1. Honesty or being truthful is consider by many to be valuable and they (try to) practice it. There is a complement set of people who make no attempt to be truthful. Some computer scientist belong to the honest and set and others to the dishonest set. You can trying to find the particular computer scientist. The only question you can ask has to do with there honest and whether are not. They are a computer scientist and you are not a computer scientist. So you try to first find a computer scientist by asking the first person is meet the question " Are you an honest computer scientist?" To which she replies "I am neither honest nor a computer scientist." From this response you

    (a) There is a 50% chance that this person is computer scientist.

    (b) Can definitely conclude that this person is not a computer scientist.

    (c) Can definitely conclude that this person is a computer scientist.

    (d) None of these

2. From each of two equal lines of length I a portion is cut of at random and removed. The probability that the sum of reminders is less than I is

    (a) $< \dfrac{1}{2}$ (b) $= \dfrac{1}{2}$ (c) $> \dfrac{1}{2}$ (d) None of these

3. The curve $\dfrac{x^2}{a^2} + \dfrac{y^2}{12} = 1$ and $y^3 = 8x$ intersects at right angle, then the value of a^2 is

    (a) 8   (b) 4   (c) 2   (d) 16

4. Five horses named Earth, Water, Fire, Air and Space ran race. They reached the half way point in alphabetic order soon after that the Jockey on one of the horses kicked Air and was disqualified, at the end fire ran hard and improved its standing by one place. Which horse won?

    (a) Fire   (b) Earth   (c) Water   (d) Air

5. Five horses named Earth, Water, Fire, Air and Space ran race. Earth came third. Water was ahead of fire. Space was not ahead of Air. There was exactly one horse between Air and Fire. Which horse won?

    (a) Air   (b) Earth   (c) Fire   (d) Water

6. What should be the valued of the fourth column ?

#	X	X	X	44
#	+	+	#	46
x	+	#	+	
+	#	+	+	
43			?	

(a) 49　　　　(b) 50　　　　(c) 47　　　　(d) 145

7. If sum of two numbers is 6, then the minimum value of the sum of their reciprocals is

(a) $\dfrac{2}{3}$　　　　(b) $\dfrac{4}{3}$　　　　(c) $\dfrac{3}{2}$　　　　(d) $\dfrac{3}{4}$

8. If ARGOT coded as BTHQU, then BARON ?
   (a) CBSPO　　　　(b) DCTQP　　　　(c) DBTQP　　　　(d) DBTPP

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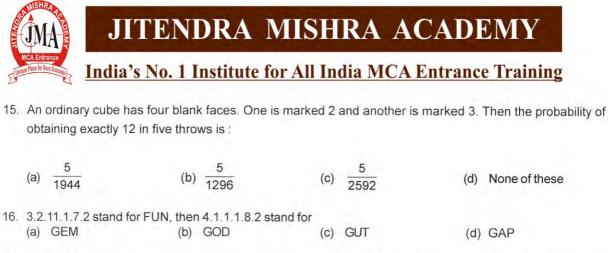## (India's No. 1 Institute for All India MCA Entrance Training)

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9. In a Bolt factory machines A, B and C manufacture 32, 40, 28 respectively, of the total of their output 3, 4, 6 are defective. A Bolt is drawn and is found to be defective. The probability that it was manufactured by C is

(a) $\dfrac{12}{53}$　　　　(b) $\dfrac{20}{53}$　　　　(c) $\dfrac{21}{53}$　　　　(d) None of these

10. In each of a set of games it is 2 to 1 in favour of the winner of the previous game. The chance that the player who wins the first game shall win atleast three of next four games is

(a) $\dfrac{3}{9}$　　　　(b) $\dfrac{1}{9}$　　　　(c) $\dfrac{4}{9}$　　　　(d) $\dfrac{2}{9}$

11. In a certain code, the code EQFPI stands for AMBLE. The code WTSYX would stand for
    (a) SPORT　　　　(b) SPOTS　　　　(c) SPOUT　　　　(d) TOPUR

12. The shortest distance between the parabola $y^2 = 4x$ and the circle $x^2 + y^2 + 6x - 12y + 20 = 0$ is
    (a) $4\sqrt{2} - 5$　　　　(b) $5\sqrt{2} + 4$　　　　(c) $4\sqrt{2} + 5$　　　　(d) $5\sqrt{2} - 4$

13. If a and b are chosen randomly from the set {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}. Then the probability that the equation $x^2 + ax + b = 0$ has real roots is

(a) $\dfrac{64}{100}$　　　　(b) $\dfrac{54}{100}$　　　　(c) $\dfrac{52}{100}$　　　　(d) $\dfrac{62}{100}$

14. The function $f : R/\{0\} \to R$ given by $f(x) = \dfrac{1}{x} - \dfrac{2}{e^{2x} - 1}$ can be made continuous at x = 0 by defining f(0) as

(a) 2　　　　(b) 0　　　　(c) −1　　　　(d) 1

15. An ordinary cube has four blank faces. One is marked 2 and another is marked 3. Then the probability of obtaining exactly 12 in five throws is :

  (a) $\dfrac{5}{1944}$ (b) $\dfrac{5}{1296}$ (c) $\dfrac{5}{2592}$ (d) None of these

16. 3.2.11.1.7.2 stand for FUN, then 4.1.1.1.8.2 stand for
  (a) GEM   (b) GOD   (c) GUT   (d) GAP

17. Two concentric circles are drawn such that the tangent at point P on the smaller circle intersects the larger circle at points A and B. The length of the line segment AB is 6 unit. If the radii of the two circles are integers. Then the ratio of the area of smaller circle to the area of larger circle ?
  (a) 0.64   (b) 0.5   (c) info insufficient   (d) None of these

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Direction : Letters A to P both inclusive are placed in a 4×4 grid such that the following constraints are satisfied
  I is to right of H and below B.
  C is to the left of N and above H which is to the right of P.
  P is below O and to the left of I.
  M is below A which is also to the left of I.
  K and F are to the right of L which is below G.
  J is below D which is to the left of G and M.
  E is above K and below B.

18. The left most letter in the lowest row is
  (a) M   (b) K   (c) J   (d) F

19. In a certain code, the code ZYOV stands for ABLE. The code HLFI would stand for
  (a) SULK   (b) SOUR   (c) FOLD   (d) GRIM

20. 3 tangents are drawn at random to a given circle. The odds against the circle being inscribed in the triangle formed by these tangents are
  (a) 2:1   (b) 3:1   (c) 3:2   (d) None of these

21. If the area of the loop of the curve $ay^2 = x(x - a)^2$ is revolve about x axis, then the volume (in cu units) of the solid generated is

  (a) $\dfrac{\pi a^3}{3}$ (b) $\dfrac{\pi a^3}{6}$ (c) $\dfrac{\pi a^3}{4}$ (d) $\dfrac{\pi a^3}{12}$

22. A student of the final year bachelor's degree program in computing appears for an entrance exam for admission to a masters degree program in a prestigious institute and is successful in the exam. She is interested in the cutting edge web technologies of the day and is fairly adept at using and picking up these technologies. The prestigious institute on the other hand these technologies are peripherals and not the focus of their masters program then in your opinion the student
  (a) should join, only if she has no other option available
  (b) should definitely join the masters degree program at the institute
  (c) should definitely join the masters degree program at the institute

23. A manager in a software firm has been given charge of a new, large and prestigious projects which involves a large amount of cutting edge web technologies. He has under him a good programmer whose experience and interest is in programming and less on learning the next new technology. The manager is (fairly) sure that this programmer will be able to adapt and be productive in this new project. The question on hand is: should he induct the programmer into this new project? Your advise would be
   (a) should not induct the programmer
   (b) should induct only if he is unable to hire anybody who appears tolerable
   (c) should definitely induct the programmer
   (d) decide on the toss of the coin, since it does not appear sufficiently important

24. In a certain code, the code HAL stands for IBM. The code RTM would stand for
   (a) SUN   (b) DEC   (c) VOA   (d) ICL

25. In a certain code, the code ADORE stands for ZWLIV. The code QUEST would stand for
   (a) JFVHG   (b) FGVEI   (c) KGVIH   (d) IEVGF

26. Four points are chosen randomly from a square with sides of length $\sqrt{2}$, the probability that quadrilateral formed by this sequence of 4 point convex
   (a) cannot determined   (b) between 0.4 and 0.8
   (c) is < 0.4   (d) None of these

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Direction (Q. 27 - 28) : A cube having each side 4 inches having color RED, BLUE and GREEN in opposite sides is divided into half inch cubes. Answer the following questions

27. How many cubes have no side colored?
   (a) 216   (b) 148   (c) 343   (d) 125

28. How many cube have only one colored side ?
   (a) 125   (b) 216   (c) 296   (d) 256

29. The number of real roots of the equation $\sum_{1}^{10}(x-r)^3 = 0$ is
   (a) 1   (b) 0   (c) 2   (d) 3

30. The five digit number divisible by 3 is to be formed using the numbers 0, 1, 2, 3, 4 and 5 without repetition. The total number of ways in which this can be done is
   (a) 240   (b) 216   (c) 3125   (d) 600

31. If $ax^2 - bx + c$ has distinct real roots in (0,1), where a, b, c belongs to the set of natural numbers. Then $16c(a - b + c)$ is
   (a) $> a^2$ (b) $= a^2$ (c) $< a^2$ (d) $\geq a^2$

32. Let $f : R \rightarrow R$ be differentiable for all x. If $f(1) = -2$ and $f'(x) \geq 2$ for x in [2, 6], then

(a) $f(6) \geq 8$ (b) $f(6) < 5$ (c) $f(6) < 8$ (d) $f(6) = 5$

33. In a certain code, the code BID stands for B1C3A2. The code COP would stand for
    (a) C1C5A6   (b) A6C1B7   (c) C1C5A4   (d) A3M3P1

34. If $f(x + y) = f(x) f(y)$ for all real x and y, $f(6) = 3$ and $f'(0) = 10$, then $f'(6) =$
    (a) 10   (b) 15   (c) 30   (d) 600

35. In a supermarket the first 25 customers of the day purchased an average of two items , after a further 15 customers, the average number of items purchased by each customer rose to 8, then average number of items purchased by at last 15 customers only is
    (a) 16   (b) 18   (c) 12   (d) None of these

36. 27, 27, 28, 29, 31, 34, 39, 47, ...,............,............
    (a) 62, 77, 105   (b) 60 ,81, 115   (c) 58, 87, 116   (d) 60, 83, 117

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37. In a certain code, the code FIG stands for B2C1B3. The code HOT would stand for
    (a) B3D5E·   (d) B4D3E4

38. The next element in the series 2, 8, 11, 18, 30, 47, 78 ?
    (a) 124   (b) 111   (d) 114   (d) None

39. The derivative of $f(\log x)$, where $f(x) = \log x$ is

    (a) $\dfrac{1}{x \log x}$ (b) $\dfrac{x}{\log x}$ (c) $x \log x$ (d) $\dfrac{\log x}{x}$

40. If tangents at point (x_1, y_1) and (x_2, y_2) to parabola $y^2 = 4ax$ intersect at (x_3, y_3), then
    (a) $y_2^2 = y_1 y_3$ (b) $y_3^2 = y_1 y_2$ (c) $x_2^2 = x_1 x_3$ (d) $x_3^2 = x_1 x_2$

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41. In a certain code, the code CCUI stands for BARE. The code DQGE would stand for
    (a) COWL   (b) CURL   (c) EROs   (d) CODA

42. Select the pair from the options given which is related in the same way as the two capitalized words are related to each other. PROBLEMS:HYPOTHESIS::
    (a) prognosis : condition   (b) forecast : warning   (c) cause : worry   (d) effect : solution

43. In a college of 300 students, every student reads 5 news paper and every newspaper is read by 60 students. The number of news papers in the college is
    (a) exactly 25   (b) at least 30   (c) at most 20   (d) exactly 20

44. One card from a pack of 52 cards has been lost. From the remainder of the pack two cards are drawn and are found to be clubs. The probability that the missing card is club is

(a) $\frac{3}{4}$ (b) $\frac{2}{52}$ (c) $\frac{1}{4}$ (d) $\frac{1}{13}$

45. A determinant is chosen at random from the set of all determinants of order 2 with elements 0 and 1 only. The probability that the value of the determinant chosen is positive ?

(a) $\frac{3}{16}$ (b) $\frac{2}{16}$ (c) $\frac{3}{15}$ (d) $\frac{2}{15}$

46. Five thieves realise that the ring they stole is missing. Anand says that Dinesh has it, Dinesh says that Bandu has it and Bandu says that Chittappa has it. Eddie says that he has it, and Anand has proof that he does not have it. If all but one of them are lying then the ring is with
(a) Dinesh   (b) Eddie   (c) Chittappa   (d) None of these

47. A frog is at the bottom of a staircase which has 30 steps. She can jump up at most 2 steps in one hop (jump). She can also jump one step in one hop. Let the number of ways she can reach the top stair be S(30). Among the following, which is closest to S(30)

(a) 29 + 14 ×29   (b) 30+15 × 29   (c) 100000   (d) 1000000

48. In a certain code, the code FROCK stands for SEBPX. The code BLAME would stand for
(a) OYNZR   (b) DNCOG   (c) YOZNV   (d) NXMYQ

49. If $fx = \cos(x) + \cos(ax)$ is a periodic function, then a necessarily is
(a) an irrational number   (b) an integer   (c) an even integer   (d) a rational number