PREFACE

CH 4 Time Value Of Money: Concepts: Why Interest is Paid?

Opportunity Cost:	Time value of money:	Inflation:	Risk Factor:	Liquidity Preference:
(Economics me Padha hai!) The lender has a choice between using his money in different investments. If he chooses one he forgoes the return from all others. In other words lending incurs an opportunity cost due to the possible alternative uses of the lent money.	Time value of money means that the value of a unity of money is different in different time periods. The sum of money received in future is less valuable than it is today. In other words the present worth of money received after some time will be less than a money received today. Since a money received today has more value rational investors would prefer current receipts to future receipts. If they postpone their receipts they will certainly charge some	Most economies generally exhibit inflation. Inflation is a fall in the purchasing power of money. Due to inflation a given amount of money buys fewer goods in the future than it will now. The borrower needs to compensate the lender for this. Moderate inflation is good.	There is always a risk that the borrower will go bankrupt or otherwise default on the loan. Risk is a determinable factor in fixing rate of interest. A lender generally charges more interest rate (risk premium) for taking more risk.	People prefer to have their resources available in a form that can immediately be converted into cash rather than a form that takes time or money to realize.

money i.e. interest.		

Vocabulary:

Abbreviation	Full Form	Interpretation
P or PV	Principal / Present Value	आज एक बार पैं से मिले या फिर आज एक बार पैं व
A or FV	Accumulated Balance **or** Amount = Principal + Interest **or** Future Value	भविष्य मे एक बार पैं से वापस दिये या फिर भविष्य मी एक बार पैं से वापस मिले
I	value of Interest	
R%	Rate of Interest / Opportunity Cost / Internal Rate of Return / Discounting Rate / Return on Investment	Expressed on per annum basis
N or T	Time Period, years / Months	

Sr. No	Question	Formula – write it in you own handwriting	Cal pe
	Single Cash Flow Questions	आज एक बार यें से मिले और भविष्य मे एक बार यें से वापस दिये **या फिर** आज एक बार यें से दिये / और भविष्य मी एक बार यें से वापस मिले	
Single Cashflow – Simple Interest Question (WARM UP)			
1.	Calculate simple interest from Give information: Interest @ 10 % pa on 10000/- for 5 years on SI Interest @ 5 % pa on 10000/- for 10 years on SI Interest @ 7 % pa on 20000/- for 10 years on SI		
2.	Calculate Time under SI In how many years would the amount of Rs. 10000 will be doubled if SI @ 10% in what time period Rs. 20000 will become 25000 if interest rate is 5% pa SI		
3.	Calculate Rate under SI Rs 1,00,000 becomes Rs. 1,30,000 in 2		

	years @ SI, Calculate R%		
4.	Rs. 4000 have been invested @ 7% pa SI for 3 years. How much will be the Interest Rs._____ ? What will be the amount at the end of 3rd Ye		
5.	Rs. 4000 have been invested @ 7.5% pa SI for 3.5 years. How much will be the Interest Rs._____ ? What will be the amount at the end of 3rd Year.		
6.	Calculate principal Amount, IF Amount received at the end of 4 years is Rs. 1400, Simple Interest payable is 10% pa		
7.	Amount receivable at the end of 6th year is RS. 3125/-, rate of interest is 5% simple interest, calculate amount invested initially?		
8.	In how many year Rs. 7000 will become RS. 8890, SI @ 9% pa		
9.	How much interest will be earned on Rs.		

	2000 at 6% simple interest for 2 years?		
10.	Sania deposited Rs. 50,000 in a bank for two years with the interest rate of 5.5% p.a. How much interest would she earn? what will be the final value of investment?		
11.	Sachin deposited Rs. 1,00,000 in his bank for 2 years at simple interest rate of 6%. Howmuch interest would he earn? How much would be the final value of deposit?		
12.	Find the rate of interest if the amount owed after 6 months is Rs. 1050, borrowedamount being Rs. 1000.		
13.	Rahul invested Rs. 70,000 in a bank at the rate of 6.5% p.a. simple interest		

	rate. He received Rs. 85,925 after the end of term. Find out the period for which sum was invested by Rahul.		
14.	Kapil deposited some amount in a bank for 7 ½ years at the rate of 6% p.a. simpleinterest. Kapil received Rs. 1,01,500 at the end of the term. Compute initial deposit of Kapil.		
15.	A sum of Rs. 46,875 was lent out at simple interest and at the end of 1 year 8 months the total amount was Rs. 50,000. Find the rate of interest percent per annum		
16.	What sum of money will produce Rs. 28,600 as an interest in 3 years and 3 months at 2.5% p.a. simple interest?		
17.	In what time will Rs. 85,000 amount to		

	Rs. 1,57,675 at 4.5 % p.a.?		
18.	S.I on Rs. 3,500 for 3 years at 12% p.a. is ____ (a) Rs. 1,200 (b) Rs. 1,260 (c) Rs. 2,260 (d) none of these		
19.	P = 5,000, R = 15, T = 4 ½ using I = PRT/100, I will be (a) Rs. 3,375 (b) Rs. 3,300 (c) Rs. 3,735 (d) none of these		
20.	If P = 5,000, T = 1, I = Rs. 300, R will be (a) 5% (b) 4% (c) 6% (d) none of these		
21.	If P = Rs. 4,500, A = Rs. 7,200, than Simple interest i.e. I will be (a) Rs. 2,000 (b) Rs. 3,000 (c) Rs. 2,500 (d) 2,700		
22.	P = Rs. 12,000, A = Rs. 16,500, T = 2 ½		

	years. Rate percent per annum simple interestwill be 15% (b)12% 10% (d) none of these		
23	P = Rs. 10,000, I = Rs. 2,500, R = 12 ½% SI. The number of years T will be 1 ½ years (b) 2 years (c) 3 years (d) none of these		
24.	P = Rs. 8,500, A = Rs. 10,200, R = 12 ½ % SI, t will be. (a) 1 yr. 7 mth. (b) 2 yrs. (c) 1½ yr. (d) none of these		
25.	The sum required to earn a monthly interest of Rs. 1,200 at 18% per annum SI is (a) Rs. 50,000 (b) Rs. 60,000 (c) Rs. 80,000 (d) none of these		❤️ uity
26.	A sum of money amount to Rs. 6,200 in 2 years and Rs. 7,400 in 3 years. The principal and rate ofinterest are (a) Rs. 3,800, 31.58% (b) Rs. 3,000, 20%		

	(c) Rs. 3,500, 15% (d) none of these	
27.	A sum of money doubles itself in 10 years. The number of years it would triple itself is 25 years. (b) 15 years. (c) 20 years (d) none of these	❤Dia gram se Solve karna
28.	what time will ₹ 85,000 amount to ₹ 1,57,675 at 4.5% p.a.? (a) 20 years (b) 15 years (c) 22 years (d) 19 years	
29.	₹ 3,52,000 will produce ₹ 28,600 interest in – years at 2.5% p.a. simple interest (a) 2 years 2 months (b) 3 years 3 months (c) 4 years 4 months (d) 5 years 5 months	
30.	A sum of money doubles itself in 25 years.	

	The number of years it would trebles itself is- (a) 50 years (b) 37.5 years (c) 75 years (d) None of these		
31.	A person borrowed ₹ 4,000 and after 6 months the amount paid was ₹ 4,050. Find the rate of interest. (a) 5% (b) 25% (c) 2.5% (d) 20%		
32.	₹ 80,000 is invested to earn a monthly interest of ₹ 1,200 at the rate of - p.a. SI. (a) 12% (b) 12% (c) 15% (d) 20%		
33.	A sum of ₹ 46,875 was lent out at simple interest and at the end of 1 yr and 8 months, the total amount was ₹ 50,000. Find the rate of interest.		

	(a) 4% (b) 5% (c) 4.5% (d) 6%		
34.	A sum doubles itself in 10 years. Find the interest rate. (a) 10% (b) 12% (c) 15% (d) 20%		
35.	If a sum triples in 15 yrs at Simple rate of interest then the rate of interest per annum will be (a) 13.0% (b) 13.3% (c) 13.5% (d) 18%		
36.	If the interest on ₹ 2,400 be more than the interest on ₹ 2,000 by ₹ 64 in 4 years, rate of interest is- (a) 5 % (b) 4 % (c) 3 1/3% (d) 6%		
37.	A certain sum of money at simple interest amounts to ₹ 2,800 in 2 years and to ₹ 3,220 in 5 years. The rate of interest p.a.		

is-

(a) 6 1/3 %   (b) 5 5/9 %   (c) 2 ¼ %   (d) 6 1/8 %

| 38. | What sum of money will produce ₹ 28,600 interest in **3 years & 3 months** at 2.5 % p.a. Simple interest?

(a) ₹ 3,52,000   (b) ₹ 3,65,000

(c) ₹ 3,25,000   (d) ₹ 3,56,000 | | |

| 39. | Find out the capital required to earn a monthly interest of ₹ 800 p.m. at **5 %** at simple interest?

(a) ₹ 1,87,000   (b) ₹ 40,000

(c) ₹ 1,28,000   (d) ₹ 1,92,000 | | |

| 40. | Interest on certain sum of money 2 ½ years at 3 ¼ % p.a. is ₹ 390. The sum is-

(a) ₹ 4,800   (b) ₹ 2,100

(c) ₹ 4,700   (d) ₹ 4,900 | | |

| 41. | A sum was put at simple interest, at a certain rate for **3 years**. Had it been put at 1% higher rater it would have fetched ₹ 63 more. The sum is- | | |

	(a) ₹ 2,400 (b) ₹ 2,200 (c) ₹ 2,100 (d) ₹ 2,480		
42.	A sum of money that will give ₹ 1, as interest per day at 10 % p.a. Simple interest is (a) ₹ 3,800 (b) 3,000 (c) ₹ 3,650 (d) ₹ 3,500		
43.	A sum of money amounts to ₹ 795 in 4 years and ₹ 850 in 5 years. The sum is — (a) ₹ 3,800 (b) ₹ 3,000 (c) ₹ 3,650 (d) ₹ 3,500		
44.	Two equal amounts of money are deposited in two different banks each at 12% p.a. for 8 years and 3.5 years respectively. If the difference between their interest is ₹ 540, find each sum. (a) ₹ 1,200 (b) ₹ 1,000 (c) ₹ 1,400 (d) ₹ 1,350		
45.	A sum of money kept in a bank amounts to ₹ 1,000 in 4 years and ₹ 1,400 in 12 years.		

The sum and interest carried every year are-

 (a) 600, 133   (b) 800, 50

 (c) 750, 150   (d) 850, 75

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46. No. of years a sum 4 times itself at 12% p.a. at simple interest

(a) 20

 (b) 21

(c) 25

(d) 30

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47. A sum of ₹ 44,000 is divided into 3 parts such that the corresponding interest earned after 2 years, 3 years and 6 years may be equal at the rate of simple interest are 6% p.a., 8% p.a. 6% p.a. respectively. Then the smallest part of the sum will be:

(a) ₹ 4,000   (b) ₹ 8,000

(c) ₹ 10,000   (d) 12,000

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48. A certain sum of money was invested at S.I. for 3 years. If it has invested at rate 7%

	higher, then the interest have been 882/- more, then he sum is (a) ₹ 12,600 (b) ₹ 6,800 (c) 4,200 (d) 2,800	
49.		

Single Cashflow – Compound Interest Question

50.	Saina deposited Rs. 1,00,000 in a nationalized bank for three years. If the rate of interest is 7% p.a., calculate the interest that bank has to pay to Saina after three years if interest is compounded annually. Also calculate the amount at the end of third year.	

Calculate Interest (Warm UP)

51.	Interest @ 10 % pa on 10000/- for 5 years on CI	
52.	Interest @ 5 % pa on 10000/- for 10 years on CI	

53.	Interest @ 7 % pa on 20000/- for 10 years on CI		
	Calculate No Of Years / Time Period		
54.	IF Rs. 10,000 becomes 12,155 on CI @ 5% pa compounded annually. Calculate Time period?		
	Calculate Rate of Interest		
55.	IF Rs. 10,000 becomes 12,155 in 4 years if interest is on CI, calculate the rate?		
56.	Calculate the Rate of interest if FV is 18150 & Present value is 15000 & Time is 2 yrs		
57.	an amount invested @ 10% pa CI, it		

	becomes 12100 in 2 years. Calculate the initial value		
58.	If Interest for 2nd year is 1100 & Third year is 1210, find out the Rate on interest & initial amount of investment		
59.	What is the amount of Rs. 10,000 @ 10%pa compounded annually after 5 years		
60.	What would the interest if CI @ 15% pa for two years on 20,000		
61.	What is the FV of Rs. 10,000 invested for 5 years @ 9% pa compounded annually?		
62.	You need 499125 Rs in next 3 years, What initial amount is required to be invested @10% CI compounded annually		

63.	If Rs 5,00,000 invested @ 12% pa for three years what interest it will fetch at the end?		
64.	What is the amount of Rs. 10,000 @ 10%pa compounded semi annually after 5 years		
65.	What would the interest if CI @ 15% pa for two years on 20,000, compunding half yearly		
66.	What is the FV of Rs. 10,000 invested for 5 years @ 9% pa compounded semi annually		
67.	You need 499125 Rs in next 3 years, What initial amount is required to be invested @10% CI compounded six monthly		

68.	If Rs 5,00,000 invested @ 12% pa six monthly compounding for three years what interest it will fetch at the end?		
69	What is the amount of Rs. 10,000 @ 10%pa compounded semi annually after 5 years		
70	What would the interest if CI @ 15% pa for two years on 20,000		
71	What is the FV of Rs. 10,000 invested for 5 years @ 9% pa compounded annually		
72	You need 499125 Rs in next 3 years, What initial amount is required to be invested @10% CI compounded annually		

73	If Rs 5,00,000 invested @ 12% pa for three years what interest it will fetch at the end?		
74.	On what sum will the compound interest at 5% per annum for two years compounded annually be Rs. 1,640?		
75.	The compound interest on half-yearly rests on Rs. 10,000 the rate for the first and second years being 6% and for the third year 9% p.a. is Rs. _____ (a) 2,200　　　　　(b) 2,287 (c) 2,285　　　　　(d) None		
76.	What annual rate of interest compounded annually doubles an investment in 7.5 years?		

| 77. | In how many years will a sum of money double at 5% p.a. compound interest?
15 years 3 months   (b) 14 years 2 months
(c) 14 years 3 months   (d) 15 years 2 months | | |

78.	In how many years a sum of money trebles at 5% p.a. compound interest payable on half-yearly basis? 18 years 7 months (b) 18 years 6 months (c) 18 years 8 months (d) 22 years 3 months	
	Multiple Times Compounding in a Year	R ko DIVID karna, N ko Multiply Karna
79	Rs. 2,000 is invested at annual rate of interest of 10%. What is the amount after two years if compounding is done	

(a) Annually

(b) Semi-annually

(c) Quarterly

(d) monthly.

| 80. | Determine the compound amount and compound interest on Rs. 1000 at 6% compounded semi-annually for 6 years. | | |

81.	Compute the compound interest on Rs. 4,000 for 1½ years at 10% per annum compounded half- yearly				

82. **Practice Question:**

P = 500000; R = 9% p.a.

Compounded

Annually

Semi Annually

Quarterly

Monthly

N= 1 month till N = 12 Months

N	Annually	Semi Annually	Quarterly	Monthly
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

83 In what time will Rs. 8,000 amount to Rs.

	8,820 at 10% per annum interest compounded half-yearly?		
84	Find the rate percent per annum if Rs. 2,00,000 amount to Rs. 2,31,525 in 1½ year interest being compounded half-yearly.		
85	A certain sum invested at 4% per annum compounded semi-annually amounts to Rs. 78,030 at the end of one year. Find the sum.		
86	16,000 invested at 10% p.a. compounded		

	semi-annually amounts to Rs. 18,522. Find the time period of investment.		
87	A person opened an account on April, 2011 with a deposit of Rs. 800. The account paid 6% interest compounded quarterly. On October 1 2011 he closed the account and added enough additional money to invest in a 6 month time-deposit for Rs. 1,000, earning 6% compounded monthly. How much additional amount did the person invest on October 1? What was the maturity value of his time deposit on April 1 2012? How much total interest was earned?		
88	Interest rate is 10% pa, Calculate Effective Rate of Interest in the Following case Compounding done semi annually Compounding done Quarterly		

	Compounding done Monthly		
	Compounding done Annually		
89	If Rs 15000 have been invested for 6 months @ 9% pa compounded monthly, calculate Interest receivable at the end of 6 months interest compounded annually Semi annually Quarterly		
90	Rs. 5,000 is invested in a Term Deposit Scheme that fetches interest 6% per annum compounded quarterly. What will be the interest after one year? What is effective rate of interest?		
91	Find the amount of compound interest and		

	effective rate of interest if an amount of Rs. 20,000 is deposited in a bank for one year at the rate of 8% per annum compounded semi annually.		
92	Which is a better investment 3% per year compounded monthly or 3.2% per year simple interest?		
93	If P = Rs. 1,000, R = 5% p.a, n = 4; What is Amount and C.I. is		
94	Rs. 100 will become after 20 years at 5% p.a compound interest of (a) Rs. 250 (b) Rs. 205 (c) Rs. 165.33 (d) none of these		

| 95 | a. The effective rate of interest corresponding to a nominal rate 3% p.a payable half yearly is

(a) 3.2% p.a   (b) 3.25% p.a

(c) 3.0225% p.a   (d) none of these

b. The effective rate of interest corresponding a nominal rate of 7% p.a convertible quarterly is

(a) 7% (b) 7.5%

(c) 5% (d) 7.18% | | |
| 96 | For a 10-year deposit, what interest rate payable annually is equivalent to 5% interest payable quarterly?

(a) 5.1%   (b) 4.9%

(c) 6.0%   (d) None of these | | |

Depreciation

97	A machine is depreciated at the rate of 20% on reducing balance. The original cost of the machine was Rs. 1,00,000 and its ultimate scrap value was Rs. 30,000. The effective life of the machine is (a) 4.5 years (appx.) (b) 5.4 years (appx.) (c) 5 years (appx.) (d) none of these
98	The useful life of a machine is estimated to be 10 years and cost Rs. 10,000. Rate of depreciation is 10% p.a. The scrap value at the end of its life is (a) Rs. 3,486.78 (b) Rs. 4,383 (c) Rs. 3,400 (d) none of these
99	A machine depreciates at 10% of its value at the beginning of a year. The cost and

scrap value realized at the time of sale being Rs. 23,240 and Rs. 9,000 respectively. For how many years the machine was put to use? (a) 7 years (b) 8 years (c) 9 years (d) 10 years		
100	A machine worth Rs. 4,90,740 is depreciated at 15% on its opening value each year. When its value would reduce to Rs. 2,00,000? (a) 4 years 6 months (b) 4 years 7 months (c) 4 years 5 months (d) 5 years 7 months approximately	
101	A machine worth Rs. 4,90,740 is depreciated at 15% of its opening value each year. When its value would reduce by 90%? (a) 11 years 6 months (b) 11 years 7 months	

	(c) 11 years 8 months (d) 14 years 2 months approximately	
102	The value of furniture depreciated by 10% a year, if the present value of the furniture in an office is Rs. 21870, calculate the value of furniture 3 years ago. (a) Rs. 30,000 (b) Rs. 40,000 (c) Rs. 35,000 (d) Rs. 50,000	
103	Calculate Rate of Depreciation under WDV Method: A Machine of Rs. 1,00,000 depreciated for 4 years on WDV method, WDV at the end of 4th year 52,200. Calculate Rate of Depreciation charged?	Do not use any other Formula, use only CI wala Formula with -ve Rate. Applicable for Company Act Also.
104	If A = Rs. 1,000, n = 2 years, R = 6% p.a	

	compound interest payable half-yearly, then principal (P) is		
105	The population of a town increases every year by 2% of the population at the beginning of that year. The number of years by which the total increase of population be 40% is_____ (CAGR) (a) 7 years (b) 10 years (c) 17 years (app) (d) none of these		
106	The annual birth and death rates per 1,000 are 39.4 and 19.4 respectively. The number of years in which the population will be doubled assuming there is no immigration or emigration is (a) 35 years. (b) 30 years. (c) 25 years (d) none of these (CAGR)		
107	The present value of Rs. 10,000 due in 2 years at 5% p.a. compound interest when the interest is paid on yearly basis is Rs. _____ .		

108	The present value of Rs. 10,000 due in 2 years at 5% p.a. compound interest when the interest is paid on half-yearly basis is Rs. ___ .		
109	Suppose the revenues of a company for four years, V(t) in the above formula, have been	==CAGR ka Formula maat use karo, CI ka Formula Use Karo!==	
	Year 2013 2014 2015 2016 Revenues 00 20 60 210 Calculate Compound annual Growth Rate.		
110	Samsung Mobile Phone division provides you following data of Their Sales Year 2016 2017 2018 2019 Units 0000 2000 4000 1000 Calculate CAGR 2016 to 2019 (default if Que is silent) 2016-2017 2016-2018 2017-2018 2018-2019		

	2017-2019		
	Components of Interest Rate Real Rate Inflation Risk	Real + Inflation = Nominal Rate of Interest Real + Risk = Risk Adjusted Real Rate Nominal Rate of Interest + Risk or A +B +C = Risk Adjusted Nominal	
111	Real Rate 6% p.a. Inflation 3% p.a. Risk 4% p.a. Calculate All the Rates (WARM UP)		
112	Real Rate 6% p.a. Inflation 1% p.a. Risk 4% p.a. The effective rate if interest corresponding a nominal rate calculated from above. compounded quarterly is- (a) 7 % (b) 7.5 % (c) 7.19 % (d) None of these		
113	Find the compound interest and effective rate of interest if an amount of ₹ 20,000 is deposited in a bank for 1 year at the rate of 8 % p.a. compounded semi-annually.		

	(a) ₹ 1426, 7.56% (b) ₹ 1632, 8.16% (c) ₹ 1326, 7.35% (d) ₹ 1744, 8.55%		
114	Ram is confused whether to invest to 9% p.a. compounded monthly or 9.25% p.a. SI. Given that (1+0.0075)12 = 1.09380690. He decided to find effective rate of interest which is- (a) 9% (b) 9.25 % (c) 9.38% (d) None of these		
115	The C.I on Rs. 4,000 for 6 months at 12% p.a payable quarterly is (a) Rs. 243.60 (b) Rs. 240 (c) Rs. 243 (d) none of these		
116	If A = Rs. 1,000, n = 2 years, R = 6% p.a compound interest payable half-yearly, then principal (P) is (a) Rs. 688.50 (b) Rs. 885		

	(c) 800 (d) none of these		
117	The C.I on Rs. 16000 for 1½ years at 10% p.a payable half -yearly is (a) Rs. 2,222 (b) Rs. 2,522 (c) Rs. 2,500 (d) none of these		
118	The C.I on Rs. 40000 at 10% p.a for 1 year when the interest is payable quarterly is (a) Rs. 4,000 (b) Rs. 4,100 (c) Rs. 4,152.51 (d) none of these		
119	The difference between C.I and S.I on a certain sum of money invested for 3 years at 6% p.a is Rs. 110.16. The principle is (a) Rs. 3,000 (b) Rs. 3,700 (c) Rs. 12,000 (d) Rs. 10,000	Equations Bana k solve karna hai	

120	The difference between the S.I and the C.I on Rs. 2,400 for 2 years at 5% p.a is (a) Rs. 5 (b) Rs. 10 (c) Rs. 16 (d) Rs. 6	Equations Bana k solve karna hai
121	The difference between compound and simple interest at 5% per annum for 4 years on Rs. 20,000 is Rs. (a) 250 (b) 277 (c) 300 (d) 310	
	Multiple Cashflows: Future Value of Annuity	Future Value of Annuity, Sinking Funds आज से बार बार पें से दिये और भविष्य मे एक बार पें से वापस मिले
122	You invest Rs. 3000 in a two year investment that pays you 12% per annum. Calculate the future value of the investment	Single Cashflow Question –FV?
123	Suppose a constant sum of Rs. 1 is deposited in a savings account at the end of each year for four years at 6% interest.	(table below)

N =	Amt	FVF (R% , N)	FV	
	1			

Calculate FVA of Rs. 1. HINTS:						
Total						

124	Find the future value of an annuity of Rs. 500 made annually for 7 years at interest rate of 14% compounded annually.	
125	Rs. 200 is invested at the end of each month in an account paying interest 6% per year compounded monthly. What is the future value of this annuity after 10th payment?	
126	Z invests Rs. 10,000 every year starting from today for next 10 years. Suppose interest rate is 8% per annum compounded annually. Calculate future value of the annuity.	

| 127 | Sinking Fund:

How much amount is required to be invested every year so as to accumulate Rs. 300000 at the end of 10 years if interest is compounded annually at 10%?

How much amount is required to be invested today so as to accumulate Rs. 300000 at the end of 10 years if interest is compounded annually at 10%? | Single Cash Flow Question | |

128	A sinking fund is created for redeming debentures worth Rs. 5 lakhs at the end of 25 years. How much provision needs to be made out of profits each year provided sinking fund investments can earn interest at 4% p.a.? (a)12,006 (b)Rs. 12,040 (c) Rs. 12,039 (d) Rs. 12,035	
129	A machine costs Rs. 5,20,000 with an estimated life of 25 years. A sinking fund is created to replace it by a new model at 25% higher cost after 25 years with a scrap value realization of Rs. 25000. what amount should be set aside every year if the sinking fund investments accumulate at 3.5% compound interest p.a.? (a) Rs. 16,000 (b) 16,500 (c) Rs. 16,050 (d) Rs. 16,005	
130	Prath aged 40 wishes his wife Rani to have	

	Rs. 40 lakhs at his death. If his expectation of life is another 30 years and he starts making equal annual investments commencing now at **3%** compound interest p.a. how much should he invest annually?		
131	Raja aged 40 wishes his wife Rani to have Rs. 40 lakhs at his death. If his expectation of life is another 30 years and he starts making equal annual investments commencing now at **3%** compound interest p.a. how much should he invest annually? Note:		
132	If the amount of an annuity after 25 years at 5% p.a C.I is Rs. 50,000 the annuity will be (a) Rs. 1,406.90 (b) Rs. 1,047.62 (c) Rs. 1,146.90 (d) none of these		
133	Given annuity of Rs. 100 amounts to Rs. 3137.12 at 4.5% p.a C. I. The number of years		

	will be (a) 25 years (appx.) (b) 20 years (appx.) (c) 22 years (d) none of these		
134	A person invests Rs. 500 at the end of each year with a bank which pays interest at 10% p. a C.I. annually. The amount standing to his credit one year after he has made his yearly investment for the 12th time is		
135	The amount of an annuity certain of Rs. 150 for 12 years at 3.5% p.a C.I is (a) Rs. 2,190.28 (b) Rs. 1,290.28 (c) Rs. 2,180.28 (d) none of these		
136	If the sum of money when compounded annually becomes ₹ 1,140 in 2 years and ₹		

	1,710 in 3 years, the Rate of Interest is (a) 30 %　　　　　(b) 40 % (c) 50 %　　　　　(d) 60 %	
137	A sum of money put at compound interest amount to ₹ 2,205 in 2 years and to ₹ 2,315.25 in 3 years. Find the interest % p.a. (a) 10 %　　　　　(b) 5 % (c) 6 %　　　(d) 8 %	

| Multiple Cashflows – Present Value of Annuity (PV$_A$) | EMI wale Que - आज एक बार पें से मिले और भविष्य मे बार बार पें से वापस दिये
Value of Assets / Capital Budgeting / Leasing / Bond Valuation
आज एक बार पें से दिये (कोई चीझ खरीदी) और भविष्य मे बार बार पें से वापस मिले | |

| 138 | What is the present value of Rs. 1 to be received after two years compounded annuallyat 10% interest rate? |

N	Cashflow	PVF@_____%	DFC
Total	PVAF =		

Alternatively, this can be solved on calculator.

| 139 | Find the present value of Rs. 10,000 to be required after 5 years if the interest rate be 9%. |

N	Cashflow	PVF@_____%	DFC	
Total	PVAF =			

Alternatively, this can be solved on calculator.

| 140 | S borrows Rs. 5,00,000 to buy a house. If he pays equal instalments for 20 years and 10% interest on outstanding balance what will be the equal annual instalment? |

| 141 | Rs. 5,000 is paid every year for ten years to pay off a loan. What is the loan amount if |

	interest rate be 14% per annum compounded annually?		
142	Y bought a TV costing Rs. 13,000 by making a down payment of Rs. 3000 and agreeing to make equal annual payment for four years. How much would be each payment if the interest on unpaid amount be 14% compounded annually?		
143	Mr. Borrower purchases a car for Rs. 5,50,000. He gets a loan of Rs. 5,00,000 at 15% p.a. from a Bank and balance 50,000 he pays at the time of purchase. Your dad has to pay whole amount of loan in 12 equal monthly instalments with interest starting from the end of first month.		
144	Suppose your mom decides to gift you Rs. 10,000 every year starting from today for		

the next five years. You deposit this amount in a bank as and when you receive and get 10% per annum interest rate compounded annually. What is the present value of this annuity?

Note : In most cases Loan payment dues are made at the end of the period only, i.e Annuity Regular . Questions based on Annuity applications can be solved using the Annuity Regular method . For knowledge purpose students may try another method viz., Annuity Due.

145 ♡	A Machine can provide you a cash inflow Rs. 1,00,000/- at the end of each year for next 5 years. If Your Opportunity cost of Funds is 9% p.a. At what maximum price would you like to buy the machine? Mr Borrower took a loan, repayable in 5 annual equal installments of Rs. 1,00,000/-. If rate of Interest charged is 9% p.a. calculate the loan taken today? You purchased a machine for Rs._____ required rate of return on investment is 9% p.a. You received Lease proposal for 5 years. What min. rent should be charged, if rent is to be received at the end of each year?		
146	ABC Ltd. wants to lease out an asset		

	costing Rs. 3,60,000 for a five year period. It has fixed a rental of Rs. 1,05,000 per annum payable annually starting from the end of first year. Suppose rate of interest is 14% per annum compounded annually on which money can be invested by the company. Is this agreement favourable to the company?	
147	A company is considering proposal of purchasing a machine either by making full payment of Rs. 4,000 or by leasing it for four years at an annual rate of Rs. 1,250. Which course of action is preferable if the company can borrow money at 14% compounded annually?	
148	A machine can be purchased for Rs.	

	50000. Machine will contribute Rs. 12000 per year for the next five years. Assume borrowing cost is 10% per annum compounded annually. Determine whether machine should be purchased or not.		
149	A machine with useful life of seven years costs Rs. 10,000 while another machine with useful life of five years costs Rs. 8,000. The first machine saves labour expenses of Rs. 1,900 annually and the second one saves labour expenses of Rs. 2,200 annually. Determine the preferred course of action. Assume cost of borrowing as 10% compounded per annum.		
150	Compute the net present value for a		

	project with a net investment of Rs. 1,00,000 and net cash flows year one is Rs. 55,000; for year two is Rs. 80,000 and for year three is Rs. 15,000. Further, the company's cost of capital is 10%?		
151	ABC Ltd wants to lease out an asset costing ₹3,60,000 for a 5-year period. It has fixed rental of ₹ 1,05,000 p.a. payable annually starting from the end of first year. Suppose rate of interest is 14 % p.a. compounded annually on which money can be invested by the company. Is this agreement favourable to the company? (a) ₹ Favourable ₹ 3,20,022.22 (b) Unfavourable ₹ 2,89,752.22 (c) ₹ Unfavourable ₹ 2,99,376.78 (d) Favourable ₹ 3,60,473.40		

Author's Notes:

Frequency of Compounding of Interest shall be matched with interval of Installment paid.

IF installment is paid monthly, then compounding should also be monthly.

If Installment is paid once a year & Interest is compunded monthly then we are supposed to take Effective rate to solve this Annuity.

152	Appu retires at 60 years receiving a pension of 14,400 a year paid in yearly installments for rest of his life after reckoning his life expectation to be 13 years and that interest at 4% p.a. is payable yearly.		
153	Appu retires at 60 years receiving a pension of 14,400 a year paid in half-yearly installments for rest of his life after reckoning his life expectation to be 13 years and that interest at 4% p.a. is payable half-yearly. What single sum is equivalent to his pension? (a) 1,45,000 (b) 1,44,900 (c) 1,44,800 (d) 1,44,700	Que is of: Hint: Adjust R & N	

154	Appu retires at 60 years receiving a pension of 14,400 a year paid in yearly installments for rest of his life after reckoning his life expectation to be 13 years and that interest at 4% p.a. is payable half yearly.	Hint: take effective rate	
155	Raja aged 40 wishes his wife Rani to have Rs. 40 lakhs at his death. If his expectation of life is another 30 years and he starts making equal semi-annual investments commencing now at 3% compound interest p.a. how much should he invest annually?	Hint: Adjust R	

Capital Budgeting:	BOND VALUATION:
NPV = (A) Outflow Today vs	Capital Budgeting hi hai! Discounted cash flow method.
(B) Value of Asset (sum of PV of All future cash inflows)	(A) Required Rate of Return / Discounting Rate / Opportunity cost

Scenario	NPV	Decision
A > B	-ve	Reject
A < B	+ve	Accept
A = B	NIL	May Accept if Rikame bhaithe ho

(B) Interest given by Company on Bonds vs

Scenario	NPV	Decision
A > B	-ve	Reject
A < B	+ve	Accept
A = B	NIL	May Accept

156	An investor intends purchasing a three year Rs. 1,000 par value bond having nominal interest rate of 10%. At what price the bond may be purchased now if it matures at par and the investor requires a rate of return of 14%?		
157	An investor intends purchasing a three year Rs. 1,000 par value bond having nominal interest rate of 10%. At what price the bond may be purchased now if it matures at Rs. 120 and the investor requires a rate of return of 14%?		
158	An investor intends purchasing a three year Rs. 1,000 par value bond having		

	nominal interest rate of 10%. At what price the bond may be purchased now if it matures at par and the investor requires a rate of return of 8%?		
159	An investor intends purchasing a three year Rs. 1,000 par value bond having nominal interest rate of 10%. At what price the bond may be purchased now if it matures at Rs. 1200 and the investor requires a rate of return of 8%?		
160	A 6 year bond of ₹ 1,000 has an annual rate of interest of 14%. Interest is paid half – yearly. If required rate of return is 6%, what is the value of the bond? (a) ₹ 925 (b) ₹ 952 (c) ₹ 950 (d) 945		
161	P ltd has to make payment of ₹ 20 Lakhs in 60 days. The company has decided to invest in CDs of a leading Nationalized Bank		

	at 8% p.a. What money is required to be invested now? (a) ₹ 19,74,040 (b) ₹ 19,47,040 (c) ₹ 19,78,040 (d) ₹ 19,75,000		
162	A money market instruction with face value of ₹ 100 and discount yield of 6 % will mature in 45 days. Compute the current price of the instrument and effective annual return. (a) ₹ 99.05, 6.00% (b) ₹ 99.00 5.29% (c) ₹ 99.25, 6.21% (d) ₹ 99.75, 6.08%		
Perpetuity: (Perpetual Annuity) Present value of infinite future cashflows.			
163	Ramesh wants to retire and receive Rs. 3,000 a month. He wants to pass this		

	monthly payment to future generations after his death. He can earn an interest of 8% compounded annually. How much will he need to set aside to achieve his perpetuity goal?		
164	Assuming that the discount rate is 7% per annum, how much would you pay to receive Rs. 50, growing at 5%, annually, forever?		
165	If An Equity share will pay a dividend of Rs. 3 forever, & if your required rate of return is 9% p.a. Calculate the Value of Share from your view point? Or at what maximum price would you like to buy the said equity share?		

MIXED QUESTIONS: Write Hints in your own words.

166	A machine costs Rs. 5,20,000 with an estimated life of 25 years. A fund is created to replace it by a new model at		

	25% higher cost after 25 years with a scrap value realization of Rs. 25000. what amount should be set aside today if interest accumulate at 3.5% compound interest p.a.? Notes:		
167	Alibaba borrows Rs. 6 lakhs Housing Loan at 6% repayable in 20 annual installments commencing at the end of the first year. How much annual payment is necessary.		
168 ♡	Alibaba borrows Rs. 6 lakhs Housing Loan at 6% repayable in 20 semi-annual installments commencing at the end of the first six months. How much payment is necessary in each installment?		
169	~~Johnson left Rs. 1,00,000 with the direction that it should be divided in such a way that his minor sons Tom, Dick and Harry aged 9, 12 and 15 years should each receive equally after attaining the age 25 years. The rate of interest being 3.5%, how much each son receive after getting 25 years old?~~		

170	A man purchased a house valued at Rs. 3,00,000. He paid Rs. 2,00,000 at the time of purchase and agreed to pay the balance with interest at 12% per annum compounded half yearly in 20 equal half yearly instalments. If the first instalment is paid after six months from the date of purchase then the amount of each instalment is____		
171	A person bought a house paying Rs. 20,000 cash down and Rs. 4,000 at the end of each year for 25 yrs. at 5% p.a. C.I. The cash down price is _____		
172 ♡	Mr. Worker (age 25) want to retire at 60 years of his age, he want to receive Rs. 20,000 pm at the end of each month forever after his retirement, what amount		

	he shall keep a side each year to achieve his retirement goal if the current interest rate is 9% p.a. & then it will be 5% p.a. forever.		
173	Mr. Worker (age 25) want to retire at 60 years of his age, he want to receive Rs. 20,000 pm at the end of each month for next 10 years after his retirement, what amount he shall keep a side each year to achieve his retirement goal if the current interest rate is 9% p.a. & then it will be 5% p.a. forever.		
174	A = Rs. 5,200, R = 5% p.a., T = 6 years, P will be (a) Rs. 2,000 (b) Rs. 3,880 (c) Rs. 3,000 (d) none of these		

175	If P = 1,000, n = 4 years., R = 5% p.a then C. I will be		
	(a) Rs. 215.50 (b) Rs. 210		
	(c) Rs. 220 (d) none of these		
176	The time in which a sum of money will be double at 5% p.a C.I is		
	(a) Rs. 10 years (b) 12 years		
	(c) 14.2 years (d) none of these		
177	If A = Rs. 10,000, n = 18yrs., R = 4% p.a C.I, P will be		
	(a) Rs. 4,000 (b) Rs. 4,900		
	(c) Rs. 4,500 (d) 4,936.30		
178	The time by which a sum of money would treble it self at 8% p. a C. I is		
	14.28 years (b) 14 years		
	(c) 12 year (d) none of these		

179	The present value of an annuity of Rs. 80 a years for 20 years at 5% p.a is (a) Rs. 997 (appx.) (b) Rs. 900 (c) Rs. 1,000 (d) none of these		
180	The present value of an annuity of Rs. 3000 for 15 years at 4.5% p.a CI is (a) Rs. 23,809.41 (b) Rs. 32,214.60 (c) Rs. 32,908.41 (d) none of these		
181	A loan of Rs. 10,000 is to be paid back in 30 equal instalments. The amount of each installment to cover the principal and at 4% p.a CI is (a) Rs. 587.87 (b) Rs. 587		

	(c) Rs. 578.30 (d) none of these	
182	A = Rs. 1,200 n = 12 years i = 0.08, V = ? Write Formula of FV_A = (a) Rs. 3,039 (b) Rs. 3,990 (c) Rs. 9,930 (d) 9,043.30	Solve on calculator
183	A company borrows Rs. 10,000 on condition to repay it with compound interest at 5% p.a by annual installments of Rs. 1000 each. The number of years by which the debt will be clear is___ 14.2 years 10 years 12 years none of these	
184	Mr. X borrowed Rs. 5,120 at 12 ½ % p.a C.I. At the end of 3 yrs, the money was repaid along with the interest accrued. The amount of interest paid by him is (a) Rs. 2,100 (b) Rs. 2,170	

(c) Rs. 2,000   (d) none of these

185	Mr. Paul borrows Rs. 20,000 on condition to repay it with C.I. at 5% p.a in annual installments of Rs. 2000 each. The number of years for the debt to be paid off is 10 years (C)12 years 11 years (d)14.2 years	
186	The present value of annuity of Rs. 5,000 per annum for 12 years at 4% p.a C.I. annually is (a) Rs. 46,000 (b) Rs. 46,850 (c) Rs. 15,000	

	(d) Rs. 46,925.40		
187	A person desires to create a fund to be invested at 10% CI per annum to provide for a prize of Rs. 300 every year. Using V = a/I find V and V will be (a) Rs. 2,000 (b) Rs. 2,500 (c) Rs. 3,000 (d) none of these		
188	₹ 2,000 is invested at 10% p.a. What is the amount after 2 yrs if compounding is done (i) annually (ii) semi-annually (iii) Quarterly (iv) Monthly? (a) ₹ 2,430, ₹ 2,531, ₹ 2,638, ₹ 2,700 (b) ₹ 2,420, ₹ 2431, ₹ 2,437, ₹ 2,441		

(c) ₹ 2,130,   ₹ 2,483, ₹ 2,643, ₹ 2,712

(d) ₹ 2,240,   ₹ 2,431, ₹ 2,468, ₹ 2,712

189	A sum of money yields at compound interest ₹ 200 and ₹ 220 at the end of first and second year respectively. The rate % is — (a) 20 (b) 15 (c) 10 (d) 5		
190	What annual rate of interest compounded annually doubles an investment in 7 years? [Given that 2¹/⁷ = 1.104090] (a) 10.41 % (b) 11.50 % (c) 9.65 % (d) 10.26 %		
191	Find the rate if ₹ 2,00,000 amount to ₹ 2,31,525 in 1 ½ year interest being compounded half-yearly. (a) 15 % (b) 11 % (c) 8% (d) 10 %		

192	At what rate per cent compound interest does the sum of money becomes four fold in 2 years? (a) 150 % (b) 100 % (c) 200 % (d) 400 %		
193	What is the annual rate of interest compounded annually which doubles an investment in 2 years. Given that 2 = 1.4142135. (a) 46.04125 % (b) 14.142135 % (c) 41.42135 % (d) None of these		
194	In how many years will a sum of money double at 5% p.a. compound interest? (a) 15 years 3 months (b) 14 years 2 months (c) 14 years 3 months (d) 15 years 2 months		

195	In how many years a sum of money treble at 5% p.a. compound interest payable in half yearly rests? (a) 18 years 7 months (b) 18 years 6 months (c) 18 years 8 months (d) 22 years 3 months		
196	In what time will ₹ 8,000 amount to ₹ 8,820 at 5% p.a. interest compounded half-yearly? (a) 3 years (b) 2 years 5 months (c) 2 years (d) 2 years and 1 month		
197	₹ 16,000 invested at 10% p.a. compounded semi-annually amounts to ₹ 18,522. Find the time period of investment. (a) 1 year (b) 1 ½ year (c) 2 years (d) 1 ¾ years		

198	In what time will compound interest on ₹ 320 at 12 ½ % p.a. compounded annually be ₹ 84? (a) 4 ½ years (b) 2 ½ years (c) 2 years (d) 5 years		
199	Find the least number of complete years in which the sum of money put out on at 20% compound interest will be more than double. (a) 1 year (b) 2 years (c) 3 years (d) 4 years		
200	The time by which a sum of money would treble itself at 8% p.a. CI is- (a) 14.28 years (b) 14 years (c) 12 years (d) None of these		
201	A sum of money at compound interest		

amount to thrice itself in 3 years. In how many years will it be 9 times itself?

(a) 18

(b) 12

(c) 9

(d) 6

| 202 | In how many years a sum will double at 10% p.a. compound interest?

(a) 8 years 3 months   (b) 7 years and 2 months

(c) 7 years and 6 months (d) 8 years 2 months | | |

| 203 | A sum of money triples itself in 20 years. The number of years it would double itself (C.I)-

(a) 13.2 years   (b) 15.2 years

(c) 10 years   (d) 12.6 years | | |

204	The difference between compound and simple interest at 5% p.a. for 4 years on ₹ 20,000 is — (a) ₹ 250 (b) ₹ 277 (c) ₹ 300 (d) ₹ 310	
205	The difference between Ci and SI on a certain sum for 2 years at 6 % p.a. is ₹ 13.50. Find the sum. (a) ₹ 3,750 (b) ₹ 2,750 (c) ₹ 4,750 (d) None of these	
206	The difference between the S.I and the C.I on ₹ 2,400 for 2 years at 5 % p.a. is- (a) ₹ 5 (b) ₹ 10 (c) ₹ 16 (d) None of these The difference between CI and SI on a certain sum of money for 2 years at 4 % p.a. is ₹ 1. The sum is (a) ₹ 625 (b) ₹ 630 (c) ₹ 640 (d) ₹ 635	

207	The difference between SI and CI on a certain sum for 3 years at 5 % p.a. is ₹ 76.25. Find the sum. (a) ₹ 5,000 (b) ₹ 8,000 (c) ₹ 9,000 (d) ₹ 10,000		
208	On a certain sum rate of interest @ 10% p.a., S.I. = ₹ 90 Term = 2 year, Find the compound interest for the same: (a) 545.5 (b) 94.5 (c) 450 (d) 18		
209	A certain sum of money double itself in 4 years at C.I. In how many years it will become 32 times to itself (a) 16 years (b) 24 years (c) 20 years (d) 12 years		

210	If in two years time a principal of Rs. 100 amounts to Rs. 121 when the interest at the rate of r% is compounded annually, then the value of r will be (a) 14 (b) 10.5 (c) 15 (d) 10		
211	How much will Rs. 25,000 amount to in 2 years at compound interest if the rates for the successive years are 4% and 5% per year. (a) Rs. 27,000 (b) Rs. 27,300 (c) Rs. 27,500 (d) Rs. 27,900		
212	The future value of an annuity of ₹ 1,000 made annually for 5 years at the rate of interest 14% compound annually is (a) ₹ 5610 (b) ₹ 6610 (c) ₹ 6160 (d) ₹ 5160		

213	If Rs. 10,000 is invested at 8% per year compound quarterly, then the value of the investment after 2 years is [given $(1+0.2)^8$ — 1.171659] (a) Rs. 10,716.59 (b) Rs. 11,716.59 (c) Rs. 117.1659 (d) None of the above		
214	The effective rate if interest corresponding a nominal rate of 7 % p.a. compounded quarterly is- (a) 7 % (b) 7.5 % (c) 7.19 % (d) None of these		
215	Asha purchased a truck on hire purchase system. As per terms she is required to pay Rs. 70,000 down, Rs. 53,000 at the end of first year, Rs. 49,000 at the end of second year and Rs. 55,000 at the end of third year. Interest is charged @ 10% p.a. You are required to calculate the cash price of the truck and the interest paid with each instalment.		

216	A acquired on 1st January, 20X1 a machine under a Hire-Purchase agreement which provides for 5 half-yearly instalments of Rs. 6,000 each, the first instalment being due on 1st July, 20X1. Assuming that the applicable rate of interest is 10 per cent per annum, calculate the cash value of the machine.		
217	On 1st April, 20X1 a manufacturing company buys on Hire-purchase system a machinery for Rs. 90,000, payable by three equal annual instalments combining principal and interest, the rate of interest was 5% per annum. Calculate the amount of cash price and interest. Assume that the present value of an annuity of one rupee for three years at 5% interest is Rs. 2.723.		
218	Om Ltd. purchased a machine on hire purchase basis from Kumar Machinery Co.		

Ltd. on the following terms:

Cash price Rs. 80,000

Down payment at the time of signing the agreement on 1.1.20X1 Rs. 21,622.

5 annual instalments of Rs. 15,400, the first to commence at the end of twelve months from the date of down payment.

Rate of interest is 10% p.a.

You are required to calculate the total interest and interest included in cash instalment.

MTP / RTP / Extra Practice Questions

MTP 1- NOV 2022 - 14 Questions Youtube Link >>> PART 1 PART 2

219	Find future value of annuity of Rs. 1000 made annually for seven years at interest rate 16% compounded annually. [Given that (1.16) 7= 2.8262] (a)　　Rs. 11413.75 (b)　　Rs. 11000.35 (c)　　Rs. 8756 (d)　　Rs. 9892.34		
220	Assuming that the discount rate is 7% is p.a . How much would you pay to receive Rs. 500. Growing at 5% annually forever? (a)　　Rs. 2,500 (b)　　Rs. 5,000 (c)　　Rs. 7,500 (d)　　Rs. 25,000		
221	Rajesh deposits Rs. 3,000 at the start of each quarter in his savings account. If the account earns interest 5.75% per annum compounded quarterly, how much money (in Rs.) while he have at the end of 4 years? [Given that (1.014375) 16= 1.25654] (a)　　Rs. 54,308.6		

	(b) Rs. 58,553.6 (c) Rs. 68,353.6 (d) Rs. 63,624.4		
222	The annual rate of simple interest is 12.5%. In how many years does the principal doubles? 11 years 9 years 8 years 7 years		
223	Rs. 5000 is paid every year for 10 years to pay off a loan. What is the loan amount of interest rate be 14% (a)Rs. 26,000.90 (b)Rs. 26080.55 (c)Rs. 15000.21 (d)Rs. 16,345.11		
224	Rs. 800 is invested at the end of each month in an account paying interest 6% per year compounded monthly. What is the future value of annuity after 10th payment?		

[Given that (1.005) 10= 1.0511]

(a) Rs. 4444

(b) Rs. 8766

(c) Rs. 3491

(d) Rs. 8176

225	A certain sum of money borrowed at simple interest to Rs. 2688 in three years and to Rs. 2784 in four years at the rate per annum equal to		
	(a) 4% (b) 6% (c) 5% (d)7%		

226	Ravi made an investment of Rs. 15,000 in a scheme and at the time of maturity the time of maturity the amount was Rs. 25,000. If Compound Annual Growth Rate (CAGR) for this investment is 8.88%. Calculate the approximate number of years for which he has invested the amount.		
	(a) 6		
	(b) 7.7		
	(c) 5.5		

(d)	7		

| 227 | Madhu takes a loan of Rs. 50,000 from ABC Bank LTD. The rate of interest is 10% per annum. The first installment will be paid at the end of five year. Determine the amount (in Rs.) of equal instalments, if Madhu wishes to repay the amount in five years.
(a) Rs. 19,510
(b) Rs. 19,430
(c) Rs. 19,310
(d) Rs. 16,630 | | |
| 228 | Rajesh invests Rs. 20,000 per year in a stock index fund, with earns 9% per year, for the next ten years. What would be closest value of accumulated investment upon payment of the last installment?
[Given: $(1.09)^{10}$ = 2.36736]
(a) Rs. 3,88,764.968
(b) Rs. 3,03,858.564
(c) Rs. 2,68,728.484
(d) Rs. 4,08,718.364 | | |

229	An investment is earning compounded interest Rs. 100 invested in the year 2 accumulated to Rs. 105 by year 4. If Rs. 500 invested in year 5, will become Rs. by year 10. (a) Rs. 364.80 (b) Rs. 564.80 (c) Rs. 464.80 (d) Rs. 664.80		
230	An investor is saving to pay off an obligation of Rs. 15,250 which will due in seven years, if the investor is earning 7.5% simple interest rate per annum , he must deposit Rs. to meet the obligation. (a) Rs. 8,000 (b) Rs. 9,000 (c) Rs. 10,000 (d) Rs. 11,000		
231	The value of scooter is Rs. 1,00,000 find its depreciation is 10% p.a. Calculate total		

depreciation value at the end of seven years.

(a) Rs. 47829.70

(b) Rs. 47000.90

(c) Rs. 42709

(d) Rs. 42,000

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232 Effective rate of interest does not depend upon

Amount of Principal

Amount of Interest

Number of conversion periods

none of these

MTP 2 NOV 2022 – 13 Questions

233 A man invests Rs. 12,000 at 10% p.a. and another sum of money at 20% p.a for one year. The total investment earns at 14% p.a. simple interest the total investment is:

(a) Rs. 8,000

(b) Rs. 20,000

(c) Rs. 14,000

(d) Rs. 16,000

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234 The difference in simple interest of a sum

invested of Rs. 1,500 for 3 years is Rs. 18. The difference in their rates is:

(a) 0.4

(b) 0.6

(c) 0.8

(d) 0.10

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235 Find the effective rate of interest on Rs. 10,000 on which interest is payable half yearly at 5% p.a. (a) 5.06%

(b) 4%

(c) 0.4%

(d) 3%

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236 Find the effective rate of interest at 10% p.a. when interest is payable quarterly.

(a)10.38%

(b)5%

(c)5.04%

(d)4%

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237 What will be the population after 3 years

	when the present population is 25,000 and population increases at the rate of 3% in 1st year, at 4% in 2nd year and at 5% in 3rd year? (a) 28,119 (b) 29,118 (c) 27,000 (d) 30,000		
238	The value of scooter is Rs. 10,000. Find its value after 7 years if rate of depreciation is 10% p.a. (a) Rs. 4,782.96 (b) Rs. 4,278.69 (c) Rs. 42,079 (d) Rs. 42,000		
239	SI = 0.125 P at 10% p.a. Find Time. 1.25 years 25 years 0.25 years None of these		
240	How much amount is required to be		

invested every year as to accumulate Rs. 6,00,000 at the end of 10 years, if interest is compounded annually at 10% rate of interest [Given : (1:1)10 = 2.59374].

(a)   Rs. 37,467

(b)   Rs. 37,476

(c)   Rs. 37,647

(d)   Rs. 37,674

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241 The difference between the CI and SI for 2 year is 21. If the rate of interest is 5%, the final principal is:

(a)Rs. 8,200

(b)Rs. 4,800

(c)Rs. 8,000

(d)Rs. 8,400

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242 The present value of a scooter is Rs. 7,290. If its value decreases every year by 10%, then its value before 3 years is equal to:

(a)   10,000

(b)   10,500

(c)   20,000

(d)   20,500

243	Mr. X lent some amount of money at 4% S.I. and he obtained Rs. 520 less than he lent in 5 years. The sum lent is: (a) Rs. 620 (b) Rs. 650 (c) Rs. 750 (d) None of these		
244	Rs. 8,829 is invested into three different sectors in such a way that their amounts at 4% p.a. S.I. after 5 years; 6 and 8 years are equal. Find each part of the sum. (a) Rs. 3,069, Rs. 2,970; Rs. 2,790 (b) Rs. 3,089, Rs. 2,970; Rs. 2,790 (c) Rs. 3,609, Rs. 2,970; Rs. 2,790 (d) Rs. 3,069, Rs. 2,960; Rs. 2,760		
245	A Rs. 1000 bond paying annual dividends at 8.5% will be redeemed at par at the end of 10 years. Find the purchase price of this bond if the investor wishes a yield rate of 8% (a) Rs. 907.135		

	(b) Rs. 1033.54		
	(c) Rs. 945.67		
	(d) None of these		
246	Mr. X invest Rs. 10,000 every year starting from today for next: 10 years suppose interest rate is 8% per annual compounded annually. Calculate future value of the annuity. (a) Rs. 1,56,454.88 (b) Rs. 1,56,554.88 (c) Rs. 1,44,865.625 (d) None of these		
MTP OCTOBER 2021 13-14 Questions			
247	A sum of Rs. 46,875 was lent out at simple interest and at the end of 1 year 8 months, the total amount was Rs. 50,000. Find the rate of interest per annum. 8% 4% (c) 12% (d) None		

248	A sum of money amount to Rs. 6,200 in 2 years and Rs. 7,400 in 3 years. The principal and rate of interest are (a) Rs. 3,800, 31.57% (b) Rs. 3,000, 20% (c) Rs. 3,500, 15% (d) none of these
249	The effective rate of interest corresponding to a nominal rate 3% p.a payable half yearly is 3.2% p.a. 3.25% p.a. 3.0225% p.a none of these
250	A sum of money gets doubled in 5 years at X% simple interest. If the interest was Y%, the sum of money would have become ten-fold in thirty years. What is Y – X (in %) 10 5 8 None of the above

251	The nominal rate of growth is 17% and inflation is 9% for the five years. Let P be the Gross Domestic Product (GDP) amount at the present year then the projected real GDP after 6 years is (a) 1.587P (b) 1.921 P (c) 1.403 P (d) 2.51 P		
252	The difference between Compound Interest and Simple Interest on a certain sum for 2 years at 6% p.a. is Rs. 13.50. Find the sum (a) 3750 (b) 2750 (c) 4750 (d) none		
253	The sum required to earn a monthly interest of Rs 1200 at 18% per annum Simple Interest is (a)Rs. 50,000 (b)Rs. 60,000 (c)Rs. 80,000		

(d)none of these

The compound interest earned by a money lender on Rs. 7,000 for 3 years if the rate of interest for 3 years are 7%, 8% and 8.5% respectively is

(a)   Rs. 1750

(b)   Rs. 1800

(c)   Rs. 1776

(d)   none of these

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254 Find the present value of an annuity of Rs. 1,000 payable at the end of each year for 10 years, if the money is worth 5% effective.

(a)Rs. 7,724

(b)Rs. 7000

(c)Rs. 8000

(d)none of these

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255 The present value of annuity of Rs. 3,000 per annum for 15 years at 4.5% p.a C.I. annually is

(a)Rs. 23,809.41

(b)Rs. 32,214.60 (c)Rs. 32,908.41 (d)none of these	
256 A person desires to create a fund to be invested at 10% CI per annum to provide for a prize of Rs. 300 every year. Using V = a/I find V and V will be (a) Rs. 2,000 (b) Rs. 2,500 (c) Rs. 3,000 (d) none of these The future value of annuity of Rs. 2000 for 5 years at 5 % compounded annually is given (in nearest Rs.) as (a) Rs. 11, 051 (b) Rs. 21,021 (c) Rs. 1,56,24 (d) Rs. 61254	
257 A Maruti Zen cost Rs. 3,60,000. Its price depreciates at the rate of 10% of a year during the first two years and at the rate of 20% in third year. Find the total depreciation.	

	(a) Rs. 1,26,720		
	(b) Rs. 1,15,620		
	(c) Rs. 1,25,000		
	(d) Rs. 1,10,520		
258	a. Net monthly salary of an employee was Rs. 3000 in 1980. The consumer price index number in 1985 is 250 with 1980 as base year. It is decided to compensate them with dearness allowances, Total Salary will be? (a) Rs. 4.800 (b) Rs. 4,700 (c) Rs. 4,500 (d) None of these. Calculate the Compounded Growth Rate of Inflation in the consumer Price Index in above data.		

MTP NOV 2021 (11 Questions)

| 259 | Arun purchased a vaccum cleaner by giving ₹1700 as cash down payment, which will be followed by five EMIs of ₹480 each. The vaccum cleaner can also be bought by paying ₹3900 cash. What is the approx. | | |

	rate of interest p.a. (at simple interest) under this instalment plan? (a) 18% (b) 19% (c) 22% (d) 20%		
260	Present Value of a five year annuity is Rs. 2,000. If the rate of interest is 8% p.a., what is the amount of each annuity payment? (a) Rs.500.9 (b) Rs.463.8 (c) Rs.363.1 (d) Rs.486.4		
261	Abdul has taken a loan from Bahadur at 7% p.a. The loan has to be repaid in three equal yearly instalments of Rs. 10,000 each. What is the amount of loan taken? (a) Rs.25,467 (b) Rs.26,897 (c) Rs.26,243 (d) None of the above		

262	A took a loan from B. The loan is to be repaid in annual installments of Rs. 2,000 each. The first instalment is to be paid three years from today and the last one is to be paid 8 years from today? What is the value of loan today, using a discount rate of eight percent?	
	(a) Rs.9,246	
	(b) Rs.7,927	
	(c) Rs.8,567	
	(d) None of the above	

263	If the cost of capital be 12% per annum, then the Net Present Value (in nearest Rs.) from the given cash flow is given as , initial cash outflow Rs. 1,00,000	

Year	1	2	3
Profit	60000	40000	50000

264	Let the operating profit of a manufacturer for five years is given as (Rs. In Lakhs)			

Year	1	2	3	4	5	6
profit	90	100	106.4	107.14	120.24	157.35

Calculate Compound Annual Growth Rate (CAGR)

(a) 9%

(b) 12%

(c) 11%

(d) 13%

265	If a sum triples itself in 15 years at simple rat of interest, the rate of interest per annum will be:

(a) 13%

(b) 13.3%

(c) 13.5%

(d) 18.0%

266	What will be population after 3 years when present population is 25, 000 and population increases at the rate of 3% in I year, at 4% in II year and 5% in III year?

	(a) Rs.28,119 (b) Rs.29,118 (c) Rs.27, 000 (d) Rs.30, 000		
267	The future value of an annuity of Rs.1500 made annually for five years at interest of 10% compounded annually is (Given that (1.1) 5= 1.61051) (a) Rs.9517.56 (b) Rs.9157.65 (c) Rs.9715.56 (d) Rs.9175.65		
268	Find the effective rate of interest equivalent to the nominal rate of 7% converted monthly: (a) 7.26% (b) 7.22% (c) 7.02% (d) 7.20%		
269	How much will be Rs.25,000 to in 2 years at compound interest if the rates for the successive years are at 4% and 5% per year		

(a)	Rs.27,300		
(b)	Rs.27,000		
(c)	Rs.27,500		
(d)	Rs.27,900		

MTP March 2022 (11 Questions)

270	In what time will be a sum of money doubles itself at 6.25% p.a. simple interest? 5 years 8 years 12 years 16 years		
271	Mr. X invests Rs. 10,000 every year starting from today for next 10 years suppose interest rate is 8% per annum compounded annually. Calculate future value of the annuity: (Given that (1+0.08)10 = 2.158925] (a) Rs. 156454.88 (b) Rs. 144865.625 (c) Rs. 156554.88 (d) none of these		

272	The difference between the simple and compound interest on a certain of 3 years at 5% p.a is Rs. 228.75. The compound interest on the sum of for 2 years at 5% per annum is (a) Rs. 3175 (b) Rs. 3075 (c) Rs. 3275 (d) Rs. 2975		
273	The time in by which a sum of money is 8 times of itself if it doubles itself in 15 years interest compounded annually. 42 years 43 years 45 years 46 years		
274	Present value of a scooter is Rs. 7290, if its value decreases every year by 10% then the value before 3 years is equal to		

(a) 10,000	
(b) 10,500	
(c) 20,000	
(d) 20,500	
275 Find the effective rate of interest at 10% p.a when the interest is payable quarterly. (a) 10.38% (b) 5% (c) 5.04% (d) 4%	
276 The difference between in simple interest on a sum invested of Rs. 1500 for 3 years is Rs. 18. The difference in their rate is (a) 0.4 (b) 0.6 (c) 0.8 (d) 0.10	
277 What will be the population after 3 years . When the population increases at the rate 3 % in I year, 4 % in II year and 5% in III year.	

a) :8,119 b) :9,118 c) :7,000 d) :0,00)		
278	If Rs. 10,000 is invested at 8 % per annum, then compounded quarterly. Then value of investment after 2 years is (a) Rs. 11,716.59 (b) Rs. 10,716.59 (c) Rs. 12,715.59 (d) none of these	
279	In how many years will a sum of money become double at 5% p.a compound interest 14 years 15 years 16 years 14.3 years	
280	The future value of an annuity of Rs. 1,000 is made annually for 5 years at interest rate of 14% compounded annually [Given that (1.14)^5 = 1.92541] is	

(a) Rs. 5610 (b) Rs. 6610 (c) Rs. 6160 (d) Rs. 5160		BEST OF LUCK!

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