Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A++' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Continuous Internal Assessment II November 2022
III Semester

Class : II PG (other majors) **Time :2 hours**

Major :Multi Disciplinary Course **Max.Marks: 60**

21MMAM01 - Power Course on Quantitative Aptitude

Course outcomes:
CO1: Complete competitive exams successfully
CO2: Interpret statistical data numerically and graphically
CO3: Critically evaluate real life situations
CO4: Apply mathematical logic to solve problems
CO5: Understand simple mathematical models

Choose the right answer for the following questions. **(60x1 = 60)**

Directions (1 -3): The proportion of male student and proportion of vegetarian in a school are given below. The school has a total of 800 students, 80% of whom are in the Secondary Section and rest equally divided between Class 11 and 12.

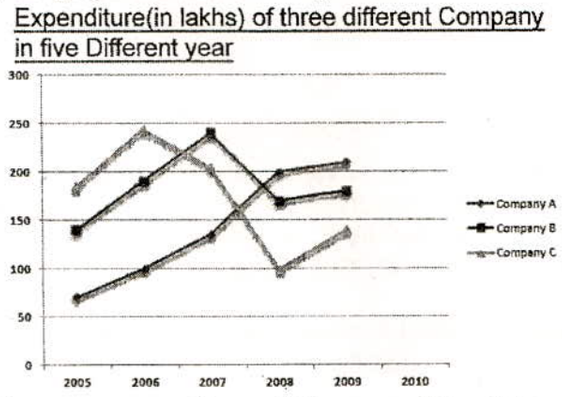
	Male (M)	Vegetarian (V)
Class 12	0.60	
Class 11	0.55	0.50
Secondary Section		0.55
Total	0.475	0.53

CO3K3

1. What is the percentage of vegetarian students in class 12?
a. 40 b. 45 c. 50 d. 55
2. In class 12, twenty five percent of the vegetarian are male. What is the difference between number of female vegetarian and male non-vegetarian?
a. 10 b. 12 c. 14 d. 16

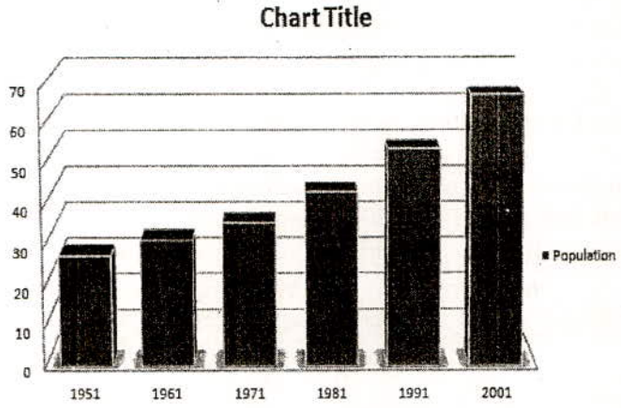
3. What is the percentage of male students in Secondary Section?
a. 40 b. 45 c. 50 d. 55

Directions (4-6): Study the graph and answer the questions: CO3K3



4. What was the overall average expenditure of Company C in all the years together?
a. 190 lakhs b. 120 lakhs c. 180 lakhs d. 150 lakhs
5. What was the respective ratio between the expenditure of company A in the year 2009 and expenditure of company B in the year 2005?
a. 5:3 b. 3:4 c. 3:5 d. 3:2

6. In which year was the total expenditure by all three Companies together second highest?
a. 2005 b. 2006 c. 2007 d. 2008
Directions (7-9): Study the graph and answer the questions: CO3K2
The bar chart give

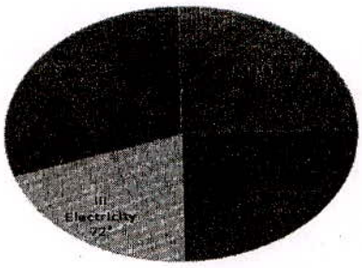


7. The percent increase in population from 1991 to 2001 is:
a. 24.8 crores b. 20 crores c. 13.6 crores d. 22.9 crores
8. In which census year, the per cent increase in population is highest as compared to that in the previous census year?
a. 1971 b. 1981 c. 1991 d.2001

9. In which census year, the per cent increase in population is least as compared to that in the previous census year?

a. 1971 b. 1981 c. 1991 d. 1961

Directions (10&11): Study the pie chart and answer the given questions. The total expenditure of a company for a particular month is Rs. 60000. The various heads of expenditure I to IV are indicated in a pie chart given below. These heads are: CO3K3



10. What percentage of total expenditure is on electricity?
a. 23% b. 25% c. 30% d. 20%

11. What is the amount spent on overhead expenses?
a. Rs.12000 b. Rs.15000 c. Rs.18000 d. Rs.10000

12. Question: The last Sunday of March, 2006 fell on which date ? CO3K2
Statements: I. The first Sunday of that month fell on 5th.
II. The last day of that month was Friday.
a. I alone is sufficient while II alone is not sufficient
b. II alone is sufficient while I alone is not sufficient
c. Either I or II is sufficient
d. Both I and II are sufficient

13. Question: How many children are there between P and Q in a row of children ?CO3K2
Statements: I. P is fifteenth from the left in the row.
II. Q is exactly in the middle and there are ten children towards his right.
a. I alone is sufficient while II alone is not sufficient
b. II alone is sufficient while I alone is not sufficient
c. Either I or II is sufficient
d. Both I and II are sufficient

14. Question: How many doctors are practising in this town ?CO3K2
Statements: I. There is one doctor per seven hundred residents.
II. There are 16 wards with each ward having as many doctors as the number of wards.
a. I alone is sufficient while II alone is not sufficient
b. II alone is sufficient while I alone is not sufficient
c. Either I or II is sufficient
d. Both I and II are sufficient

15. Three unbiased coins are tossed. What is the probability of getting at most two heads? CO3K3

a. $\frac{3}{4}$ b. $\frac{1}{4}$ c. $\frac{3}{8}$ d. $\frac{7}{8}$

16. In a class, there are 15 boys and 10 girls. Three students are selected at random. The probability that 1 girl and 2 boys are selected, is: CO3K3

a. $\frac{21}{46}$ b. $\frac{25}{117}$ c. $\frac{1}{50}$ d. $\frac{3}{25}$

17. A card is drawn from a pack of 52 cards. The probability of getting a queen of club or a king of heart is: CO3K3

a. $\frac{1}{13}$ b. $\frac{2}{13}$ c. $\frac{1}{25}$ d. $\frac{1}{52}$

18. A man buys Rs. 20 shares paying 9% dividend. The man wants to have an interest of 12% on his money. The market value of each share is: CO3K3

a. 12 b.15 c. 18 d. 21

19. A man invested Rs. 4455 in Rs. 10 shares quoted at Rs. 8.25. If the rate of dividend be 12%, his annual income is: CO3K3

a.Rs.207.40 b. Rs.534.60 c. Rs.648 d. Rs.665.60

20. A' Limited purchased the assets from 'B' Limited for 5,40,000. 'A' Limited issued 10% debentures of 100 each at 20% premium against the payment. The number of debentures received by 'B' Limited will be :CO3K3

a. 5,400 b. 45,000 c. 6,000 d. 4,500

21. The value of y in the solution of the equation $2^{x+y} = 2^{x-y} = \sqrt{8}$ is: CO4K2

a. 0 b. $\frac{1}{2}$ c. $\frac{1}{4}$ d. $\frac{3}{4}$

22. The price of 10 chairs is equal to that of 4 tables. The price of 15 chairs and 2 tables together is Rs. 4000. The total price of 12 chairs and 3 tables is: CO4K2

a. Rs.3500 b. Rs.3750 c. Rs.3840 d. Rs.3900

23. If $a - b = 3$ and $a^2 + b^2 = 29$, find the value of ab. CO4K2

a. 10 b. 12 c. 15 d. 18

24. If one root of $x_2 - 5kx + 6 = 0$ is 4, then the value of k is CO4K2

a.5/7 b. 9/8 c. 11/7 d. 11/10

25. I. $2x^2 + 3x - 35 = 0$ CO4K2

II. $4y^2 + 10y - 104 = 0$

a. if x<y b. if x≤y c. if x>y d. if x=y or relationship between x and y cannot be established.

26. I. $x^2 - 19x + 88 = 0$ CO4K2

II. $y^2 - 12y + 35 = 0$

a. if x<y b. if x≤y c. if x>y d. if x=y or relationship between x and y cannot be established.

27. In how many ways can we arrange the word 'FUZZTONE' so that all the vowels come together? CO4K2

a. 1440 b. 6 c.2160 d. 4320

28. 17 students are present in a class. In how many ways, can they be made to stand in 2 circles of 8 and 9 students? CO4K2

a. $^{17}C_9$ x 9! X 8! b. $^{17}C_9$ x 8! X 7! c. 8! X 7! d. $^{17}C_8$ x 8! X 9!

29. A trekking group is to be formed having 6 members. They are to be selected from 3 girls, 4 boys and 5 teachers. In how many ways can the group be formed so that there are 3 teachers and 3 boys or 2 girls and 4 teachers? CO4K2

a. 55 b. 90 c. 27 d. 144

30. How many 3-letter words can be formed out of the letters of the word 'CORPORATION', if repetition of letters is not allowed? CO4K2

a. 990 b.336 c. 720 d. 504

31. In how many ways can 8 Indians and, 4 American and 4 Englishmen can be seated in a row so that al person of the same nationality sit together? CO4K3

a. 3! 4! 8! 4! b. 3! 8! c. 4! 4! d. 8! 4! 4!

32. In the cylindrical container, the base radius is 8 cm. If the height of the water level is 20 cm, find the volume of the water in the container. CO4K2

a. 5.6721 l b. 4.0218 l c. 3.8925 l d. 4.97 l

33. A well with 10 m inside diameter is dug 14m deep. Earth taken out of it is spread all around it to make an embankment of height. Find the width of the embankment. CO4K2

a. 5 m b. 4 m c. 4.3 m d. 6 m

34.What is the total surface area of a hemisphere of radius r? CO4K1

a. $4\pi r^2$ b. πr^2 c. $2\pi r^2$ d. $3\pi r^2$

35. If the radius of a sphere is doubled, then what is the ratio of their surface area?CO4K2

a. 1 : 2 b. 2 : 1 c. 1 : 4 d. 4 : 1

36.What is the area of a trapezoid that has a base of 6 inches, a base of 10 inches and a height of 5 inches?CO4K2

a. 40 sq inches b. 21 sq inches c. 150 sq inches d. 120 inches

37.What are you measuring the inside of a two dimensional figure such as a square, rectangle or triangle you are finding the… CO4K1

a.Perimeter b. Volume c. Area d. None of the above

38.What is the area of a triangle that has a height of 9cm and a base of 4 cm? CO4K2

a. 18 sq cm b. 36 sq cm c. 13 sq cm d. 20 sq cm

39. If the radius of cylinder is halved and height is doubled, then what will be the curved surface area?CO4K3

a. increase by 1 b. the same c. double d. triple

40.A solid with polygonal base and vertex is aCO4K2

a.Diamond b. Pyramid c. Triangle d. Dice

41. In each problem, out of the five figures marked (1), (2), (3), (4) and (5), four are similar in a certain manner. However, one figure is not like the other four. Choose the figure which is different from the rest. Choose the figure which is different from the rest.CO5K3

(1) (2) (3) (4) (5)

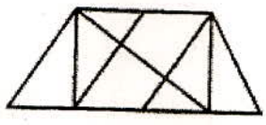
a. 1 b. 2 c. 3 d. 4

42.In each problem, out of the five figures marked (1), (2), (3), (4) and (5), four are similar in a certain manner. However, one figure is not like the other four. Choose the figure which is different from the rest.CO5K3

(1) (2) (3) (4) (5)

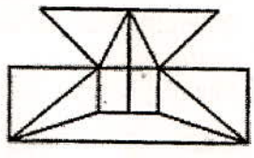
a. 1 b. 2 c. 3 d. 4

43. Find the number of triangles in the given figure.CO5K3



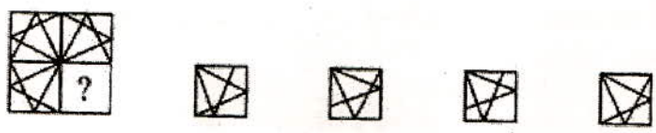
a. 8 b. 10 c. 12 d.14

44. Find the minimum number of straight lines required to make the given figure. CO5K3



a. 16 b. 17 c. 18 d. 19

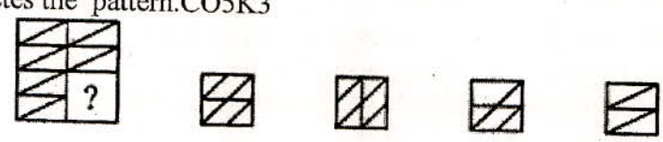
45. In each of the following questions, select a figure from amongst the four alternatives, which when placed in the blank space of figure (X) would complete the pattern. Identify the figure that completes the pattern.CO5K3



(X) (1) (2) (3) (4)

a. 1 b. 2 c. 3 d. 4

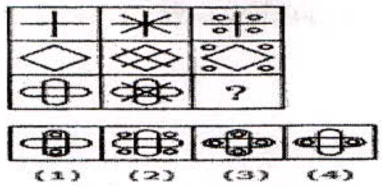
46. In each of the following questions, select a figure from amongst the four alternatives, which when placed in the blank space of figure (X) would complete the pattern. Identify the figure that completes the pattern.CO5K3



(X) (1) (2) (3) (4)

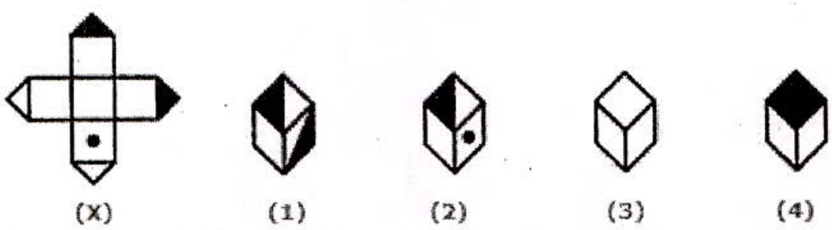
a.1 b. 2 c. 3 d. 4

47.In each of the following questions, find out which of the answer figures (1), (2), (3) and (4) completes thefigure matrix ?Select a suitable figure from the four alternatives that would complete the figure matrix.CO5K3



a. 1 b. 2 c. 3 d. 4

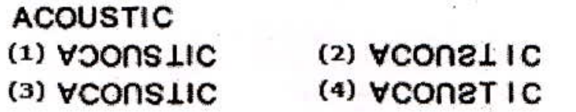
48. The sheet of paper shown in the figure (X) given on the left hand side, in each problem, is folded to form a box. Choose from amongst the alternatives (1), (2), (3) and (4), the boxes that are similar to the box that will be formed. Choose the box that is similar to the box formed from the given sheet of paper (X).CO5K3



a.1 and 2 only b. 2 and 4 only c. 2 and 3 only d. 1 and 4 only

49. In each of the following questions, you are given a combination of alphabets and/or numbers followed by four alternatives (1), (2), (3) and (4). Choose the alternative which is closely resembles the water- image of the given combination.CO5K2

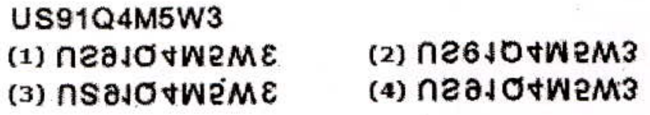
ACOUSTIC



a.1 b. 2 c. 3 d. 4

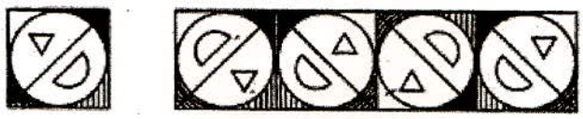
50. In each of the following questions, you are given a combination of alphabets and/or numbers followed by four alternatives (1), (2), (3) and (4). Choose the alternative which is closely resembles the water- image of the given combination.CO5K2

US91Q4M5W3



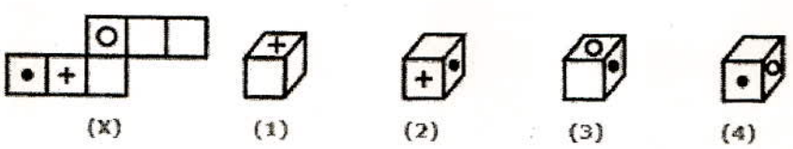
a. 1 b. 2 c. 3 d. 4

51. In each of the following questions, choose the correct mirror images of the given image of the Fig.(X) from amongst the four alternatives (1), (2), (3) and (4) given along with it. Choose the correct mirror image of the given figure (X) from amongst the four alternatives. CO5K3



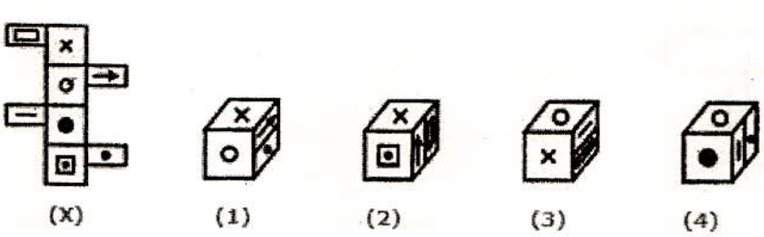
(X) (1) (2) (3) (4)

52. The sheet of paper shown in the figure (X) given on the left hand side, in each problem, is folded to form a box. Choose from amongst the alternatives (1), (2), (3) and (4), the boxes that are similar to the box that will be formed. Choose the box that is similar to the box formed from the given sheet of paper (X).CO5K3



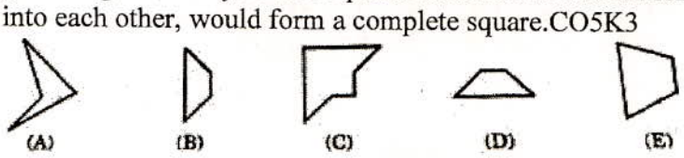
a. 1 only b. 1, 2 and 3 only c. 2 and 3 only d. 1, 2, 3 and 4

53. The sheet of paper shown in the figure (X) given on the left hand side, in each problem, is folded to form a box. Choose from amongst the alternatives (1), (2), (3) and (4), the boxes that are similar to the box that will be formed.Choose the box that is similar to the box formed from the given sheet of paper (X).CO5K3



a. 1 and 2 only b. 1 and 3 only c. 3 and 4 only d. 1, 2, 3 and 4

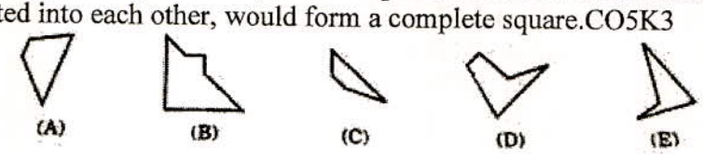
54. A set of five figures is given and you are required to select a combination of three figures which when fitted into each other, would form a complete square.CO5K3



(a) ACD (b) CDE (c) BCD (d) ACE

a. BCD b. CDE c. ACE d. ACD

55. A set of five figures is given and you are required to select a combination of three figures which when fitted into each other, would form a complete square.CO5K3



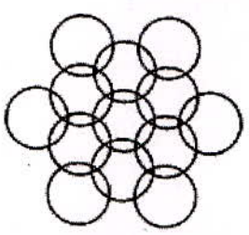
(a) ABC (b) ABD (c) ABE (d) BCE

a.ABC b. BCE c. ABD d. ABE

56. The medians of a triangle cut each other in the ratio ofCO5K3

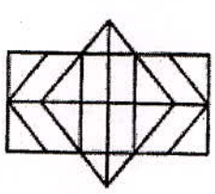
a.4 : 7 b. 3 : 1 c. 2 : 1 d. 1 : 1

57. How many circles are there in the adjoining figure.CO5K2



a. 11 b. 12 c. 13 d. 14

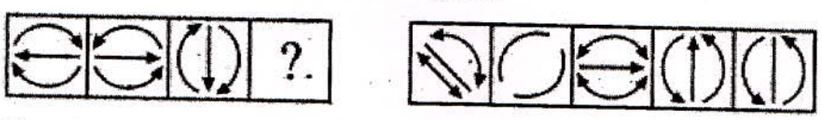
58. Determine the number of rectangles and hexagons in the given figure.CO5K3



a. 30, 5 b. 32, 3 c. 28,5 d. 30,3

59. Each of the following questions consists of two sets of figures. Figures A, B, C and D constitute the Problem Set while figures 1, 2, 3, 4 and 5 constitute the Answer Set. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by selecting a suitable figure from the Answer Set that would replace the question mark (?) in fig. (D). Select a suitable figure from the Answer Figures that would replace the question mark (?).CO5K3

Problem Figures: Answer Figures:



(A) (B) (C) (D) (1) (2) (3) (4) (5)

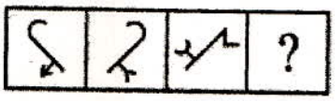
a. 1 b. 2 c. 3 d. 4

60. Each of the following questions consists of two sets of figures. Figures A, B, C and D constitute the Problem Set while figures 1, 2, 3, 4 and 5 constitute the Answer Set. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by selecting a suitable figure from the Answer Set that would replace the question mark (?) in fig. (D).

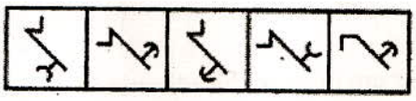
Select a suitable figure from the Answer Figures that would replace the question mark (?).

CO5K3

Problem Figures:



Answer Figures:



(A) (B) (C) (D) (1) (2) (3) (4) (5)

a. 1 b. 2 c. 3 d. 4

No. of copies: 30 + 10 = 40