CMAT-06. SOLUTION

SOLUTION WITH ANSWERKEYS

1	c	2	b	3	d	4	b	5	b	6	b	7	a	8	a	9	a	10	b
11	b	12	a	13	c	14	b	15	a	16	a	17	d	18	b	19	c	20	b
21	a	22	d	23	c	24	b	25	c	26	a	27	d	28	c	29	a	30	d
31	d	32	b	33	c	34	b	35	c	36	b	37	a	38	b	39	d	40	b
41	d	42	d	43	c	44	a	45	b	46	c	47	a	48	c	49	d	50	c
51	c	52	d	53	d	54	d	55	b	56	a	57	d	58	c	59	a	60	b
61	a	62	b	63	b	64	a	65	d	66	c	67	c	68	b	69	b	70	c
71	b	72	c	73	b	74	c	75	a	76	c	77	b	78	c	79	b	80	b
81	a	82	b	83	d	84	a	85	b	86	d	87	a	88	c	89	a	90	a
91	b	92	c	93	d	94	b	95	b	96	d	97	a	98	b	99	b	100	d

1. c Interest for the first 5 years

$$\frac{100000 \times 8 \times 5}{100} = 40,000$$

Interest for the last 2 years

$$\frac{140000 \times 10 \times 2}{100} = 28,000$$

Hence, final amount received by him = 140000 + 28000
= ₹1,68,000.

2. b Amount of spirit = 75 liters
Amount of water = 25 liters
Let x liters water to be added to convert it into 60% spirit solution. Then,

$$\frac{75}{100+x} \cdot 100 = 60$$

$\Rightarrow$ 7500 = 6000 + 60x

$\Rightarrow$ 60x = 7500 − 6000

$\Rightarrow x = \frac{1500}{60} = 25$ liters.

3. d The ratio in which profit will be shared among Ajay, Boman and Chirag
= 28000 × 12 : 40000 × 7 : 56000 × 5
= 6 : 5 : 5

Hence, share of Boman $= \frac{5}{16} \cdot 32000 = $ ₹10,000.

4. b Let the original price of the machine be ₹100.
Price after 20% increase = 100 + 20% of 100 = ₹120
Price after 15% decrease in the following ear
= 120 − 15% of 120 = ₹102
∴ Net increase in the price of the machine = 102 − 100 = ₹2
Hence, price of the machine increases by 2%.

5. b Let the number of boys be 13x and the number of girls be 10x.
From statement I:
It is given that the number of boys is 30% more than that of girls. But, we don't have any information regarding the total number of students. So we can't give the answer from statement I alone.
From statement II:
It is given that number of girls is 15 less than the number of boys.
So 3x = 15 $\Rightarrow$ x = 5
Therefore, the number of boys can be found.
Hence, from statement II alone we can answer the question.

6. b Time taken to cover 180 km by car $= \frac{180}{60} = 3$ hrs

Time taken to cover 240 km by train $= \frac{240}{80} = 3$ hrs

Time taken to cover 300 km by bus $= \frac{300}{50} = 6$ hrs

Total time taken to complete the whole journey
= 3 + 3 + 6 = 12 hrs

Average speed $= \dfrac{\text{Total distance}}{\text{Total time taken}}$

$= \dfrac{180 + 240 + 300}{12}$

$= \dfrac{720}{12} = 60$ km/hr.

7. a Sum of ages of 40 students = 40 × 18 = 720
Since 2 students left, sum of ages of 38 students = 38 × 18 = 684
∴ Sum of ages of 2 students = 720 − 684 = 36
Hence, age of the second student = 36 − 14 = 22 years.

Alternate Method:
As average age did not change,
∴ Sum of ages of these two students = 18 × 2 = 36 years.
Hence, age of the second student = 36 − 14 = 22 years.

8. a The profit of Sun Entertainment increased from ₹25 lakh in 2nd quarter to ₹35 lakh in 3rd quarter i.e., an increase of 40%, which is the highest among the all.

9. a Numbers from 1 to 9 will give the first 9 digits and numbers from 10 to 65 will give the remaining 112 digits.
Hence, last digit of the resultant number = 5.

10. b Let the price of a table and a chair be ₹x and ₹y respectively.
According to the question,
4x + 3y = 3200   ... (i)
5x + 7y = 5300   ... (ii)
From equations (i) and (ii), we get
x = 500 and y = 400
Hence, price of a table = ₹500.

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11. b Since 4 is a root of $3x^2 - (3a + 2)x + 7 = 0$,

$3 \cdot (4)^2 - (3a + 2)(4) + 7 = 0 \Rightarrow a = \dfrac{47}{12}$.

12. a Number of students admitted in MBBS in the five institutes = 112 + 150 + 172 + 100 + 116 = 650
Total number of students in institute A = 700
Total number of students in institute B = 800

Hence, required percentage $= \dfrac{650}{1500} \cdot 100 = 43.33\%$.

13. c $\dfrac{X + Y + Z}{3} = 2025 \Rightarrow X + Y + Z = 6075$

From statement I, Y + Z = 1324
From statement II, X + Z = 1355
Hence, using both the statements together we can answer the question.

14. b The remainder when 25^{82} is divided by 27 is the same as the remainder when $(-2)^{82}$ is divided by 27. Now, using Remainder Theorem,
$(-2)^{82} = 4^{41} = (4^4)^{10} \times 4 = (256)^{10} \times 4$
When 256 is divided by 27, the remainder is 13.
$\Rightarrow 13^{10} \times 4 = 169^5 \times 4$
When 169 is divided by 27, the remainder is 7.
$\Rightarrow 7^5 \times 4 = 49^2 \times 7 \times 4 = 49^2 \times 28$
When 49 is divided by 27, the remainder is 22 or –5 and when 28 is divided by 27, the remainder is 1.
$\Rightarrow (-5)^2 \times 1 = 25$ is the remainder when 25^{82} is divided by 27.

15. a Let the smallest number be 'a'.
$\therefore$ Largest number = a + 100

$S_n = \dfrac{n}{2}(a_1 + a_n)$

$\Rightarrow 750 = \dfrac{5}{2}(a + a + 100)$

$\Rightarrow a = 100$

Hence, smallest number = 100.

16. a Length of water that has flown out of the pipe in a minute = speed of water × time

$= 30 \text{ km/hr} \times 1 \text{ minute} = 30 \cdot \dfrac{1}{60} = \dfrac{1}{2} \text{ km} = 500 \text{ m}$

Volume of water flown out in a minute = Volume of cylindrical pipe

$= \pi r^2 h = \dfrac{22}{7} \cdot (7)^2 \cdot 500 = 77000 \text{ m}^3$

$= (77000 \times 1000) \text{ l} = 7.7 \times 10^7$ litres.

17. d Since 3 particular persons always sit together, they will be considered as a single identity.
$\therefore$ Total number of identities to be arranged
= (14 – 3) + 1 = 11 + 1 = 12
Hence, required number of arrangements = 12! × 3!.

18. b Total number of outcomes = 6^3 = 216
Now a sum more than 15 can be obtained in the following ways:
(5, 5, 6), (5, 6, 5), (6, 5, 5), (6, 6, 5), (6, 5, 6), (5, 6, 6), (6, 6, 6), (6, 6, 4), (4, 6, 6) and (6, 4, 6)
Thus, there are 10 favourable outcomes

Hence, required probability $= \dfrac{10}{216} = \dfrac{5}{108}$.

19. c Total quantity of the mixture initially
= 17 + 35 + 48 + 27 + 25 = 152 ml
Required percentage

$\dfrac{25}{152 - 48} \cdot 100 = 12.5\%$.

20. b $f(4) = 4^2 - 3(4) + 2 = 6$
Hence, $g(f(4)) = g(6) = 6^3 - 2(6) = 204$.

21. a $12^{13} \times 13^5 \times 14^2$
Units digit of $12^{13} = 2$
Units digit of $13^5 = 3$
Units digit of $14^2 = 6$
Units digit of $12^{13} \times 13^5 \times 14^2$
= Units digit of $2 \times 3 \times 6 = 6$.

22. d Let the work (in units) done by a man and a woman in a day be 'm' and 'w' respectively and the total work to be done be 100 units.
$10 \times (5m + 4w) = 100$ ...(i)
$10 \times (7m + 3w) = 100$ ...(ii)

From equations (i) and (ii), we get, $m = \dfrac{10}{13}$

Hence, time taken by 10 men to complete the work

$\dfrac{100}{10} \cdot \dfrac{13}{10} = 13$ days.

23. c Total discount given = 1200 – 800 = 400
S.P. after 1st discount of 20%
= 1200 – 20% of 1200 = 960
S.P. after 2nd discount of y%
= 960 – y% of 960
According to the question,
960 – y% of 960 = 800

$\Rightarrow 960 - \dfrac{960y}{100} = 800$

$\Rightarrow y = \dfrac{160 \cdot 100}{960} = \dfrac{50}{3}\%$ i.e. $16\dfrac{2}{3}\%$.

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24. b Part of tank filled by both the pipes in one hour

$$= \frac{1}{20} + \frac{1}{30} = \frac{3+2}{60} = \frac{5}{60} = \frac{1}{12}$$

So time taken to fill the tank by two pipes = 12 hrs

Now, part of tank that has to be filled = $\frac{75000}{100000} = \frac{3}{4}$

Hence, $\frac{3}{4}$th part of the tank will be filled in

$\frac{3}{4} \cdot 12 = 9$ hrs.

25. c Let length of the train be 'x' m. Then,

$$\frac{x}{10} - \frac{x}{12} = 18 \cdot \frac{5}{18}$$

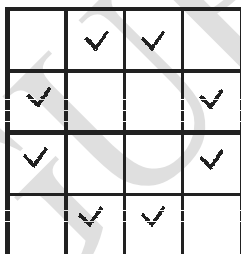$$\Rightarrow \frac{x}{60} \ 5 \quad x \quad 300 \text{ m}.$$

26. a Aryan's sister's father's father is his/her grandfather and his/her grandfather's only son is his/her father. Aryan's father's wife is his/her mother. Hence, the lady is the mother of Aryan.

27. d 25, 52, 38, 83, 50, 5, 126, __
It consists of two series:
Series I : 25, 38, 50, 126, __
Series II: 52, 83, 5, __
Numbers in the second series have been obtained by reversing the order of the digits of the numbers in the first series.
Hence, the next term will be reverse of 126, i.e., 621.

28. c In the figure given below shows a face of the larger cube that is cut into 64 identical cubes.

	✓	✓	
✓			✓
✓			✓
	✓	✓	

The middle cubes at each edge of the larger cube have exactly two faces painted.
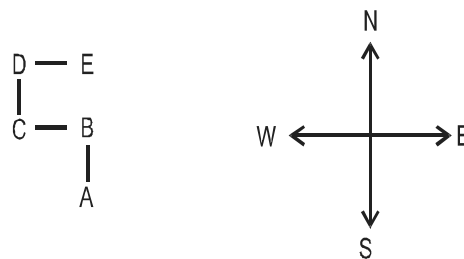Since number of edges of a cube = 12
Hence, number of smaller cubes has exactly two faces painted red = 12 × 2 = 24.

Alternate solution:
Number of cubes = 12(n – 2) = 24, where 'n' is the number of cubes in a row or a column.

29. a The arrangement of the 5 persons is as follows:

```
D — E
|
C — B
    |
    A
```

```
        N
        ↑
W ←————————→ E
        ↓
        S
```

Hence, D is to the North-west of A.

30. d The alphabetical position of the first letter is increasing by +1, +2, +3, +4.
The alphabetical position of the second letter of a term is double of the first letter of that term.
The digit in the middle is increasing by +3, +6, +9, +12.
Hence, the term following H24P will be L36X.

31. d Number of families having all the four things is 20.

32. b Every step involves the arrangement of one word in reverse alphabetical order.
Step I: very Suresh and Ramesh are funny men
Step II: very Suresh Ramesh and are funny men
Step III: very Suresh Ramesh men and are funny
Step IV: very Suresh Ramesh men funny and are
Step V: very Suresh Ramesh men funny are and
Hence, Step V is the final step.

33. c Ram's one of the parents is the only child of the grandmother of the girl. Hence, the girl is the sister of Ram.

34. b From left, D will be at the 4th position and E will be at the 2nd position. Now, A is not at any of the extreme ends, therefore, he has to be at the 3rd position from left. Also, C is at the extreme right end. So, the correct order is BEADC.

35. c The two possible cases are:

Day	Monday	Tuesday	Wednesday	Thursday
Case I	Hockey	Ludo	Cricket	Chess
Case II	Hockey	Ludo	Chess	Cricket

Hence, Ludo was played on Tuesday.

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36. b The only possible case is:

Time	Lectures
1:00-2:00	L5
2:00-3:00	L4
3:00-4:00	L3
4:00-5:00	L2
5:00-6:00	L1

Hence, L3 was sheduled from 3:00 p.m. to 4:00 p.m.

37. a The two possible cases are:

First to last (left to right)					
Case 1	B	C	A/D	E	D/A
Case 2	D/A	E	A/D	C	B

Hence, E is definitely sitting next to D.

38. b From first and second statements, we find "chocolate" means gamma.
From second and third statements, we find "gets" means delta.
From first and third statements, we find "He" means alpha
From the third statement, we find "nothing" means phi.

39. d Here, letters at the odd number of positions in English alphabet are coded as 1 and the ones at even number of position are coded as 0.
So A = 1, B = 0, C = 1, D = 0,… and so on.
Hence, the code for RAHANE is 010101.

40. b Except 861, all others are squares of natural numbers.

41. d Given expression is:
$4 \times 6 \div 20 + 3.6 \div 2 - 1.5 \times 5$
Applying BODMAS, we get

$$\frac{4 \cdot 6}{20} + 1.8 - 7.5 = 1.2 + 1.8 - 7.5 = -4.5.$$

42. d

	MAT	CAT	ATMA	XAT	CMAT
A	X	X	√	X	X
B	√		X/√	X	X
C	√		√		√
D	√		X/√	X	√
E	√		X/√	√	√

Hence, 4 students appeared for CAT.

43. c Only N and P satisfy the given conditions.

44. a The given information can be shown with the help of the table given below.

Friend	Gopal	Kishan	Madhav	Vishnu
Car	I-10	Ritz	I-20	Getz
Colour	Green/Red	Blue	Red/Green	Yellow

Hence, option (a) is definitely correct.

45. b The series is:
$2 \times 3 = 6$
$3 \times 5 = 15$
$5 \times 7 = 35$
$7 \times 11 = 77$
and so on.
Where 2, 3, 5, 7, 11, 13 and 17 are prime numbers in increasing order.
Hence, the wrong number is 99.

46. c None of the assumptions are implicit because we cannot assume that some economies are called developing economies or underdeveloped economies. The implicit information is that there are economies other than developed economies but how they are addressed is beyond the scope of the given statement.

47. a Advertisement is specifically trying to attract the passengers by telling them that the fares of this Airline are lower than train fares which obviously shows that people prefer travelling by train mainly because of low fares otherwise they would have chosen to fly. There is no mention or hint of the fares of other airlines. Hence, only assumption I is implicit.

48. c Statements (i) and (ii) all rats are cows and no cow is white imply that no rat is white. Therefore, conclusions I and II follow.

49. d Both the conclusions follow because motivation comes only after some kind of participation in the main stream activities.

50. c Power consumption is an indicator of development and in no way depends on power rates. Hence, only conclusion I follows.

51. c 'Popular in option (a) is inconsistent with "undermines stability" in the sentence. Hence, option (a) is negated. In option (b) "people profile" is grammatically incorrect, in option (d) "leotard profile is also incongruous as 'leotard' is a close fitting one piece garment. Hence option (c) is the correct answer.

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52. d   In option (a) "do not fully sing what is being said" is logically incorrect. In option (b) 'pious' being related to "people explode with cries of Wah!" is also out of place. Hence, option (d) is the right answer.

53. d   In option (a) "conniving judicial powers" would be inconsistent, in options (b) and (c) 'covering' and 'converting' judicial powers is also illogical. Hence option (d) is the answer.

54. d   In option (a) and (b) "concealing its joys." and "concealing its waggery" are out of place. The sentence talks about the "Pastoral" life being delightful but not completely flawless, Hence, 'illustration', 'method' and 'idyllic' do not fit. Option (d) fits appropriately.

55. b   'Outrage' and 'destruction' are the most befitting words.

56. a   'Drawing on ones fancy' means using ones imagination.

57. d   'Resting on ones laurels' means being complacent with what one has done in life.

58. c   'Making no bones' about something means not having any hesitation in accepting something.

59. a   'To make a clean breast of everything' is to confess without reserve.

60. b   A is an elaboration of the "declining foreign trade" mentioned in C. Hence, CA is a mandatory pair to which "Thus" in D refers. This gives us CAD hence, option (b) is the correct choice.

61. a   The correct order sholuld be BCDEA, BC is a mandatory pair because sentence B introduces procurement and sentence C gives further information about it. Sentence A is the concluding statement. Hence BCDEA is the correct order.

62. b   'Language' cannot be an exercise or transition. Hence a and d are ruled out. And 'c' can be ruled out on the basis of the second blank; weary does not fit the context.

63. b   The comparison is between Russian music and music of France, therefore the adjectives should have a degree of comparison.

64. a   We are talking of two actions: (i) Mani missed two buses; and (ii) Mani was determined to get into the third bus. And the two actions are happening one after the other, not simultaneously. This sense cannot be conveyed by the participle 'missing'. We require either the perfect participle 'having missed' or the clause 'after he had missed'. Hence 'c' and 'd' are ruled out. If a vehicle pulls off, it leaves the road in order to stop for a short time. For example; The car pulled off the motorway to fill up with petrol. Whereas if a vehicle

pulls up, it simply stops; eg at a bus stop or at the traffic lights. Hence option 'b' should be ruled out.

65. d   Option (a) is incorrect because of the use of present perfect continuous tense. Again, to run wildly does not have the sense of going astray. Hence, optoin (b) is also incorrect. As for option (c), when let is followed by the object and the infinitive, the word does not form a part of the infinitive.

66. c   The Federal Reserve is concerned about the lenders and the effect on the housing market. The argument does not imply that the Reserve is concerned about the profits made by Fannie and Freddie. Thus, (1) strengthens the concerns of the Reserve and (2) does not.

67. c   The psychological scientist considered his rating method to be analogous to a buggy thermometer where inaccuracies get adjusted to yield a fairly correct result.

68. b   Option (a) is generic in nature and is negated. (c) and (d) are inferences that can be drawn from the passage and express the ideas that the author is most likely to agree with. But they do not capture the full meaning of the passage. Option (b) is the most appropriate choice.

69. b   The scope of the term democratic governance has not been defined in the given debate. Thus, (a) cannot be correct. A clear hint about putting a ban on negative advertising is also not reflected in the debate. Thus, (c) is incorrect. (d) gives justice to the issue expressed by Riddle but fails to incorporate the opinion of Tom. Thus, (d) is negated. (b) expresses the issue most effectively.

70 . c   Option (c) presents the best possible summary of the given passage. It includes the mention of researchers who have succeeded in using the fuel used by most cancer cells to act as their weakness. Option (a) is close but is incomplete in expressing the full idea.

71. b   (a) lacks the specificity presented in the passage and is generic in nature. (c) and (d) are conclusions that can be drawn from the passage but fail to capture its full message. (b) captures the essence effectively.

72. c   Option (a) is incomplete and vague. Option (b) is incorrect because it is unclear that which practice is being defended by Reeta. (d) is incorrect because Reeta does not agree to Reema's argument. (c) expresses the response of Reeta most appropriately.

73. b   The issue between Doctor X and Doctor Y is about the management and treatment of dangerously thin anorexia nervosa patients. Doctor X prescribes the method of force feeding whereas doctor Y opposes it by citing the risks and complications involved. (b) captures the issue most effectively. (c) is close but

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deals with patients in general (the scope of the argument is limited to anorexia nervosa patients). Thus, it is negated.

74. c   2 can be inferred from the line "The employer keeps buying units of a person's potential, or not buying it, depending on the money he pays to encourage it." As the productive capacity can be increased or decreased on the basis of financial encouragement, it is not fixed and can vary. 1 cannot be inferred because a case is possible when an employee joined a firm with his highest productive capacity but his capacity declined with time due to absence of financial encouragement from the employer. Thus, (c) is the correct choice.

75. a   The argument implies that the ratings were misleading. 1 supports the argument by discussing the benefit drawn by the rating agencies. 2 is incorrect because the system used by the agencies was not objective in nature so the question of making it more objective does not arise.

76. a	77. d	78. d	79. a	80. c
81. c	82. a	83. d	84. b	85. b
86. d	87. c	88. b	89. a	90. c
91. c	92. d	93. d	94. c	95. c
96. b	97. c	98. c	99. d	100. a

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