

Roll No _____

END TERM EXAMINATION
Odd Semester 2024-25



School: SOET

Programme Name: MCA

Course Code: VAC188

Course Name: Career Readiness Boot Camp

Semester: 3rd

Time : 2.5 Hr

Maximum Marks: 50

Instructions:

1. All questions are compulsory in Section A and B.
2. Use of calculators is strictly prohibited.
3. Each question carries 0.5 marks. Choose the correct option for each MCQ question.
4. In section B each question carries 2.5 marks

Section-A

1. If a boy sells a book for Rs. 450 he gets a loss of 10 %, then find cost price. To gain 10 %, what should be the selling price?
A. 500 B. 600 C. 550 D. 525
2. A merchant sells 30 metres of cloth and gains selling price of 10 metres. Find the gain percent.
A. 15 % B. 25 % C. 50 % D. 75%
3. An item is sold at a loss of 10%. Had it sold for Rs. 36 more, a profit of 25/2% would have gained. What is the cost price of the item?
A. Rs. 160 B. Rs. 150 C. Rs. 105 D. None of these
4. A shopkeeper sells a table at a discount of 30% and earns a profit of 40%. If he sells the same table at 20% discount, then what will be his new profit percent?
A. 65% B. 62% C. 60% D. None of these
5. The marked price of a table is 60% more than its cost price. What discount percentage should be offered by the shopkeeper to sell his table at no profit or no loss?
A. 35% B. 32% C. 37.5% D. None of these
6. The H.C.F of 1.71, 0.76 and 1.14 is:
A. 0.9 B. 0.17 C. 0.19 D. 0.21
7. The H.C.F. of two numbers is 21. Which one of the following can never be their L.C.M.?
A. 3 B. 7 C. 63 D. 94
8. If the product of two numbers is 5120 and the HCF is 8, then the ratio of HCF and LCM is
A. 1:75 B. 1:40 C. 1:80 D. 1:512
9. What will be the least number which when tripled will be exactly divisible by 12, 28, 25 and 35?
A. 700 B. 1400 C. 2100 D. 4200
10. If the sum of two numbers is 175 and the H.C.F. and L.C.M. of these numbers are 25 and 150 respectively, then the sum of the reciprocals of the numbers is equal to:

A. 1/111	B. 3/140	C. 5/172	D. 7/150
11. What is the sum of squares of prime numbers between 20 and 30?			
A.1270	B.1370	C.1470	D.1570
12. If x, y, z are prime number and $x+y+z = 48$, then the possible minimum value of x?			
A.2	B.3	C.5	D.6
13. What is the simplified fraction value of 0.137137...?			
A. 136/990	B.106/990	C.10/990	D.06/990
14. When a number is divided by 234, the remainder obtained is 26. If the same number is divided by 13, then the remainder obtained will be:			
A. 0	B. 2	C. 5	D. 3
15. If a number 738A6A is divisible by 11 and a three-digit number 57X is divisible by 9, then the value of (A + X) is:			
A. 13	B. 15	C. 17	D. 19
16. The unit digit in the product $(2467)^{153} \times (346)^{72}$ is			
A. 2	B. 3	C.9	D. 1
17. Find the unit digit of: $17^{357} \times 201^{501} \times 68^{14} + 3657 + 6818$			
A. 0	B. 5	C. 3	D. 7
18. What will be the unit digit if $279 \times 266 \times 369$?			
A. 1	B. 4	C. 3	D. 6
19. What will be the unit digit of $62^{53} \times 23^{62}$?			
A.4	B.5	C. 8	D.7
20. What is the unit digit if $41^{865} \times 25^{48} \times 26^{88} \times 2^{154}$			
A.0	B. 1	C. 2	D. 3
21. In a class, 70% of the total number of students are girls. 80% of the total number of students, including 35 boys, got passed in an examination. If there are 105 girls, then what percentage of girls of total girls got passed in examination?			
A. 30%	B. 80(20/21)%	C. 4%	D. 35%
22. A company give 12% commission to Himani on total sales made by her & But if company offers her a fixed salary of Rs. 12,000 & only 2% commission then Himani receive Rs.560 more. Find total sales made by Himani?			
A. 75000	B. 114400	C. 95000	D. 120000
23. A man bought a house for Rs.5 lakhs and rents it. He puts $12\frac{1}{2}\%$ of each month's rent a side for repairs, pay Rs.1660 as annual taxes and realizes 10% on his investments thereafter. The monthly rent of the house is :			
A. Rs.2460	B. Rs.2500	C. Rs.4920	D. Rs.5000
24. A person spends 30% of his monthly income on rent, 'X' % on sports, 'Y'% on transport and rest is saved by him which is Rs 4800. If his monthly income is Rs 12000 and value of 'Y' is one-third of the value of 'X' then how much amount does he spend on transport?			
A. Rs. 900	B. Rs. 600	C. Rs. 400	D. Rs. 300
25. If 62.5% of a number is added with itself, then result becomes 3380. find the original number?			
A. 2050	B. 2080	C. 2700	D. 1400
26. Aman can do 50% of the job in 16 days, and Bhanu can do 25% of the job in 24 days. In how many days can they do $\frac{1}{4}$ th of the job working together?			

A. 6 days B. 8 days C. 10 days D. 12 days

27. A can do a piece of work in 15 days. B can do the same work in 25 days. Both together started the work and after 5 days B left the work. In how many days A complete the remaining work?

A. 4days B. 5 days C. 7 days D. 12 days

28. A does half as much work as B in three-fourth of the time. If together they take 18 days to complete the work, how much time shall B take to do it?

A. 30 days B. 40 days C. 35 days D. 45 days

29. A is twice as efficient as B and thrice as efficient as C. All three together can do a piece of work in 12 days then find in how many days A and B together could do that work?

A. 13.2 days B. 14 days C. 16.33 days D. None

30. Pipes A and B can fill a tank in 8 hrs and 12 hrs respectively and a third pipe C can empty it in 4 hrs. If the pipes be opened in order 3 PM, 4 PM and 6 PM, the tank will be emptied at:

A. 11 Pm B. 10 Pm C. 9:30 Pm D. 7 Pm

31. Average of the number of apples sold by a shopkeeper from Monday to Thursday was 260 while average of the number of apples sold by the same shopkeeper from Thursday to Sunday was 275. If the average of number of apples sold from Monday to Sunday was 265, then find the number of apples sold on Thursday.

A. 275 B. 260 C. 285 D. 290

32. The captain of a cricket team of 11 players is 25 years old and the wicket keeper is 5 years older. If the ages of these two are excluded, then average age of the remaining players is 2 years less than the average age of the whole team. What is the average age of the team?

A. 15 years B. 18.5 years C. 16.5 years D. 12 years

33. Three years ago, the average age of A and B was x years. If C whose age is 24 years joins them now the average becomes 22 years then find the age of B three years ago if he is 4 younger than A?

A. 24 years B. 15 years C. 16 years D. 12 years

34. In an examination average mark obtained by the girls of a class is 85 and the average marks obtained by the boys of the same class is 87. If the girls and boys are in the ratio 4 : 5, average marks of the whole class (approximately) is closest to

A. 85.9 B. 86.1 C. 86.4 D. 86.5

35. Three Science classes A, B and C take a Life Science test. The average score of class A is 83. The average score of class B is 76. The average score of class C is 85. The average score of class A and B is 79 and average score of class B and C is 81. Then the average score of classes A, B and C is

A. 81.5 B. 81 C. 80.5 D. 80

36. Kashish goes 30 meters North, then turns right and walks 40 meters, then again turns right and walks 20 meters, then again turns right and walks 40 meters. How many meters is he from his original position?

A. 20m B. 10m C. 30m D. 40m

37. Going 50 m to the South of her house, Radhika turns left and goes another 20 m. Then, turning to the North, she goes 30 m and then starts walking to her house. In which direction is she walking now?

A. South B. East C. North West D. North

38. I am facing south. I turn right and walk 20 m. Then I turn right again and walk 10 m. Then I turn left and walk 10 m and then turning right walk 20 m. Then I turn right again and walk 60 m. In which direction am I from the starting point?

A. South B. East C. North East D. North

39. X and Y start moving towards each other from two places 200 m apart. After walking 60 m, B turns left and goes 20 m, then he turns right and goes 40 m. He then turns right again and comes back to the road on which he had started walking. If A and B walk with the same speed, what is the distance between them now?

A. 20m B. 40m C. 30m D. 50m

40. A, B, C and D are playing cards. A and B are partners. D faces towards North. If A faces towards West, then who faces towards South?

A. A B. B C. C D. D

Directions (Q41-Q42) : Study the following information carefully and answer the questions given beside. [Set of 2 Questions], B and C are siblings. M has two children and he is son of E, who is father-in-law of H. H has only one son. C is not granddaughter of E.

41. How is B related to E?

A. Granddaughter B. Son C. Daughter D. Can't be determined

42. How is H related to M?

A. Husband B. Wife C. Daughter D. Son

Directions (Q43-Q45) : Study the following information carefully and answer the questions given beside. (Set of 3 Questions)

A family consists of eight members P, Q, R, S, T, U, V and W. Among these eight members, there are three generations in which there are four male and four female members. Among all, each offspring has both the parents alive.

The husband of R's sister has two daughters. The husband of T's daughter is married to V. V has only one sibling. U's father-in-law has two granddaughters. W's brother has only one nephew and W is not V's mother. R is unmarried and Q has only one niece.

43. Which of the following is the grandmother of S?

A. W B. T C. V D. U

44. Who among the following is the Uncle of U's spouse?

A. W B. T C. R D. Q

45. Which of the following is a combination of the couple discussed in the information part?

A. Q and W B. T and R C. W and T D. P and S

46. In a certain code language, 'SAMPLE' is written as 'RYJLGY' and 'MAPLE' is written as 'LYMHZ'. How will 'PEOPLE' be written in that language?

A. OCLLGY B. OCLLGL C. GCLLGY D. OBGLGY

47. In a certain code language, "FAMOUS" is written as "AFOMSU", and "FINGER" is written as "IFGNRE". How will "INVEST" be written in that language?

A. NIEVST B. NEIVTS C. NIEVTS D. NIVETS

48. In a certain code language, 'ADVISORY' is written as 'BFYMRMOU', and 'CHAMPION' is written as 'DJDQOGLJ'. How will 'DESIGNER' be written in that language?

A. EGVMFLBN B. EGVNFLBN C. EGVNFLCN D. EGUMFMCN

49. In a certain code language, 'KITCHEN' is written as 'LHUBIDO', and 'HUSBAND' is written as 'ITTABME'. How will 'ELEMENT' be written in that language?

A. FKFLFMU B. FKFLFNU C. FKGLFNU D. FJFLGNV

50. In a certain code language, "CLIENT" is written as "LCEITN", and "CLOSED" is written as

“LCSODE”. How will “FAMILY” be written in that language?

A. AFIMLY

B. AFMILY

C. AFIMYL

D. FAIMYL

51. Choose the correct option:

When the Bangalore International Airport gets commissioned, probably in May, the current phase in [A]/of [B] **airport** infrastructure expansion **will be complete** [A] /**will complete** [B].

The substance of Hillary Clinton’s proposals on mortgages, like that of her health care plan, **suggests** [A]/**suggests** [B] a strong progressive sensibility.

The law, which goes into effect on 1 August, is intended **to strengthen** [A]/**strengthening** [B] an existing set of antitrust regulations.

Large format retail stores **give** [A] **gave** [B] enough space to display the entire range of their products that is not possible in small multi-brand outlets.

A. ABBA

B. BAAB

C. BABAA

D. BBAAA

52. Choose the correct option:

The US has acted in a timely manner by **swift** [A] **swiftly** [B] lowering interest rates and by **give** [A] **giving** [B] fiscal stimulus to the economy.

Workers in the unorganized sector will also **cover** [A]/**be covered** [B] under the health insurance scheme expected to come into effect from 1 April, 2008.

The government may soon make the filing of annual information return compulsory not just **to buy** [A]/**for buying** [B] but also for selling of shares beyond a particular value.

People have **started** [A] **started** [B] living in it for a year now, relegating past and future to a back seat.

A. BBBBA

B. BABAA

C. ABABA

D. AABBB

53. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?

A. Jackal

B. Cheetah

C. Tiger

D. Lion

54. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?

A. Cheese

B. Butter

C. Milk

D. Curd

55. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?

A. Sultry

B. Hot

C. Humid

D. Warm

56. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?

A. Now

B. After

C. Then

D. Before

57. Fill in the blank: The latest weather forecast was a bitter ____ to swallow

A. Pill

B. Cake

C. Spice

D. Candy

58. Fill in the blank: Going into business in that town was a Catch-----

A. 13

B. 12

C. 33

D. 22

59. Fill in the blank: Since we announced the sale, the telephone has been ringing off the-----

A. Wall

B. Hook

C. Table

D. Dial

Choose the correct idiom(Q60-Q61) :

60. To turn up one's nose at a thing

- A.To show eagerness to have something
- B.To show indifference
- C.To treat it with contemptuous dislike or disgust
- D.To start to grapple with it

61. To snap one's fingers

- A.To speak abruptly
- B. To accept immediately
- C. To grasp eagerly
- D. To become contemptuous of

62. A pipe dream

- A. A pleasant dream
- B. A bad dream
- C. An impracticable plan
- D. A foolish idea

63.Choose the correct form:When I _____ him he _____ a letter to his wife. Did _____ it?

- A. saw / was writing / you see
- B. see / wrote / did you see
- C. saw / wrote / you see
- D. saw / writes / did you see

64. Choose the correct form: The bus had nobody in it but the engine _____.

- A. was running
- B. ran
- C. runs
- D. will run

65. Choose the correct form: Rick can't have the novel now because his uncle _____ it.

- A. is reading
- B. reads
- C. has read
- D. read

66. Choose the correct form:This garage _____ for good next Tuesday.

- A. will close
- B. closes
- C. is closing
- D. closed

67. Choose the correct form:Where _____ tonight? – I _____ out with friends.

- A. are you going / am going
- B. did you go / went
- C. are you going / will go
- D. you go / go

68. Choose the correct form:At 2 A.M. Jessie _____ up her husband and said that she _____ that someone _____ to get into the house.

- A. woke / thought / was trying
- B. wakes / thinks / tried
- C. woke / thinks / tries

D. had woken / thought / tried

69. Choose the correct form: Few employees..... present in the class today.

A. is B. are C. Both A & B D. None of These

70. Choose the correct form: Rita, my best friend..... leaving for Korea next week.

A. is B. are C. Both A & B D. None of These

Synonyms and Antonyms

71. Synonym of 'Diligent'

A. Careless B. Hardworking C. Lazy D. Indifferent

72. Antonym of 'Abundant'

A. Plentiful B. Scarce C. Ample D. Generous

73. Synonym of 'Abridge'

A. Expand B. Shorten C. Lengthen D. Elaborate

74. Antonym of 'Benevolent'

A. Kind B. Malevolent C. Generous D. Charitable

75. Synonym of 'Obsolete'

A. Current B. Outdated C. New D. Modern

Section B

76. Explain the concept of multiple inheritance and how it is handled in any one languages (Python, Java, and C++).

Or

What is a constructor, and why is it used in OOP? Explain using any one languages (Python, Java, and C++).

77. Define primary key and foreign key with examples. Define the term "referential integrity" with an example.

Or

Explain the concept of a deadlock in a DBMS. How can it be prevented or resolved?

78. What is a linked list? Explain how to reverse a linked list iteratively and recursively.

Or

Explain Queue How does a circular queue differ from a regular queue?

79. Explain the difference between linear search and binary search. When would you use one over the other? What are their time complexities?

Or

Compare Quick Sort and Merge Sort in terms of time complexity, space complexity, and stability. Which one would you prefer for large datasets?

80. How does indexing affect transaction performance, particularly in scenarios involving frequent inserts, updates, and deletes? Discuss index maintenance overhead.

Or

How does a DBMS ensure transactional integrity when dealing with complex queries involving multiple indexed tables?