## MaXPREP ${ }^{\circ}$ CA-CPT-SAMPLE TEST

INSTRUCTIONS TO TEST TAKERS

You are advised to be sure about the correct answer before you darken the circle with pen. You should also ensure that each circle is completely darkened with pen. Partially or faintly darkened circles may be rejected by the optical scanner.

Each question carries 1 mark. 0.25 mark will be deducted for every incorrect response.
If you darken more than one circle, it will be deemed to be an incorrect answer.
The areas tested in this examination are given below in the table:

| Session |  | Subject | No. of Questions | Marks | Time |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Session I I | Section A | Fundamentals of Accounting | 20 | 10 |  |
|  | Section B | Mercantile Law | 10 | 15 | 90 |
| Session II | Section C | General Economics | 15 | 15 |  |
|  | Section D | Quantitative Aptitude | 20 | 20 |  |
|  | Total |  |  |  | $\mathbf{6 5}$ |

Do your scratch work on the space available in the test booklet itself. Do not use any additional paper for rough work.

Calculators are allowed.
After you finish taking the test, score it with the help of the Answer Key provided.
The correct way of shading the circles.


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## SCORE SHEET

## Instructions

- Use pen on this sheet.
- Darken the circles fully.
- Do not make any stray marks on this sheet.

Mark Your Answers Here

|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | ${ }^{27} 0000$ | ${ }^{40} 0000$ | ${ }^{53} 0000$ |
| 000 | ${ }^{15} 0000$ | ${ }^{28} \mathrm{OOOO}$ | ${ }^{41} \mathrm{OOOO}$ | ${ }_{54} \mathrm{O}$ |
| O | ${ }^{16} 0000$ | ${ }^{29} 0000$ | 42 OOOO | OO |
| 0000 | ${ }^{17} 0000$ | ${ }^{30} 0000$ | ${ }^{43} \mathrm{OOOO}$ | ${ }^{56} \mathrm{OOO}$ |
| 5000 | ${ }^{18} 0000$ | ${ }^{31} \mathrm{OOOO}$ | 44 OOOO | ${ }^{57} \mathrm{OOO}$ |
| O000 | ${ }_{19} 0000$ | ${ }^{32} \mathrm{OOOO}$ | 45 OOOO | ${ }_{58} \mathrm{O}$ |
| 0000 | ${ }^{20} 0000$ | ${ }^{33} \mathrm{OOOO}$ | ${ }^{46} \mathrm{OOOO}$ | O |
| OO | ${ }^{21} 0000$ | ${ }^{34} \mathrm{OOOO}$ | ${ }^{47} \mathrm{OOOO}$ | ${ }^{60} 0000$ |
| -0000 | 220000 | ${ }^{35} \mathrm{OOOO}$ | 48 OOOO | 0000 |
| OOO | ${ }^{23} \mathrm{OOOO}$ | ${ }^{36} \mathrm{OOOO}$ | 49 OOOO | 2 O |
| 000 | ${ }^{24} \mathrm{OOOO}$ | ${ }^{37} 0000$ | ${ }^{50} \mathrm{OOOO}$ | ${ }^{63} \mathrm{OOOO}$ |
| 0 | ${ }_{25}^{25000}$ | ${ }^{38} \mathrm{OOOO}$ | ${ }^{51} \mathrm{OOOO}$ |  |
| O | ${ }_{26} \mathrm{O}$ | ${ }^{39} \mathrm{OOOO}$ | 52 OOOO |  |

CA - CPT

## G3ssion-

## Section-A - Fundamentals of Accounting <br> Number of Questions - 20 <br> Total Marks - 20

DIRECTIONS for questions 1 to 5: Choose the correct alternatives.

1. Rakesh \& Co. Ltd. issued Rs. $1,00,000,11 \%$ debentures at $96 \%$ redeemable at the end of 10 years at $104 \%$. The entry is:
a] Bank A/c...
Dr.
96,000
Discount on Issue of Debentures A/c......Dr.
4,000
Loss on Issue of Debentures A/c............Dr. 4,000
To $11 \%$ Debenture A/c 1,00,000
To Premium on Redemption of Debenture A/c 4,000
b] Bank A/c
Dr
96,000
To $11 \%$ Debenture A/c 96,000
c] Bank A/c.
Dr.
96,000
Discount on Issue of Debentures A/c......Dr.
4,000
To $11 \%$ Debenture A/c
1,00,000
d] Bank A/c
Dr
Discount on Issue of Debentures A/c......Dr.
96,000
Loss on Issue of Debentures A/c............Dr.
4,000
To $11 \%$ Debenture A/c
1,02,000
2. Suresh and Ramesh are sharing profits and losses equally. They agreed to admit Umesh with $1 / 5$ th share in partnership. He agreed to bring in cash his share of goodwill. It was decided to value goodwill as per Capitalization method. The past profits of the firm for five years are as follows:

| Year | Profits |
| :--- | :--- |
| 2002 | 30000 |
| 2003 | 40000 |
| 2004 | 50000 |
| 2005 | 60000 |
| 2006 | 70000 |

Rate of normal profit is $10 \%$. On 31/12/2006 Capital employed was Rs.400000. Calculate the amount of cash that Umesh will bring as his share of goodwill.
a] Rs. 166000
b] Rs. 100000
c] Rs. 166670
d] None of these
3. Following is the extract of Balance Sheet of Chocolate Ltd.

80,000 Equity shares of Rs. 10 each, Rs. 7.5 paid up 2,500 Preference shares of Rs. 100 each, Rs. 80 paid up Securities premium
Capital Reserve General reserve Capital Redemption Reserve

Rs.6,00,000
Rs.2,00,000
Rs.10,000
Rs.1,00,000
Rs.3,50,000
Rs.1,50,000

It was decided to convert the partly paid up equity shares into fully paid up without requiring the share holders to pay for the same.
Write Journal entry for utilization of reserves for this purpose.
a] Capital Redemption Reserve $\mathrm{A} / \mathrm{c}$.
General Reserve A/c
Dr 50,000
To Bonus to Equity Shareholders A/c
b] Capital Redemption Reserve A/c. $\qquad$
Securities Premium A/c
1,50,000
10,000
General Reserve A/c
Dr
40,000
To Bonus to Equity Shareholders A/c
2,00,000
c] Securities Premium A/c..............................Dr
Capital Reserve A/c....................................Dr
General Reserve A/c...................................Dr
To Bonus to Equity Shareholders A/c
10,000
1,00,000
90,000
2,00,000
d] Capital Redemption Reserve A/c...............Dr
Capital Reserve A/c.....................................Dr
To Bonus to Equity Shareholders A/c

1,50,000
50,000
2,00,000
4. Raj, Rohit, Rohan were partners sharing profits \& losses equally. They had a Fixed Capital of Rs. $1,00,000$; Rs. 80,000 ; Rs. 45,000 respectively. The partners were given interest on their Capital @ $6 \%$ p.a. At the end of year 2007, partners' A/c were wrongly credited @ 7\% instead of $6 \%$ for interest.
What will be the Adjusting Entry in the Books of Accounts for above error?
a] Suspense $\mathrm{A} / \mathrm{c}$
Dr.
2,250
To Raj's Capital A/c
1,000
To Rohit's Capital A/c
800
To Rohan's Capital A/c
450
b] Raj's Current A/c......................... Dr. 1,000
Rohit's Current A/c......................... Dr.
800
Rohan's Current A/c................... Dr. 450
To Suspense A/c
2,250
c) Raj's Capital A/c
Dr.
1,000
Rohit's Capital A/c........................ Dr.
800
Rohan's Capital A/c................... Dr.
450
To Profit \& Loss A/c
2,250
d) Profit \& Loss A/c..............................Dr.
2,250
To Raj's Current A/c 1,000
To Rohit's Current A/c 800
To Rohan's Current A/c 450
5. Calculate the amount, petty cashier will get, at the beginning of August 2007, if the Petty Cash Book is maintained as per Imprest System. Following are the transactions that took place in the month of July 2007.
July 1 - Petty Cash in hand Rs. 500
July 3 - Paid Rs. 36 for taxi fare.
July 6 - Paid Rs. 17 for sundries.
July 11 - Paid Rs. 56 to Mr. Smith who is a Creditor.
July 12 - Paid advance salary of Rs. 350 to a worker.
July 16 - Paid Rs. 22 for Printing and Stationery.
July 22 - Paid Rs. 7 for purchasing stamps.
July 23 - Purchased goods of Rs. 1000 from Mr. Salil.
July 27 - Paid Rs. 10 for courier charges.
a] Rs. 408
b] Rs. 92
c] Rs. 352
d] Rs. 144

## DIRECTIONS for questions 6 to 10: Read the following case study and answer the questions given below.

The Trial Balance showed a shortfall of Rs.1,481 in the debit column and is made to agree by putting this difference against Suspense Account. Later, the following errors were discovered.
i] Goods worth Rs. 350 were sold to Rohan on credit. This was recorded in the Sales book but was not posted to Rohan's A/c in the ledger.
ii] Goods worth Rs. 115 were returned by Akash. The amount was credited to his account but was not entered in the Return Inward book.
iii] Kirti Boutique paid Rs. 150 but their account was credited for Rs. 105 .
iv] Goods costing Rs. 425 purchased from Neev were wrongly entered in the Sales book.
v] An amount of Rs. 500 owed from Sujith was omitted by the list of Sundry Debtors.
vi] The Purchase book was overcast by Rs. 159 .
vii] Cash Rs. 670 paid to Shashank and Rs. 760 to Sudhakar was debited to Shashank by Rs. 760 and Sudhakar by Rs. 670.
viii] A cheque of Rs. 210 issued to Mr. Kapoor was entered in the Bank column of the Cash book on the payment side and was posted to his credit in the ledger.
ix] An account of Rs. 175 due from Rinku, which had been written off as Bad debts in the previous year, was unexpectedly recovered and had been posted to her Personal account.
x] Discount allowed Rs. 150 was credited to Discount received account.
xi] A cheque for Rs. 950 received from Upen was dishonored and had been posted to the debit of the Sales Return account.
6. What will be the rectifying entry for transaction (v)?
a] Sundry Debtors A/c........Dr. 500
To Sales A/c.
500
b] Sundry Debtors A/c.......Dr. 500 To Suspense A/c.
c] Sales A/c.....................Dr. 500 To Sundry Debtors A/c.

500
d] Suspense A/c..............Dr.
500
To Sundry Debtors A/c.
500
7. What will be the impact on Net profit?
a] Net profit is decreased by Rs. 19
b] Net profit is increased by Rs. 19
c] Net profit is decreased by Rs. 434
d] Net profit is increased by Rs. 434
8. What will be the change in balance of Sundry Debtors?
a] Increase by Rs. 380
b] Decrease by Rs 380
c] Increase by Rs.1,330
d] Decrease by Rs. 1330
9. What is the total of Suspense A/c?
a] Rs.1,061
b] Rs. 965
c] Rs.1,685
d] Rs.1,465
10. What will be the change in balance of Sundry Creditors?
a] Increase by Rs. 835
b] Decrease by Rs. 835
c] Increase by Rs. 165
d] Decrease by Rs. 165

## Directons for questions 11 to 13: Refer to the data below and answer the questions that follow.

M/s M Ltd. closed their books of accounts on $31 / 3 / 08$. There was a difference in the Balance Sheet which they transferred to Suspense A/c. After the accounts were closed, following errors were identified:-
i] Purchase Book was overcast by Rs. 4000 .
ii] Wages of Rs. 500 paid for installing machinery were debited to Wages A/c.
iii] Ramesh, an employee, had taken stock worth Rs. 3000 on the eve of Diwali. It was debited to Ramesh's A/c and credited to Purchase A/c.
iv] Goods of Rs. 2000 purchased on credit from Aman were recorded in Sales Day Book and goods of Rs. 8000 sold to Amar on credit were recorded in Purchase Day Book. However, Aman and Amar A/c were correctly posted in the ledger.
11. How much amount was transferred to Suspense A/c from the Balance Sheet and on which side?
a] Rs. 10000 credit
b] Rs. 5000 debit
c] Rs. 3000 debit
d] Rs. 8000 credit
12. What will be the Rectification entry for error no. iv)?
a] Suspense A/c........Dr. 10000
To Aman's A/c. 2000
To Amar's A/c. 8000
To Aman's A/c. 4000
c] $\begin{aligned} & \text { Suspense A/c.........Dr. } 12000 \\ & \text { To Profit and loss } \\ & \\ & \text { Adjustment A/c. }\end{aligned} \quad 12000$
b) Amar's A/c.......Dr. 16000
To Purchases A/c. 6000
To Sales A/c. 6000
d] Suspense A/c.....Dr. 12000
To Sales A/c. 6000
To Purchases A/c. 6000
13. What will be the effect on Net profit after Rectification?
a] Net profit will increase by Rs. 4500
b] Net profit will increase by Rs. 3000
c] Net profit will decrease by Rs. 3000
d] Net profit will decrease by Rs. 5000

## DIRECTIONS for questions 14 and 15: Choose the correct alternative.

14. Mr. Parmeshwar has two accounts (A/c No. 1 and A/c No.2) with Punjab National Bank. On 31.12.07 his ledger showed a balance of Rs.6,550 in A/c no. 1 and an overdraft of Rs.3,000 in $\mathrm{A} / \mathrm{c}$ no.2. On comparing ledger entries with the respective Bank pass book, the following discrepancies were noticed.
i) The deposit of Rs.1,000 made into A/c no. 1 on 25th December has been entered in the Ledger in A/c no.2.
ii) A withdrawal of Rs. 400 from A/c no. 1 on 28th December has been entered in the Ledger in $\mathrm{A} / \mathrm{c}$ no.2.
iii) Transfer of Rs. 500 from A/c no. 1 to A/c no. 2 were recorded by the bank on 31st December but entered in the Ledger on 2nd January.
Calculate balance as per Pass book (A/c no. 1 \& A/c no.2).
a] Rs.6,550 Dr; Rs.3,000 Cr.
b] Rs.6,550 Cr; Rs.3,000 Dr.
c] Rs.6,550 Dr; Rs.3,000 Dr.
d] Rs.6,550 Cr; Rs.3,000 Cr.
15. Ajay \& Co. sent 50 cases of Soaps valued at Rs. 200 each to Amar for sale on consignment basis. Ajay \& Co. paid freight and insurance Rs.200. Each case contained 40 packets. Amar sold 1,300 packets @ Rs. 8 each partly on credit and partly on cash. Amar was entitled to $5 \%$ normal commission and $1 \%$ del-credre commission. One customer who had purchased 100 packets had paid only for 75 packets and the balance had become a bad debt.

Calculate the amount of Profit or Loss on Consignment?
a] Rs. 9776
b] Rs.3,146
c] Rs.5,654
d] Rs.4,995

## DIRECTIONS for questions 16 to 20: Read the following case study and answer the questions given below.

Following are the transactions for the year ended 31st March;2004-
i] Sales of Rs. 4,000 (cost price Rs.3000), included in closing stock.
ii] Rs.2,500 withdrawn by the proprietor for his personal use was debited to office expenses.
iii] Salary of Rs. 5,000 for the month of March, 04 taken by Mr. X in advance in the month of Feb,04, was debited to Salary A/c.
iv] A bill of Mr. Y, dishonored on 28th Dec,2003 of Rs.10,100 was debited to Bills receivable $\mathrm{A} / \mathrm{c}$ and credited to Bank A/c.
v] Reimbursement of personal expenses Rs. 7700 of an employee is debited to office expenses A/c.
vi] Wages of Rs. 9,800 paid to the workers for installing the machinery was debited to Wages \& Salaries A/c.
16. What will be the impact on net profit-
a] Increased by Rs. 12300
b] Increased by Rs. 2500
c] Decreased by Rs. 17300
d] Increased by Rs. 98
17. What will be the the impact on the total of Liabilities after passing rectification entries?
a] Increase by Rs. 9,800
b] Decrease by Rs.2,500
c] No change
d] Increase by Rs.12,300
18. What is the impact of the above transactions on assets?
a] Increase by Rs. 8,700
b] Decreased by Rs.10,100
c] No change
d] None of these
19. What is the rectification entry for transaction four?
a] Drawee (Debtors).........Dr. 10,100
b] Bank A/c
Dr. 10,100
To Bills receivable $\quad 10,100$
To Bills receivable
10,100
c] Bills receivable.............Dr. 10,100
To Drawee's A/c 10,100
d] Drawee A/c. $\qquad$ Dr 10,100
To Bank A/c
10,100
20. What is the rectification entry for transaction six?
a] Wages \&Salaries $\mathrm{A} / \mathrm{c}$ $\qquad$ Dr.
9,800
To Bank A/c
9,800
b] Machinery A/c..................Dr. 9,800
To Wages \&Salaries A/c 9,800
c] Machinery A/c...................Dr. 9,800
To Bank A/c 9,800
d] No Entry

## Section-B - Mercantile Law <br> Number of Questions - 10 <br> Total Marks - 10

DIRECTIONS for questions 21 to 30: Choose the correct alternative.
21. Which of the following is an exception to the rule that "an agreement in restraint of trade is void"?
a] Agreement in restraint of marriage
b] Agreement in restraint of carrying of trade after sale of goodwill
c] Agreement in restraint of legal proceedings
d] Agreements of trading with enemy
22. Remission is the acceptance of:
a] a lesser sum than what was contracted for
b] a lesser fulfillment of the promise made.
c] Either [a] or [b]
d] Neither [a] nor [b]
23. Henry entered into a hire purchase agreement with Sam in relation to a television for Rs.20,000/ - on condition that on paying 12 installments of Rs.2,000/- each the TV would be the property of Henry. After paying 6 installments Henry pledged the television with Richard, who took it in good faith. Sam wants to recover the television from Richard. Which of the following statement(s) is/are correct?
a] Sam can recover the television from Richard.
b] Sam cannot recover the television from Richard.
c] Sam can only recover the price of the television from Henry.
d] Henry can validly transfer the title of the television to Richard.
24. Cundy V. Lindsay case deals with:
a] Coercion
b] Undue Influence.
c] Mistake as to the nature of transaction.
d] Mistake as regards identity.
25. When the performance of a contract becomes impossible, the purpose which the parties had in mind is frustrated. If the purpose becomes impossible because of supervening event, the promisor is excused from the performance of the contract. This is known as $\qquad$ _.
a] Doctrine of frustration.
b] Initial impossibility.
c] Lapse of time.
d] Operation of law.
26. Which of the following is NOT considered as an exception to the doctrine of caveat emptor?
a] where the seller knowingly conceals the defect which could be discovered on a reasonable examination.
b] where sale is by description and sample
c] where buyer has disclosed the purpose
d] where goods are bought by description from a seller dealing in goods of that description.
27. Which is not correct?
a] unless otherwise agreed, each of joint promisors may compel every other joint promisor to contribute equally with himself to the performance of the promise.
b] If anyone of the joint promisors makes default in making contribution, the remaining joint promisors must bear the loss arising from such default equally.
c] A release of one of the joint promisors by the promisee does not discharge the other joint promisor.
d] A release of one of the joint promisors by the promisee frees joint promisor so released from responsibility to the other joint promisor (s).
28. $\mathrm{X}, \mathrm{Y}$ and Z are partners in a software business. They jointly promise to pay Rs.30,000 to A. Over a period of time Y became insolvent, but his assets are sufficient to pay $1 / 4$ ' of his debts. Z is compelled to pay the whole.
a] Z has to bear the entire amount of liability
b] X has to bear the entire loss arising out of Y's insolvency
c] X and Z have to bear equally, the loss arising out of Y 's insolvency
d] Z can recover back the entire amount from A .
29. Mr.X purchased a used computer from Mr. Y thinking it as a computer imported from England, Mr. Y failed to disclose the fact to Mr. X. On knowing the fact Mr. X wants to repudiate the contract. Which of the following statement is correct?
a] Mr. X can repudiate the contract on the ground of fraud.
b] Mr. X can repudiate the contract on the ground of misrepresentation.
c] Mr . X cannot repudiate the contract.
d] Mr. X can repudiate the contract on the ground of mistake.
30. The foundation of modern law of damages was laid down in:
a] Tinn v. Hoffman.
b] Taylor v. Caidwell.
c] Hadley v. Baxendale.
d] Addis v. Gramophone Co.

## END OF SESSION-I

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## SESSION-II

## Section-C - General Economics <br> Number of Questions - 15 Total Marks - 15

## DIRECTIONS for questions 31 to 45: Choose the correct alternative.

31. How do we define Gross National Product at Market Price?
a] It is the market value of final goods and services produced in the domestic territory of a country by normal residents during an accounting year including net factor income from abroad
b] It is defined as the market value of output of final goods and services produced by normal residents of an economy in its domestic territory during an accounting year exclusive of depreciation and inclusive of net factor income from abroad
c] It is defined as the market value of final goods and services produced in the domestic territory for a country by its normal residents and non residents during an accounting year less of depreciation.
d] None of these.
32. Arc elasticity of demand can be defined as follows:
a] Price elasticity at a single point on the demand curve
b] Price elasticity of demand between two points on the demand curve
c] Both [a] and [b]
d] None of these
33. Which of the following conditions must be satisfied for the consumer to be in equilibrium?
a] $\frac{\mathrm{MUx}}{\mathrm{MUy}}>\frac{\mathrm{Px}}{\mathrm{Py}}$
b] $\frac{M U x}{M U y}<\frac{P x}{P y}$
c] $\frac{M U x}{M U y}=\frac{P x}{P y}$
d] None of these
34. Which principle of Financial Inclusion has been adopted in the 2008-09 Budget?
a] Commercial Banks to include at least 250 rural households
b] To include retired bank officials, ex-service men to act as Business Correspondents
c] Both [a] and [b]
d] None of these
35. An example of double counting in national income would be:
a] Wages of bus and train driver
b] Cotton output and cotton cloth output
c] Electricity output and solar output
d] Tax receipts and earning of Inland Revenue officials
36. TRIPs means:
a] Trade related intellectual properties
b] Trade related investment properties
c] Trade related Indian properties
d] Trade related international Payments
37. Which theory of Consumer Behavior explains the Giffen Paradox?
a] Marshall's Theory
b] Hick's Theory
c] Both [a] and [b]
d] None of these
38. 'Market Period' refers to:
a] The period in which the producers of a good cannot change the quantity produced in response to a change in price
b] The period in which the producers of a good can change the costs of the quantity produced in response to a change in price
c] The time it takes for the market to attain equilibrium
d] The time it takes for the consumers to respond to change in the price
39. What is the approximate length of the National Highways of India?
a] $66,590 \mathrm{~km}$
b] $24,268 \mathrm{~km}$
c] $42,344 \mathrm{~km}$
d] $12,468 \mathrm{~km}$
40. The LAC curve:
a] falls when the LMC curve falls
b] rises when the LMC curve rises
c] passes through the lowest point of the LMC curve
d] falls when LMC < LAC and rises when LMC > LAC
41. What is Phillips Curve?
a] A tradeoff between the rate of unemployment and the rate of inflation in an economy.
b] A tradeoff between the rate of money supply growth and GDP growth in an economy.
c] A tradeoff between the rate of unemployment and the rate of literacy in the economy.
d] A tradeoff between the rate of GDP growth and the rate of inflation in the economy.
42. M1 in the money stock refers to:
a] Post office saving deposits
b] Currency plus demand deposits plus other deposits with RBI
c] Time Deposits with Banks
d] National Savings certificates
43. Adam Smith's concept of invisible hand postulates the following:
a] Putting in place a system of government regulations and control is most conducive to promoting the interests of the society
b] An individual pursuing his own self-interest tends to promote the good of his community as well.
c] Having a system of public enterprises side by side with private enterprises is most conducive to promoting the interests of society
d] By perusing the interests of marginalized sections of the population it is possible to promote the good of the society
44. Mahalanobis model stressed upon the establishment of:
a] Consumer goods industries
b] Export oriented industries
c] Agro based industries
d] Capital and basic goods industries
45. When is an allocation said to be Pareto Efficient?
a] There is no other allocation in which some other individual is better off and no individual is worse off
b] The disadvantaged sections of the society are better off.
c] The administrative cost involved is minimum
d] The tax burden is equitable distributed.

## Section-D - Quantitative Aptitude <br> Number of Questions - 20 <br> Total Marks - 20

DIRECTIONS for questions 46 to 65: Choose the correct alternative.
46. If $y=\sqrt{\sin x+\sqrt{\sin x+\sqrt{\sin x+\ldots \infty}}}$, then the value of $\frac{d y}{d x}$ is:
a] $\frac{\sqrt{\sin x}}{y+1}$
b] $\frac{\sin x}{y+1}$
c] $\frac{\cos x}{2 y+1}$
d] $\frac{\cos x}{2 y-1}$
47. If the coefficient of correlation between the two variables, X and Y , is 0.5 , their covariance is 10 and the variance of X variate is 25 , find the standard deviation of Y variate.
a] 6
b] 3
c] 5
d] 4
48. $\frac{\mathrm{d}}{\mathrm{dx}}\left(\cos ^{-1} \mathrm{x}+\sin ^{-1} \mathrm{x}\right)=$ ?
a] $\frac{\pi}{2}$
b] 0
c] $\frac{2}{\sqrt{1-x^{2}}}$
d] None of these
49. In measuring reaction time, a psychologist estimated that the standard deviation is 1.08 seconds. What should be the size of the sample in order to be $99 \%$ confident that the error of her estimates of mean would not exceed 0.18 seconds?
a] 280
b] 340
c] 180
d] 240
50. The first term of an AP is 17 , the last term is $-12 \frac{3}{8}$ and the sum of all terms is $25 \frac{7}{16}$. Find the common difference.
a] $-\frac{235}{80}$
b] $\frac{235}{80}$
c] $\frac{235}{40}$
d] $-\frac{235}{40}$
51. Calculate the regression coefficients for the following information: $\sum \mathrm{X}=50, \Sigma \mathrm{Y}=30, \Sigma \mathrm{XY}=1000, \Sigma \mathrm{X}^{2}=3000, \Sigma \mathrm{Y}^{2}=180, \mathrm{~N}=10$.
a] $0.463,0.512$
b] $0.309,0.497$
c] $0.497,0.213$
d] $0.309,0.621$
52. $\lim _{n \rightarrow \infty}\left[\frac{1}{1-n^{2}}+\frac{2}{1-n^{2}}+\ldots+\frac{n}{1-n^{2}}\right]=$ ?
a] 0
b] $-\frac{1}{2}$
c] $\frac{1}{2}$
d] None of these
53. It is known that $30 \%$ of the population was educated in the year 1963 and $55 \%$ in the year 1983. If the percentage of educated population depends linearly upon the year, then the estimated educated population in the year 2003 is?
a] $70 \%$
b] $80 \%$
c] $90 \%$
d] $75 \%$
54. A two-digit number is such that the units digit is 2 more than its tens digit. Find the number, if the positive difference between the number and number formed by interchanging the digits is 5 more than the number itself.
a] 13
b] 24
c] 35
d] 57
55. Calculate Laspeyre's index number of price from the following data

|  | Base Year (2004) |  | Current Year (2005) |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Kilo | Rate (Rs) | Kilo | Rate (Rs) |
| Wheat | 10 | 3 | 8 | 3.25 |
| Sugar | 20 | 15 | 15 | 20 |
| Rice | 2 | 25 | 3 | 23 |

a] 136.5
b] 112.4
c] 162.8
d] 125.9
56. If $\mathrm{a}=\sqrt[3]{\sqrt{2}+1}-\sqrt[3]{\sqrt{2}-1}$, then : $\mathrm{a}^{3}+3 \mathrm{a}-2=$ ?
a] 3
b] 0
c] 2
d] 1
57. The average number of customers, who appear at a counter of a certain bank per minute is two. Find the probability that during a given minute three or more customers appear. [Given that $\mathrm{e}^{-2}=0.1353$ ]
a] 0.5235
b] 0.2235
c] 0.4235
d] 0.3235
58. If $m=a+b, n=b+c, p=c+a$, then $: \sqrt[m]{\frac{x^{a^{2}}}{\mathrm{x}^{2}}} \times \sqrt[n]{\frac{\mathrm{x}^{b^{2}}}{\mathrm{x}^{c^{2}}}} \times \sqrt[p]{\frac{\mathrm{x}^{c^{2}}}{\mathrm{x}^{a^{2}}}}=$ ?
a] -1
b] 0
c] 1
d] 2
59. An electronic device is made up of three components A, B and C. The probability of the failure of component A is 0.01 , that of B is 0.1 and that of C is 0.02 in some fixed period of time. Find the probability that the device will work satisfactorily during that period of time assuming that the three components work independently of one another.
a] 0.953
b] 0.783
c] 0.721
d] 0.873
60. $\int \frac{\mathrm{dx}}{\left(1+\mathrm{x}^{2}\right) \sqrt{1-\mathrm{x}^{2}}}=$ ?
a] $\frac{1}{2} \tan ^{-1}\left(\frac{\sqrt{2} x}{\sqrt{1-x^{2}}}\right)+C$
b] $\frac{1}{\sqrt{2}} \tan ^{-1}\left(\frac{\sqrt{2} \mathrm{x}}{\sqrt{1+\mathrm{x}^{2}}}\right)+\mathrm{C}$
c] $\frac{1}{\sqrt{2}} \tan ^{-1}\left(\frac{\sqrt{2} x}{\sqrt{1-x^{2}}}\right)+C$
d] None of these
61. Out of a consignment of 10000 tennis balls, 200 were selected at random and examined and it was found that 20 of these were defective. How many defective balls can you reasonably expect to have in the whole consignment at $95 \%$ confidence level?
[ Z at $95 \%$ confidence level $=1.96$ ]
a] 588 to 1412
b] 1000 to 1412
c] 588 to 1000
d] 678 to 1312
62. The following results were obtained from the analysis of data on two variables X and Y : $\overline{\mathrm{X}}=20, \overline{\mathrm{Y}}=15$, Standard deviation of $\mathrm{X}=4$, Standard deviation of $\mathrm{Y}=3$; r , the Coefficient of correlation $=0.7$. Obtain the likely value of Y , when $\mathrm{X}=24$.
a] 15.7
b] 16.3
c] 18.2
d] 17.1
63. Calculate the value of median for the data given below:

| Income ('000) | $0-1$ | $1-2$ | $2-3$ | $3-5$ | $5-10$ | $10-25$ | $25-50$ | $50-100$ | $100-1000$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. of persons | 13 | 90 | 81 | 117 | 66 | 27 | 6 | 2 | 2 |

a] 3308
b] 3715
c] 2937
d] 4153
64. A problem in statistics is given to two students A and B. The odds in favour of A solving the problem are 6 to 9 ; and against $B$ solving the problem are 12 to 10 . If $A$ and $B$ attempt, find the probability of the problem being solved.
a] $\frac{18}{55}$
b] $\frac{37}{55}$
c] $\frac{28}{55}$
d] $\frac{27}{55}$
65. A population has a mean of 159.7 cms . and standard deviation of 4.5 cms . How large a sample would be necessary to make the standard error of the mean less than 0.5 cm ?
a] 81
b] 9
c] 27
d] 3

## END OF SESSION-II

