XBC - 401 / XBI – 401 / XBS – 401/ MBH – 405 / PBH - 404 / BBA – 406 / BOV – 405 / BCH – 407 / ESE – 401

Roll No. .....

End Semester (Even) Examination, June 2024

Course: BCA / B.Sc (IT) / B.Sc (CS) / B.Sc (H) Maths / B.Sc (H) Physics / BBA / B.Voc in Accounting and Finance / B.Com (H) / BA (H) English

Subject: Career Skills **Semester - 4th**

Time: 3:00 Hours **MM: 100**

1. This question paper has 100 questions. Attempt all questions.
2. Each question carries equal marks.
3. It is compulsory to write the SET on the OMR.
4. Use of calculator is not allowed.
5. There is no negative marking for incorrect response.

Q1. What is the unit digit of $357^{59} \times 59^{357}$
a. 1 b. 3 c. 7 d. 5

Q2. If the unit digit of $(12345\ k)^{76}$ is 1, then the value of k can be:
a. 1 b. 3 c. 7 d. All

Q3. Find the number of factors of $2^4 \times 3^4 \times 7^2$ that are even.
a. 20 b. 25 c. 60 d. 50

Q4. Find the total number of factors of 2160.
a. 26 b. 40 c. 48 d. 68

Q5. N on dividing 50, 75 and 125 leaves a remainder of 2, 3 and 5 respectively. What is the largest value that N can take?
a. 24 b. 12 c. 18 d. 10

Q6. Find the HCF of 3/5, 6/5 and 18/7 is
a. 1/35 b. 2/15 c. 3/7 d. 3/35

Q7. How many distinct values can x assume if 28357x4 is divisible by 8?
a. 2 b. 3 c. 4 d. 5

Q8. How many pairs of numbers exist such that HCF 6 and LCM is 216?
a. 1 b. 2 c. 3 d. 0

Q9. A number when divided by 15, gives a remainder of 11. Find the remainder when twice the number is divided by 3?
a. 0 b. 1 c.2 d. cannot be determined

Q10. Find the largest three-digit number that will give a remainder of 4 when divided by 5, 6, 8?
a. 960 b. 996 c. 964 d. 984

Q11. A car travels the first one-third of a certain distance with a speed of 10 kmph, the next one-third of the distance with a speed of 20 kmph and the last one-third distance at 60 kmph. Find the average speed of the car for the whole journey.
a. 18 kmph b. 20 kmph c. 25 kmph d. 30 kmph

Q12. A man covers equal distances at a speed of 30 kmph and 60 kmph. Find his average speed.
a. 40kmph b. 45 kmph c. 50 kmph d. Data Inadequate

Q13. A tank, which usually takes 5 hours to be filled, takes 6 hours to fill because of a leak. Find the time in which the leak can empty the tank if it is filled and the inlet pipe is shut.
a. 30hrs b. 27.5hrs c. 25hrs d. 22.5hrs

Q14. Three taps A, B and C can fill a tank individually in 10 hrs, 20 hrs and 25 hrs respectively. At first all the taps are opened simultaneously. After 2 hours tap C is closed and after further 2 hours tap B is also closed. Tap A is kept open till the tank gets completely filled. What fraction of the tank is filled by tap A?

a. 2 /11 b. 9 /11 c. 18 /25 d. 7 /25

Q15. A and B can complete a work working individually in 60 days and 40 days respectively. Both start working simultaneously on the work simultaneously, but 4 days before the work is scheduled to get over, B leaves. Find the total number of days taken for the work to be completed.

a. 24 b. 25 c. 26.4 d. 28.2

Q16. A is thrice as efficient as B and hence takes 12 days less to complete a work as compared to B. Find the number of days in which they can complete the work while working together?

a. 3 b. 4.5 c. 6 d. 6.5

Q17. A and B can finish a work in 10 days when working together. B and C working together can finish the same work in 12 days and A and C working together can finish the work in 15 days. In how many days will the work get over if all three A, B and C work together?

a. 5 b. 6 c. 8 d. 4

Q18. If 4 boys or 3 men can complete a piece of work in 10 days how many days will it take for 4 men and 3 boys to finish the work?

a. 4.8 days b. 5 c. 6 d. None of these

Q19. 20 Men can do a piece of work in 25 days. How many men are needed to complete the same work in 50 days?

a.10 b. 15 c. 8 d. 12

Q20. A is twice as good as B, if together they can complete a piece of work in 4 days. In how many days can B alone complete the same work?

a.9 b. 12 c. 15 d. 18

Q21. S is the smallest 3 digit number which gives remainders of 3 and 1 when divided by 6 and 7 respectively. Find the sum of the digits of S?

a. 5 b. 6 c. 7 d. 8

Q22. A certain sum of money becomes 2 times itself in 4 years at compound interest. In how many years will it become 8 times its original value?

a. 16 b. 8 c. 12 d. 10

Q23. A person purchased a product from a shop for Rs. 3200, marked up the price by 15% and sold it to a customer at a discount of 5%. Find the overall percentage profit or loss?

a. 10 profit b. 20 profit c. 5 loss d. 9.25 profit

Q24. If a : b is 3 : 4, find the ratio (7a – 4b) : (3a + b).

a. 16/15 b. 5/13 c. -5/13 d. -16/15

Q25. Two friends separated by a certain distance start walking towards each other. When they meet one of them has walked 20 meters more than the other. If the ratio of the distances that each has covered is 2 : 3, find the distance that originally separated them.

a. 20 b. 40 c. 60 d. 100

Q26. Divide 2220 in the ratio 1/4: 1/5: 1/6.

a. 900, 720, 600
b. 600, 720, 900
c. 592, 740, 888
d. 888, 740, 592

Q27. Six years back, the ratio of the ages of a husband and his wife was 6 : 5. Six years hence, their ages will be in the ratio 10 : 9. What is the ratio of their present ages.
a. 7 : 6 b. 8 : 7 c. 9 : 10 d. 18 : 15

Q28. A starts a business with Rs.3,500 and after 5 months, B joins A. At the end of the year, the profit is divided between A and B in the ratio 2 : 3. What amount did B invest in the business?
a. 2800 b. 2700 c. 1800 d. 9000

Q29. Three partners shared the profit in a business in the ratio 5 : 7 : 8. They had partnered for 14 months, 8 months and 7 months respectively. What was the ratio of their investments.
a. 5 : 4 : 4 b. 20 : 49 : 56 c. 784 : 320 : 245 d. 19 : 15 : 15

Q30. y varies directly as the square of x. When x = 4, y = 2. What is the value of y when x = 3/2 ?
a. 9/32 b. 3 /4 c. 16 /3 d. 128 /9

Q31. If the price of the entrance ticket of a circus is decreased by 6.25%, by what percent should the number of viewers increase so as to earn as much as that earned before the decrease in price?
a. 5% b. 6.66% c. 6.25% d. Depends on actual price

Q32. Find 87.5% of 144 + 37.5% of 72.
a. 143 b. 133 c. 153 d. None of these

Q33. Mohan spends 40 % of his income on rent, 20 % on food, 10 % on entertainment and saves the rest. Find his savings as a percentage of his expenditure.
a. 30 % b. 33.33 % c. 37.5 % d. 42.85 %

Q34. Anand has won 80 % of the games he has played so far in the tournament. His goal is to win 90 % of all the games he has to play in the tournament. If he has already played 15 out of the total 50 games that he has to play, what is the maximum number of games he can afford to lose in the remaining games and yet meet his goal?
a. 0 b. 1 c. 2 d. 3

Q35. If the cost price is 25 % less than the selling price, find the profit percentage.
a. 25 % b. 27.27 % c. 20 % d. 33.33 %

Q36. An article sold at Rs. 423 results in a loss of 10 %. What should be the selling price to result in a profit of 10 %?
a. Rs. 443 b. Rs. 500 c. Rs. 507.6 d. Rs. 517

Q37. A manufacturer sells to the wholesaler at a profit of 20%. The wholesaler sells to the dealer at a profit of 12.5%. The dealer sells to a retailer at a profit of 10% and the retailer to the customer at a profit of 6.66%. If the cost of manufacturing the product for the manufacturer was Rs. 625, find the price paid by the customer.
a. 990 b. 1000 c. 900 d. 850

Q38. By selling 12 articles, Naveen managed to make a profit equal to the selling price of 3 articles. Find the profit or loss percentage.
a. 22.22% b. 33.33 % c. 20% d. 30%

Q39. A person buys 12 oranges in a rupee. How many should he sell in a rupee so that he earns a profit of 20%.
a. 14 b. 8 c. 9 d. 10

Q40. Articles were bought at the rate of 6 for Rs. 5 and sold at the rate of 5 for Rs. 6. Find the profit percentage.
a. 44% b. 44.44% c. 45.45% d. 40%

Q41. Tap A can fill a tank in 12 minutes and another leakage B can empty the tank in 6 minutes. If the tank is already full and both A & B are opened. the tank will be

a. Filled in 8 minutes
b. Emptied in 8 minutes
c. Filled in 12 minutes
d. Emptied in 12 minutes

Q42. A school arranged for a camp and made provision for food to be consumed by 150 people in 25 days. After 5 days, few more members joined because of which the food finished in a total time of 20 days. How many members joined the group in between the camp?

a. 50 b. 25 c. 75 d. None of These

Q43. If 8 Men can do a work in 12 days and 12 Women can do the same work in 8 days, find the total time taken by 8 Men and 12 Women to do the work together?

a. 5 days b. 4.8 days c. 2.4 days d. 7.2 days

Q44. If 6 Men and 14 women can do a job in 12 days, in how many days can 9 men and 21 Women do the same job?

a. 10 days b. 8 days c. 15 days d. 9 days

Q45. If 15 Men working for 9 hours can finish a work in 32 days, in how many days can 27 Men working at 12 hours do a work which is 1.5 times as great as the first one?

a. 15 days b. 24 days c. 27 days d. 20 days

Q46. A alone can do a work in 12 days, B in 16 days and C in 20 days. They work in such a manner that A and B work on the first day, B and C work on the 2nd day, A and C work on the 3rd day, A and B work on the 4th day and so on. In how many days will the work get finished?

a. 4 and 17/27 days
b. 9 days
c. 8 and 1/8 days
d. 7 and 17/27 days

Q47. A, B and C can do a work in 12,15 and 20 days respectively. They undertook a project for Rs. 60,000. What will be the difference in the shares of A and C?

a. 6000 b. 10000 c. 9000 d. 5000

Q48. The largest 4 digit number exactly divisible by 88 is:

a. 9944 b. 9768 c. 9988 d. 8888

Q49. If the number 481*673 is completely divisible by 9, then the smallest whole number in place of * will be:

a. 2 b. 5 c. 6 d. 7

Q50. How many natural numbers are there between 23 and 100 which are exactly divisible by 6?

a. 8 b. 11 c. 12 d. 13

Q51. At its usual speed of 40 kmph, the bus covers its journey on schedule. But when its speed reduces to 35 kmph, it takes 15 more minutes than scheduled time. Find the distance of the journey.

a. 50 km b. 60 km c. 70 km d. 75 km

Q52. A thief escapes from a prison at 2 pm and travels away at a speed of 30 kmph. The police realize the escape at 3:30 pm and start the chase then at a speed of 40 kmph. At what time will the police catch the thief?

a. 8:00 pm b. 8:30 pm c. 7:30 pm d. 9:00 pm

Q53. A train running at 72 kmph crosses a telephone pole in 7 sec. What is the length of the train?

a. 200 m b. 140 m c. 400 m d. None of these

Q54. A train crosses 2 platforms of length 400 m and 600 m in 6 seconds and 8 seconds respectively. What is the length of the train?

a. 200 m b. 300 m c. 500 m d. 100 m

Q55. Two trains, each 100 meters long take 60 seconds to cross each other if traveling in the same direction and 10 seconds to cross each other when traveling in opposite direction. Find the speed of the faster train.
a. 30 kmph b. 35 kmph c. 42 kmph d. 50 kmph

Q56. A train traveling at 72 kmph crosses a platform in 30 seconds and a man standing on the platform in 18 seconds. What is the length of the platform in meters?
a. 100 b. 125 c. 180 d. 240

Q57. Two trains are traveling in the same direction at 50 kmph and 30 kmph. The faster train crosses a man sitting in the slower train in 18 seconds. Find the length of the faster train.
a. 80 mts b. 100 mts c. 120 mts d. 125 mts

Q58. The speed of a motor boat itself is 20 km/h and the rate of flow of the river is 4 km/h. Going downstream, the boat went 120 km. What distance will the boat cover during the same time going upstream?
a. 40 km b. 50 km c. 60 km d. 80 km

Q59. A motorboat went down the river for 14 km and then up the river for 9 km. It took a total of 5 hours for the entire journey. Find the speed of the river flow if the speed of the boat in still water is 5 kmph.
a. 1 kmph b. 1.5 kmph c. 2 kmph d. 2.5 kmph

Q60. A boat takes a total of 6 hours to row 8 kms downstream and to return back to the starting point. If speed of the boat is 3 kmph, for how much time was the boat moving downstream?
a. 1 hr b. 2 hr c. 3 hr d. 4 hr

Q61. The income of A and B are in the ratio 4:5 and their expenditure are in the ratio 3:4. If A saves 2/3 of his income, what is the ratio of their savings?
a. 24:25 b. 25:24 c. 24:29 d. None of these

Q62. The ratio of boys and girls in a class is 25:4. Had there 5 more students in the class, with 7 boys more, the ratio would have been 22:3. What is the total number of students in the class?
a. 155 b. 165 c. 290 d. 145

Q63. Rohit scored 50% of the maximum marks in an exam and yet failed by 12 marks. Had he scored 10% more than what he scored, he would have just got passing marks. Find the maximum marks of the exam.
a. 240 b. 300 c. 250 d. None of these

Q64. When 1kg of goods is kept on an electronic weighing scale, the scale shows a reading of 950 gms. Find the percentage error in the measurement.
a. 11.11% b. 5.55 % c. 5 % d. 5.26 %

Q65. To pass an exam of 250 marks, a candidate should obtain 40 % marks. Raj scores 10 % more than the passing marks. Find the percent of marks scored by Raj.
a. 44 % b. 50 % c. 54 % d. 60 %

Q66. A milk man mixes water equal to 20 % of the milk he has. Water now accounts for what percentage of the mixture?
a. 16.66 % b. 20 % c. 25 % d. 22.22 %

Q67. If the length of a rectangle increases by 9.09%, by what percent should the breadth of the rectangle decrease to maintain the area of the rectangle?
a. 8.33% b. 9.09% c. 10% d. Depends on actual length and breadth.

Q68. Inspite of an increase in prices by 20%, Gopal managed to let his expenditures increase by just 10%. Find the percentage change in the quantity consumed.
a. 10.2% b. 10% c. 9.09% d. 8.33%

Q69. While preparing the price tag, instead of increasing the prices by 12.5%, a shopkeeper absent mindedly decreased the prices by 12.5%. Find the percentage difference in the price on the tag compared to what should have been the price tag.
a. 25% b. 22.22% c. 6.25% d. 28.56%

Q70. Since the prices of mangoes increased by 6.66%, the wholesaler was able to purchase 18 mangoes less in his budget of Rs 864. What is the increased price of each mangoes?
a. Rs. 1.5 b. Rs. 2.5 c. Rs. 3 d. Rs. 3.2

Q71. If a : b is 3 : 4 and b : c is 5 : 6, find the ratio a : b : c.
a. 15:20:24 b. 15:18:24 c. 5:4:8 d. None of these

Q72. The income of A, B, and C are in the ratio 3:4:7. If their incomes be changed such that the new income of A is 40% increased, 20% increased for B and 20% decreased for C. Find the new ratio of their new incomes.
a. 7:8:9 b. 6:7:9 c. 12:40:23 d. 21:24:28

Q73. A man has 10p, 25p and 50p coins in the ratio of 5:2:1 respectively. If the total money is Rs.120. Find the number of 25p coins with?
a. 140 b. 135 c. 123 d. 160

Q74. The ratio of monthly income of A and B is 7:6 and the ratio of their expenditure is 11:9. If each saves Rs.800. Then the expenses of B is:
a.1,000 b. 2,400 c. 1,800 d. 2,200

Q75. The speeds of P, Q and R are in the ratio of 6:4:12, what is the ratio of time taken by each one of them for the same distance?
a. 5:3:2 b. 3:2:1 c. 1:2:4 d. 2:3:1

Q76. The price of a bike is decreased by 20%. As a result of which the sale increased by 40%. What will be the effect on the total revenue of the shop?
a. 12% Loss b. 12% Profit c. 20% Profit d. 20% Loss

Q77. The sum of present age of son and father is 100yrs. Before 5 years the ratio of their ages was 5:13. Find the present age of son
a. 15 b. 20 c. 25 d. 30

Q78. The length and breadth of a rectangle are increased by 20% and 30%. The area of the resulting rectangle exceeds the area of the original rectangle by:
a. 50% b. 65% c. 56% d. 156%

Q79. In an examination, full mark is 500, A gets 25% more than B, B gets 40% more than C and C gets 60% more than D. If A got 420, find the marks scored by D.
a. 160 b. 150 c. 180 d. 230

Q80. Find the digit at the unit's place $43^{1260} \times 38^{492}$.
a. 2 b. 4 c. 8 d. 6

Q81. A shop-keeper sells two articles, each for Rs. 1958. If he sold one at a profit of 10% and the other at a loss of 10%, find the amount of profit or loss.
a. Rs 19.58 loss b. Rs 39.16 loss c. Rs 39.5 loss d. Rs 40 loss

Q82. A 25% discount offer results into a saving of Rs. 37. Find the selling price of the article.
a. Rs 99 b. Rs 100 c. Rs 101 d. Rs 111

Q83. A scheme of 1 soap free with every 4 soaps purchased is launched for increasing the sales. What is the effective discount that the scheme offers?
a. 33.33% b. 37.5% c. 25% d. 20%

Q84. What should be the mark-up percentage if a trader wishes to make a profit of 10% inspite of a discount of 10%
a. 20% b. 18.18% c. 22.22% d. 27.27%

Q85. A shop-keeper, unaware that his balance reads 900 gms for 1000 gms, sells goods at a mark-up of 20%. Find his actual profit percentage.
a. 8% b. 10% c. 11.11% d. 12%

Q86. A milk-man sells milk after mixing water to it to such a extent that water accounts for 20% of the mixture. If he sells at a mark-up rate of 10%, find his actual profit percentage.
a. 30% b. 32% c. 33.33% d. 37.5%

Q87. At a certain rate of simple interest, a principal becomes three times in 15 years. In how many years will the principal amount become nine times?
a. 45 years b. 30 years c. 60 years d. 75 years

Q88. The population of a city grows at a rate of 5% per annum. If in 2006 its population is 18,52,200, what was its population in 2004?
a. 12,60,000 b. 13,60,000 c. 16,00,000 d. 16,80,000

Q89. Which of the following two schemes is more beneficial to a depositor with a two year investment horizon?

(i) Rate of interest 6% compounded annually.
(ii) Rate of interest 5% compounded semi-annually.

a. (i) b. (ii) c. Both are same d. Depends on principal amount

Q90. The compound interest earned in the 3rd and 4th year is Rs. 450 and Rs. 500. Find the rate of interest.
a. 9.09% b. 10% c. 11.11% d. 12.5%

Q91. If the rate of compound interest is 12.5%, find the ratio of compound interest earned in the 24th year and that earned in the 25th year.
a. 8 : 9 b. 9 : 8 c. 24 : 25 d. 192 : 225

Q92. The difference between the compound interest and simple interest on a certain sum at 10% per annum for 2 years is Rs. 631. Find the sum.
a. Rs 6,310 b. Rs 63,100 c. Rs 6,31,000 c. Rs 63,10,000

Q93. I kept Rs. 20,000 at 5% rate of simple interest for two years. Find the difference in interest earned if I had kept the same amount for same years at same rate but at compound interest.
a. Rs 23. b. Rs 54 c. Rs 20 d. Rs 50

Q94. A certain strain of coronavirus triples itself in every 15 minutes. After how much time will it be 729 times?
a. 75 mins b. 120 mins c. 150 mins d. 90 mins

Q95. The difference between SI and CI for 1.5 years at 20% per annum compounded half-yearly is Rs. 930. Find the Principal amount.
a. 30,000 b. 3,00,000 c. 20,000 d. data inadequate

Q96. Find the effective annual rate of 10 percent per annum compounded half-yearly.
a. 10.5 b. 10.25 c. 11.25 d. 11.50

Q97. I bought an Astra two years back. Its value depreciated by 9% every year. If at present its value is Rs. 9,10,910, at what cost had I bought it?
a. 10,91,910 b. 10,9,190 c. 10,00,000 d. 11,00,000

SET – B

XBC - 401 / XBI – 401 / XBS – 401/ MBH – 405 / PBH - 404 / BBA – 406 / BOV – 405 / BCH – 407 / ESE – 401

Q98. I cover a total of 300 km in 8 hours, partly at a speed of 30 kmph and partly at a speed of 50 kmph. For what time was I traveling at a speed of 30 kmph?

a. 2 hrs b. 3 hrs c. 4 hrs d. 5 hrs

Q99. Find the ratio of the time taken to cover two distances in the ratio 4 : 5 at speeds in the ratio 4 : 3 respectively.

a. 1 : 1 b. 3 : 5 c. 5 : 3 d. 4 : 3

Q100. Over a certain distance, if the speed had been 10% more, by how much percent less would the time taken be?

a. 11% b. 10% c. 9.09% d. 8.88%