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प्रश्नपुस्तिका क्रमांक
Question Booklet No.

O.M.R. Serial No. | | | | | | | | |

प्रश्नपुस्तिका सीरीज
Question Booklet Series
**A**

# B.Com. (Honors) (First Semester) Examination, February/March-2022
# BCHO-102
# Financial Mathematics
**(for Regular, B.P. & Ex Studends)**

**Time : 1:30 Hours** **Maximum Marks-100**

जब तक कहा न जाय, इस प्रश्नपुस्तिका को न खोलें

**निर्देश : –**

1. परीक्षार्थी अपने अनुक्रमांक, विषय एवं प्रश्नपुस्तिका की सीरीज का विवरण यथास्थान सही– सही भरें, अन्यथा मूल्यांकन में किसी भी प्रकार की विसंगति की दशा में उसकी जिम्मेदारी स्वयं परीक्षार्थी की होगी।
2. **इस प्रश्नपुस्तिका में 100 प्रश्न हैं, जिनमे से केवल 75 प्रश्नों के उत्तर परीक्षार्थियों द्वारा दिये जाने है। प्रत्येक प्रश्न के चार वैकल्पिक उत्तर प्रश्न के नीचे दिये गये हैं। इन चारों में से केवल एक ही उत्तर सही है। जिस उत्तर को आप सही या सबसे उचित समझते हैं, अपने उत्तर पत्रक (O.M.R. ANSWER SHEET)में उसके अक्षर वाले वृत्त को काले या नीले बाल प्वांइट पेन से पूरा भर दें। यदि किसी परीक्षार्थी द्वारा निर्धारित प्रश्नों से अधिक प्रश्नों के उत्तर दिये जाते हैं तो उसके द्वारा हल किये गये प्रथमतः यथा निर्दिष्ट प्रश्नोत्तरों का ही मूल्यांकन किया जायेगा।**
3. प्रत्येक प्रश्न के अंक समान हैं। आप के जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
4. सभी उत्तर केवल ओ०एम०आर० उत्तर पत्रक **(O.M.R. ANSWER SHEET)** पर ही दिये जाने हैं। उत्तर पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
5. ओ०एम०आर० उत्तर पत्रक **(O.M.R. ANSWER SHEET)** पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाय।
6. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी प्रश्नपुस्तिका बुकलेट एवं ओ०एम०आर० शीट पृथक–पृथक उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें।
7. निगेटिव मार्किंग नहीं है।

**महत्वपूर्ण : –** **प्रश्नपुस्तिका खोलने पर प्रथमतः जॉच कर देख लें कि प्रश्नपुस्तिका के सभी पृष्ठ भलीभॉति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्ष निरीक्षक को दिखाकर उसी सीरीज की दूसरी प्रश्नपुस्तिका प्राप्त कर लें।**

**470**

**Rough Work / रफ कार्य**

1. What will be the sum if Simple Interest is ₹ x at x% for x years?

   (A) (100/X)

   (B) (100X)

   (C) $(100/X^2)$

   (D) (X)

2. If S.I and C.I denote Simple Interest and Compound Interest respectively on the same sum at the same rate of interest for the same period. What is the relation between S.I and C.I?

   (A) C. I > S.I

   (B) C. I $\geq$ S.I

   (C) C. I = S. I

   (D) C. I $\leq$ S. I

3. Principal + Interest = ?

   (A) Amount

   (B) Simple Interest

   (C) Profit

   (D) Rate

4. The basic difference between Simple Interest and Compound interest is that in Simple Interest the _____ remains the same throughout the loan period while in Compound Interest it varies.

   (A) Amount

   (B) Principal

   (C) Rate

   (D) Interest

5. What is the formula of Compound Interest?

(A) C. I = P × R × T/100

(B) C. I = 100/P × R × T

(C) C. I = Original Amount – Final Amount

(D) C. I = Final Amount – Original Amount

6. What is the Amount when Interest is Compounded Half-yearly?

(A) $[Px\{(1+R)/2\times100\}^{2n}]$

(B) $[Px\{1+(Rx100/2)\}^{2n}]$

(C) $[Px\{1+(R/2\times100)\}^{2n}]$

(D) $[P2x\{1+(R/2\times100)\}^{2n}]$

7. The simple interest on a sum of money is $1/19^{th}$ of the principled and the number of years is equal to the rate per cent rate per annum. Find the rate per cent?

(A) 3 %

(B) 5 %

(C) 7 %

(D) 9 %

8. The value of mobile phone which was purchased 2 years ago depreciates at 12% p.a.. If its present value is ₹9680, for how much was it purchased?

(A) ₹ 12000

(B) ₹ 11500

(C) ₹ 12500

(D) ₹ 10000

9. Calculate the amount on ₹4480 at 8% per annum for 3 years simple interest.

(A) ₹ 5842.90

(B) ₹ 5600

(C) ₹ 6000

(D) ₹ 5555.20

10. The difference in simple interest at 13% and 12% p.a. of a sum in one year is ₹ 110. Then the sum is.

(A) ₹ 13000

(B) ₹ 10000

(C) ₹ 15000

(D) ₹ 11000

11. In what time will ₹1000 amount to ₹ 1331 at 10% per annum, compounded annually?

(A) 3 years

(B) 2/3 years

(C) $1^{1/2}$ years

(D) ½ years

12. The simple interest on a certain sum of money for 4 years at 4 percent per annum exceeds the compound interest on the same sum for 3 years at 5 percent per annum by ₹57. Find the sum.

(A) ₹ 24000

(B) ₹ 12500

(C) ₹ 23050

(D) ₹ 26700

13. The difference in the interests received form two different banks on ₹1000 for 2 years is ₹ 20. Thus, the difference in their rates is:

(A) 0.5%

(B) 1.5%

(C) 1%

(D) 2%

14. Find out the capital required to earn a monthly interest of ₹600 at 6% simple interest.

(A) ₹ 110000

(B) ₹ 120000

(C) ₹ 130000

(D) ₹ 100000

15. ____ are long-term debt instruments.

(A) Equity

(B) Bonds

(C) Reserves

(D) None of these

16. Intrinsic value is also known as.....

(A) Economic value

(B) Present value

(C) Future value

(D) None of these

17. ____ is a process of going from today's value to the future value:

(A) Discounting

(B) Effective rate

(C) Compounding

(D) All of these

18. Two major components of interest rate are:

(A) Pure Interest Rate + Risk Premium

(B) Pure Interest Rate + Inflation Rate

(C) Risk Premium + Inflation Rate

(D) Base Rate + Risk Premium

19. Which of the following is not a type of risk premium for the purpose of calculation of interest rate?

(A) Default risk premium

(B) Liquidity risk premium

(C) Credit risk premium

(D) Maturity risk premium

20. If the borrower would not pay the entire obligation consisting of principal and interest.

(A) Liquidity Risk premium

(B) Default Risk premium

(C) Maturity Risk Premium

(D) None of these.

21. When no interest is paid during the life time of a bond, it is called .....

(A) Zero coupon bonds

(B) Debentures

(C) Shares

(D) Gilt-edged bond

22. The person who lends the money is called .....

(A) Creditor

(B) Debtor

(C) Shareholder

(D) Either (A) or (B)

23. The equivalent single discount for two successive discounts of 15% and 10% is:

(A) 20.5%

(B) 23.5%

(C) 25%

(D) 20%

24. The effective rate of interest will always be ____ the nominal rate?

(A) Greater than

(B) Equal to

(C) Less than

(D) All of before

25. In Rule 69, we divide 69 by "n" and add what amount?

(A) 12

(B) 0.35

(C) 0.50

(D) 0.12

26. If a saving plan offers a nominal rate of 8% compounding quarterly on a 1-year investment, what will be the "EIR"?

(A) 8.24%

(B) 6.53%

(C) 8%

(D) 9%

27. More frequent compounding results in _____ future values and _____ present values than less frequent compounding at the same interest rate?

(A) Higher, higher

(B) Lower, higher

(C) Higher, Lower

(D) Lower, Lower

28. What stream of cash flows continue indefinitely?

(A) Perpetuity

(B) Annuity

(C) Futurity

(D) None of the above

29. The interest rate used in the present value calculation is often referred to as?

(A) Discount rate

(B) Inflation rate

(C) Nominal rate

(D) None of the above

30. In 2 years you are receive ₹10,000. If the interest rate were to suddenly decrease, the present value of that future amount to you would?

(A) The correct answer cannot be determined without more information.

(B) Rise

(C) Fall

(D) Remains unchanged

31. Which of the following is not true regarding an annuity due?

(A) It is a series of equal cash flows

(B) It is also known as deferred annuity

(C) Cash flows occurs for a specific time period

(D) Payment are made at the start of each period

32. At issue, coupon bonds typically sell _____?

(A) Above par value

(B) Below par value

(C) At or near par value

(D) At a value unrelated to par

33. The _____ is used to calculate the present value of a bond?

(A) Nominal yield

(B) Current yield

(C) Yield to call

(D) Yield to maturity

34. Pension fund and insurance obligation is an example of?

(A) Annuities

(B) Perpetuity

(C) Consol

(D) Securities

35. You are getting payments of Rs. 8,000 at the beginning of every year and they are for five years at 6% p.a, what is the value of this annuity?

(A) ₹ 34,720

(B) ₹ 39,320

(C) ₹ 35,720

(D) None

36. In ordinary annuity payments or receipts occur at?

(A) Beginning of each period

(B) End of each period

(C) Mid of each period

(D) Quarterly basis

37. _____ is the series of constant cash flows (CCF) over limited period of time?

(A) Perpetuity

(B) Annuity

(C) Present value

(D) Future value

38. A 5-year annuity due has periodic cash flows of Rs.100 each year. If the interest rate is 8 percent, the future value of this annuity is closest to which of the following equations?

(A) (₹100) (FVIFA at 8% for 5 periods)

(B) (₹100) (FVIFA at 8% for 4 periods) (1.08)

(C) (₹100) (FVIFA at 8% for 5 periods) +(1.08)

(D) (₹100) (FVIFA at 8% for 4 periods) + ₹100

39. Rental payment for apartment is an example of?

(A) Annuity due

(B) Perpetuity

(C) Ordinary annuity

(D) Consol

40. What is the value of Rs. 100 perpetuity if interest is 7%?

(A) ₹12,321

(B) ₹ 1,429

(C) ₹ 21,350

(D) None

41. If you want to deposit money into bank, what will be yours choice?

(A) Compounding annually

(B) Compounding semi-annually

(C) Compounding monthly

(D) Compounding daily

42. Which of the following is not the present value of the amount?

(A) Intrinsic value

(B) Market price

(C) Fair price

(D) Theoretical price

43. Which of the following expresses 6.5%?

(A) 0.0065

(B) 6.5

(C) 0.650

(D) 0.0650

44. If bank gives 12% rate of interest per year, then per month it will be?

(A) 1%

(B) 12%

(C) 5%

(D) 6%

45. If compounding is done for more time outcome will be greater value, it is a choice of?

(A) Borrower

(B) Lender

(C) Liabilities holder

(D) None

46. Time value of money indicates that:

(A) A unit of money obtained today is worth more than a unit of money obtained in future

(B) A unit of money obtained today is worth less than a unit of money obtained in future

(C) There is no difference in the value of money obtained today and tomorrow

(D) None of the above

47. Time value of money supports the comparison of cash flows recorded at different time period by:

(A) Discounting all cash flows to a common point of time

(B) Compounding all cash flows to a common point of time

(C) Using either A or B

(D) None of these

48. Required rate of return>Coupon rate, the bond will be valued at:

(A) Premium

(B) Par value

(C) Discount

(D) None on the above.

49. The value of bond and debenture is:

(A) Present value of interest payments it gets

(B) Present value of contractual payments it gets till maturity

(C) Present value of redemption amount

(D) None of these

50. PVIFA stands for:

(A) Present Value Interest Factor Annually

(B) Past Value Interest Factor of Annuity

(C) Present value of redemption annuity

(D) None of these

51. FVIF stands for:

(A) Future Value Interest Factor

(B) Facture Value Income Factor

(C) Firm Value Interest Factor

(D) None of these

52. A sum of money doubles itself in 10 years. The number of years it would triple itself is:

(A) 25 years

(B) 15 years

(C) 20 years

(D) None of these

53. The C.I on ₹16000 for 1 ½ years at 10% p.a payable half-yearly is:

(A) ₹ 2,222

(B) ₹ 2,522

(C) ₹ 2,500

(D) ₹ 8,522

54. The difference between the S.I and the C.I ₹24,00 for 2 years at 5% p. a is:

(A) ₹ 5

(B) ₹ 10

(C) ₹ 16

(D) ₹ 6

55. Interest rate is also known as:

(A) Nominal rate

(B) Present rate

(C) Base rate

(D) Coupon rate

56. YTM stands for.....

(A) Year to months

(B) Yield to maturity

(C) Yield to money

(D) None of these

57. Book value of shares can be calculated by.....

(A) Net Assets ÷ No. of existing equity shares

(B) Paid-up equity capital plus reserves & surplus ÷ No. of existing equity shares

(C) Both (A) & (B)

(D) Neither (A) nor (B)

58. XYZ ltd. Is expected to grow at a rate of 13.6% per annum and dividend expected a year hence is ₹10. If the rate of return is 24%. What is the price of the share today?

(A) ₹ 90

(B) ₹ 100

(C) ₹ 99 approx

(D) ₹ 96 approx

59. Anik ltd. has 16% debenture bond outstanding; the bond matures in 20 years period. The bond is callable in 10 years at 116. It currently sells for ₹125. Calculate current yield of bond.

(A) 12.8%

(B) 10%

(C) 15.2%

(D) 11.8%

60. For what purpose sinking fund can be used.....

(A) For replacement of assets

(B) For repayment of liabilities

(C) For redemption of bonds

(D) All of these

61. An annuity which is payable after a lapse of a number of intervals of time, is known as....

(A) Annuity contingent

(B) Deferred annuity

(C) Annuity due

(D) Annuity certain

62. How can the value of true discount be calculated in case of simple interest?

(A) True discount = AxRxT/(100+RT)

(B) True discount = RxT/amount

(C) True discount = 100 + interest/principal

(D) True discount = principle + interest

63. What will be the present value of annuity due of ₹4000 for 8 years @ 11% p. a rate of interest?

(A) ₹ 25,848

(B) ₹ 24,000

(C) ₹ 22,848

(D) ₹ 23,848

64. Discount is given on :

(A) List price

(B) Selling price

(C) Cost price

(D) None of these

65. By selling an item of ₹660 at ₹600. The rate of discount is:

(A) 10%

(B) 11%

(C) 9.09%

(D) 8.25%

66. Discount @ 10%+10% on an article sold for ₹100 is equivalent to:

(A) ₹ 20

(B) ₹ 10

(C) ₹ 19

(D) ₹ 15

67. The higher the future value (FV) of the payment, the higher will be the?

(A) Discount rate

(B) Liquidity

(C) Present value

(D) Cost of borrowing

68. Present value of a single amount is simply termed as current value of?

(A) Present payment

(B) Future payment

(C) Annuity payment

(D) Discount payment

69. What does net present value give?

(A) Future values of present cash flows

(B) Present values of present cash flows

(C) Present values of Future cash flows

(D) Future values of Future cash flows

70. What is the present value of ₹8,000 to be paid at the end of three years if interest rate is 11%?

(A) ₹ 5,850

(B) ₹ 4,872

(C) ₹ 6,725

(D) None of these

71. Interest paid (earned) on only the original principal borrowed (lent) is often referred to as?

(A) Compound interest

(B) Present value

(C) Future value

(D) Simple interest

72. Nominal Interest Rate is also known as?

(A) Annual percentage rate

(B) Effective interest rate

(C) Periodic interest rate

(D) Coupon rate

73. What will be the value of 'n' if the interest is compounded monthly?

(A) 2

(B) 4

(C) 10

(D) 12

74. A decrease in the supply for loanable funds, holding demand constant, will cause interest rates to?

(A) Increase

(B) Decrease

(C) Stays the same

(D) None of these

75. The value of money results from?

(A) Its backing

(B) Rates set by the state bank

(C) Its purchasing power

(D) None of the above

76. How can we calculate the amount of certain annuity due?

(A) A = $\frac{a\,(1+i)^n}{i}$ {1+i}

(B) A = $\frac{a\,(1+i)}{i}\{1+i\}^n - 1$

(C) A = $\frac{a}{(1+i)^n}$

(D) None of these

77. Present value of perpetuity can be calculated by.....

(A) P = $\frac{a}{i}$

(B) P = $\frac{a\,(i-1)}{a}$

(C) P = a $(1+i)^n$

(D) None of these

78. What is present value of a machinery worth ₹13,310 due after 3 years at 10% p. a compounded annually?

(A) ₹ 12,100

(B) ₹ 11,000

(C) ₹ 10,000

(D) ₹ 9,000

79. A company has borrowed ₹1,000 to be paid in 12 monthly installments of ₹94.56. Compute the annual Interest.

(A) 24%

(B) 18%

(C) 12%

(D) 2%

80. The date at which a borrower is to repay a loan or to redeem a bond is known as.....

(A) Issue date

(B) Maturity date

(C) Either A or B

(D) None of these

81. Base rate comprises of?

(A) Pure rate + default risk premium

(B) Pure rate + risk premium

(C) Pure rate + expected inflation rate

(D) Expected inflation rate + risk premium

82. If Re. 1amounts to Rs. 9 over a period of 20 years. What is the rate of simple interest?

(A) 262/3%

(B) 30%

(C) 271/2%

(D) 40%

83. What sum of money will produce Rs.70 as simple interest in 4 years at 31/2 percent?

(A) ₹ 525

(B) ₹ 500

(C) ₹ 550

(D) ₹ 555

84. At the rate 6% per annum simple interest after a months the amount due is ₹ 20,900. Find its present value.

(A) ₹20,000

(B) ₹ 18,000

(C) ₹ 20,100

(D) ₹19,500

85. Choose the correct option.

(A) Banker's gain = Banker's discount – True discount

(B) Banker's discount = Banker's gain – True discount

(C) True discount = Banker's gain – Banker's discount

(D) All of these

86. Discount percentage cab be calculated by:

(A) Discount % = $\frac{discount}{Selling\ Price} \times 100$

(B) Discount % = $\frac{discount}{100} \times Selling\ Price$

(C) Discount % = $\frac{gain}{Selling\ Price} \times 100$

(D) Discount % = $\frac{discount}{Merket\ Price} \times 100$

87. An asset worth ₹15,000depreciates at a rate of 10% p.a what will be its value after 3 years if diminishing rate is applied?

(A) ₹ 12,150

(B) ₹ 10,935

(C) ₹ 10,500

(D) ₹ 12,000

88. From the following particulars, calculate the profit/loss on the transactions:

Listed Price = ₹25000

Trade discount = 20%

Cost Price = ₹18,000

(A) Loss = ₹2,000

(B) Profit = ₹2,000

(C) Loss = ₹6,000

(D) Profit = ₹7,000

89. Calculate the value of money paid by the customer:

Listed = ₹50,000

Trade discount = ₹20%

Cash discount = 15%

(A) ₹ 32,500

(B) ₹ 30,000

(C) ₹ 40,000

(D) ₹ 34,000

90. Cash discount is given to.....

(A) Everyone

(B) To a limited customer

(C) Customer who pay the dues in a specified time

(D) None of the above

91. Profit can be calculated on:

(A) Cost price

(B) Selling price

(C) Both (A) or (B)

(D) Neither (A) nor (B)

92. YTC stands for.....

(A) Yield to call

(B) Yield to coupon

(C) Yield to compound

(D) None of these

93. Which of the following equation is correct?

(A) $FV_n = PV\ (1+r)$

(B) $FV_n = PVx\ [1 \div (1+r)]$

(C) $FV_n = PV\ (1+r)\ n$

(D) None of these

94. Time value of money is associated with:

(A) Risk

(B) Inflation

(C) Reinvestment opportunities

(D) All of the above

95. In how many years will amount gets doubled at rate of 8% p.a, using rule 72
    (A) 10 years
    (B) 9 years
    (C) 8 years
    (D) 7 years
96. Current yield can be calculated by.....
    (A) (Interest rate/current market) ×100
    (B) (Current market/Interest rate) ×100
    (C) (Interest rate/issue price) ×100
    (D) (Inflation rate/current market) ×100
97. What is the value of log10?
    (A) 0
    (B) 1
    (C) Infinite
    (D) 10
98. What is the value of $(1.08)^5$?
    (A) 1.469
    (B) 1.35
    (C) 2
    (D) 1.1
99. If the compounding is done quarterly, the value of rate will be:
    (A) Will be multiplied by 4
    (B) Added by 4
    (C) Subtracted by 4
    (D) Divided by 4
100. Relationship between S.I and C.I for one year is:
    (A) S.I > C.I
    (B) S.I < C.I
    (C) S.I = C.I
    (D) Insignificant value

******

**DO NOT OPEN THE QUESTION BOOKLET UNTIL ASKED TO DO SO**

1. Examinee should enter his / her roll number, subject and Question Booklet Series correctly in the O.M.R. sheet, the examinee will be responsible for the error he / she has made.
2. **This Question Booklet contains 100 questions, out of which only 75 Question are to be Answered by the examinee. Every question has 4 options and only one of them is correct. The answer which seems correct to you, darken that option number in your Answer Booklet (O.M.R ANSWER SHEET) completely with black or blue ball point pen. If any examinee will mark more than one answer of a particular question, then the first most option will be considered valid.**
3. Every question has same marks. Every question you attempt correctly, marks will be given according to that.
4. Every answer should be marked only on Answer Booklet **(O.M.R ANSWER SHEET).**Answer marked anywhere else other than the determined place will not be considered valid.
5. Please read all the instructions carefully before attempting anything on Answer Booklet**(O.M.R ANSWER SHEET).**
6. After completion of examination please hand over the Answer Booklet **(O.M.R ANSWER SHEET)** to the Examiner before leaving the examination room.
7. There is no negative marking.

**Note:** On opening the question booklet, first check that all the pages of the question booklet are printed properly in case there is an issue please ask the examiner to change the booklet of same series and get another one.