.85 (B) \$790.85 (c) \$7157

4- In question 2, if the interest compounded semiannually, compute the compound interest if the interest rate is compounded semiannually?

(A) \$806.11 (B) \$790.11 (c) \$7157

5- In question 2, compute the amount if the interest is compounded semiannually?

(A) \$806.11 (B) \$1806.85 (c) \$7909.85

6- A bank pays 7.8% compound quarterly on savings accounts. A woman puts \$5000 into such account on July 1, 2013. Find the amount in the account on January 1, 2018?

(A) \$3578.45 (B) \$8806.85 (c) \$7078.48

7- A depositor planned to leave \$2000 in a savings and loan association paying 5% compounded semiannually for a period of 5 years. At the end of 2½ years the depositor had to withdraw \$1000. What amount will be in the account at the end of the original 5-year period?

(A) \$1262.82 (B) \$262.82 (c) \$2078.48

8- Find the present value of \$5000 due in 4 years if money is worth 8% compounded semiannually.

(A) \$3578.45 (B) \$3806.85 (c) \$3653.45

9- Find the present value of \$7500 due in 4 years if money is worth 14% compounded monthly.

(A) \$4297.98 (B) \$3806.85 (c) \$3653.45

10- A note with a maturity value of \$1000 is due in 3 years and 8 months. What is its present value at 6% compounded semiannually?

(A) \$805.04

(B) \$3806.85

(c) \$3653.45