

MBA 2016 – ANSWERS

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

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MBA 2016 – DETAILED SOLUTIONS

PART – I

1. (2)
Utilization of excess capacity is a major factor since the company wanted to improve its overall performance.
2. (2)
Runway's declining market share is a major factor since the company aims at arresting it and improving its profits and performance,
3. (3)
Runway's 100 years in business is a minor factor since it's is the performance at present by the company and its competitors is counted.
4. (2)
Consumer's acceptance of the new line is a major factor that will improve the sales of the company,
5. (3)
Competition from small manufacturers is a major factor since it may not directly affect the sales of the company.
6. (1)
Need to increase unit sales is the major objective of the company since the company is keen on increasing its sales and overall performance.
7. (1)
Reputation of Runway helps the company retain its sales and performance.
8. (3)
Protection of the small dealer is a minor factor since it will not directly impact the performance of the company.
9. (2)
Importance of styling is a major factor since this will increase the demand and sales of the company.
10. (4)
Sales to departmental stores is a major assumption since the company expects its sales to improve when it is done through departmental stores.
11. (1)
Motivating Japanese salesmen is the major objective of the company in order to improve the sales and performance.
12. (4)
Using US compensation methods in Japan is an assumption since the company would like to adopt the same in Japan and improve the performance of salesmen and hence its sales.
13. (2)
Labour management relations is a major factor that will affect the performance of salesmen and others in the company and in turn the profit and performance of the company.
14. (3)
Job security of Japanese workers is a minor factor from the point of company but a major one from the view point of workers.
15. (4)
Retaining the current XY sales force is a major assumption with which the company wants to work and improve its performance.
16. (4)
Doubling the sales force is again major assumption that company has to increase its sales.
17. (2)
Determining a sales compensation plan is a major factor since this will affect the performance of salesmen and hence the company.
18. (3)
Difference in American and Japanese fringe benefits is a minor factor since its effect on the sales may not affect the performance of the company.
19. (3)

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Understanding the Japanese class system is a minor factor considering its effect on sales and performance of the company.

20. (1)

Expanding XY product line is the major objective of the company in order to improve the performance of the company.

PART – III

41. (3)

Let the side of the square be a

$$\text{Its area} = a^2$$

$$\text{New side} = \frac{140a}{100} = \frac{7a}{5}$$

$$\text{New area} = \left(\frac{7a}{5}\right)^2 = \frac{49a^2}{25}$$

$$\text{Increase in area} = \frac{49a^2}{25} - a^2 = \frac{24a^2}{25}$$

∴ Percentage increase in area

$$= \frac{\left(\frac{24a^2}{25}\right)}{a^2} * 100 = 96\%$$

42. (1)

$$\text{Cost of one carton} = \frac{21}{28}$$

$$\therefore \text{Cost of 7 cartons} = 7 * \frac{21}{28} = \text{Rs. } 5.25$$

43. (4)

$$\text{Total Earning} = \left(\frac{1}{8} + \frac{2}{3} + \frac{3}{4} + \frac{1}{3} + 1\right) * 20$$

$$= \left(\frac{3+16+18+8+24}{24}\right) * 20$$

$$= \frac{69}{24} * 20 = 57.5$$

44. (2)

Let the three integers be x, x+1 and x+2

$$\text{Product} = x(x+1)(x+2) = 210$$

$$\text{Clearly } 5*6*7 = 210$$

Therefore three integers are 5,6,7

Sum of two smaller integers = 5+6 = 11

45. (4)

Let the cost of Dhall, Rice and Egg be D, R and E respectively.

$$\text{Then } D = \frac{1}{3} R \Rightarrow R = 3D$$

$$R = \frac{5}{4} E$$

$$\begin{aligned} \therefore E &= \frac{4R}{5} \\ &= \frac{4}{5} (3D) = \frac{12D}{5} \end{aligned}$$

$$\text{Egg} = \frac{12}{5} (\text{Rice})$$

46. (1)

$$\text{If } N = P_1^{\alpha_1} P_2^{\alpha_2} P_3^{\alpha_3} \dots P_k^{\alpha_k}$$

where P_1, P_2, \dots, P_k are prime number then number of divisions of N

$$\begin{aligned} &= (\alpha_1 + 1) (\alpha_2 + 1) \dots (\alpha_k + 1) \\ 88 &= 2^3 * 11 \end{aligned}$$

Number of divisors of 88

$$= (3+1)(1+1) = 4*2 = 8$$

$$91 = 7*13$$

Number of divisors of 91

$$= (1+1)(1+1) = 2*2 = 4$$

$$95 = 5*19$$

Number of divisors of 95

$$= (1+1)(1+1) = 2*2 = 4$$

$$99 = 3^2*11$$

Number of divisors of 99

$$= (2+1)(1+1) = 3*2 = 6$$

∴ 88 has most divisors.

47. (2)

Formula :

Single discount equal to successive discounts

$$X\% \text{ and } Y\% \text{ is } \left(X + Y - \frac{XY}{100}\right)\%$$

$$\text{In this problem} = X = 20\%$$

$$= Y = 15\%$$

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$$\begin{aligned} \text{Single discount} &= 20 + 15 - \frac{20 \times 15}{100} \\ &= 35 - 3 = 32\% \end{aligned}$$

48. (3)

$$\text{Part of the tank filled by A in 1 minute} = \frac{1}{20}$$

$$\text{Part of the tank filled by B in 1 minute} = \frac{1}{15}$$

Part of the tank filled by both A and B in 1 minute

$$= \frac{1}{20} + \frac{1}{15}$$

$$= \frac{3+4}{60} = \frac{7}{60}$$

∴ Time taken by A and B to fill the car tank

$$= \frac{60}{7} \text{ minutes}$$

49. (4)

$$\frac{x}{y} = 4 \Rightarrow \frac{y}{x} = \frac{1}{4}$$

? % of x = 2x - y

$$\Rightarrow \frac{?}{100} * x = 2x - y$$

$$\therefore ? = \frac{2x - y}{x} * 100$$

$$= (2 - \frac{y}{x}) * 100$$

$$= (2 - \frac{1}{4}) * 100$$

$$= (\frac{7}{4}) * 100 = 175$$

50. (1)

$$x > 2; y > -1$$

Therefore $xy > 2x(-1)$

$$\Rightarrow xy > -2$$

51. (1)

Let the number be x

$$\text{Then } 31\% \text{ of } x = 46.5$$

$$\Rightarrow \frac{31}{100} * x = 46.5$$

$$\therefore x = \frac{46.5 * 100}{31} = 150$$

52. (*)

$$\text{Cost Price} = \frac{100}{100 + \text{Profit percent}} * \text{Selling Price}$$

$$= \frac{100}{100 + 0.5} * 247.5$$

$$= \frac{24750}{100.5} = \text{Rs. } 246.27$$

53. (4)

Let the cost price be Rs. x

Profit percentage = x%

$$\text{Selling Price} = \frac{100 + \text{Profit \%}}{100} * \text{cost price}$$

$$\Rightarrow 75 = \left(\frac{100+x}{100}\right) * x$$

$$\Rightarrow x^2 + 100x = 7500$$

$$\Rightarrow x^2 + 100x - 7500 = 0$$

$$\Rightarrow x^2 + 150x - 50x - 7500 = 0$$

$$\Rightarrow x(x+150) - 50(x+150) = 0$$

$$\Rightarrow (x+150)(x-50) = 0$$

$$x = 50 \text{ (or) } -150$$

Cost price is not negative

∴ Cost price = Rs. 50

54. (*)

Let the principal be P.

If sum doubles then simple interest = 2P - P = P

$$S.I = \frac{PnR}{100}$$

$$\Rightarrow P = \frac{P * 16 * R}{100} \quad \therefore R = \frac{100}{16} = \frac{25}{4} \%$$

55. (3)

Let the radius of the circle be r.

$$\text{Then area} = \pi r^2$$

Decreased radius = 50% of r

$$= \frac{50}{100} * r = \frac{r}{2}$$

$$\text{New area} = \pi \left(\frac{r}{2}\right)^2 = \frac{\pi r^2}{4}$$

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$$\text{Decrease in area} = \pi r^2 - \frac{\pi r^2}{4} = \frac{3\pi r^2}{4}$$

$$\text{Decreased area percentage} = \frac{\left(\frac{3\pi r^2}{4}\right)}{\pi r^2} * 100 = 75\%$$

56. (2)

Formula : If price of a commodity increased by R% then the reduction in consumption so as not to increase the expenditure is $\left(\frac{R}{100+R} * 100\right)\%$

$$R = \frac{7.5-6}{6} * 100 = \frac{1.5}{6} * 100 = 25\%$$

$$\text{Required reduction} = \frac{25}{100+25} * 100$$

$$= \frac{25}{125} * 100 = 20\%$$

57. (4)

Let the maximum mark be x and pass mark by y

$$\text{Then } \frac{20x}{100} = y - 30$$

$$\frac{32x}{100} = y + 42$$

$$\frac{12x}{100} = 72$$

$$\therefore x = 600$$

$$\text{Now } y = \frac{20x}{100} + 30$$

$$= \frac{20 * 600}{100} + 30$$

$$= 120 + 30 = 150$$

$$\text{Pass mark} = 150$$

$$\text{Pass mark percentage} = \frac{150}{600} * 100 = 25\%$$

58. (1)

$$\text{Selling price of 1 toffee} = \frac{100}{20} = 5 \text{ paise}$$

$$\text{Cost price of 1 toffee} = \frac{100}{96} * 5$$

If the profit is 20% then

$$\text{Selling price of 1 toffee} = \frac{120}{100} \left(\frac{100}{96} * 5\right)$$

$$= \frac{120 * 5}{96} \text{ paise}$$

For 1 rupee, number of toffee to be sold

$$= \frac{100}{\frac{120 * 5}{96}} = \frac{100 * 96}{120 * 5} = 16$$

59. (3)

Let the principle be P

$$\text{Then S.I.} = \frac{P}{9}$$

Number of years = rate = R

$$\text{S.I.} = \frac{PnR}{100}$$

$$\Rightarrow = \frac{P * R * R}{100}$$

$$\therefore R^2 = \frac{100}{9}$$

$$\Rightarrow = \frac{10}{3} \%$$

60. (1)

When interest is compounded half yearly then

$$\text{Amount} = P \left[1 + \frac{\left(\frac{R}{2}\right)}{100}\right]^{2n}$$

$$P = \text{Rs. } 1600$$

$$\text{Amount} = \text{Rs. } 1944.81$$

$$R = 10\%$$

$$\Rightarrow 1944.81 = 1600 \left[1 + \frac{\left(\frac{10}{2}\right)}{100}\right]^{2n}$$

$$\Rightarrow \left[1 + \frac{5}{100}\right]^{2n} = \frac{1944.81}{1600} = 1.21550625$$

$$(1.05)^{2n} = 1.21550625 = (1.05)^4$$

$$\Rightarrow 2n = 4$$

$$\therefore n = 2 \text{ years}$$

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PART - IV

61. (2)

From Statement (a):

If x is the total number of residents, then
number of doctors = $\frac{x}{700}$

Since x is not known, statement (a) alone is not sufficient.

From Statement (b):

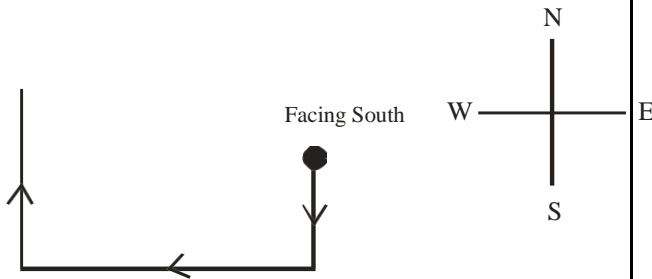
Total number of doctors in the town =
number of wards * number of doctors in
each ward = $16 * 16 = 256$

∴ Statement (b) alone is sufficient

62. (*)

From Statement (a)

A person faces south shall face north on
turning to his right twice.



Therefore Sunny faces south now

∴ Statement (a) alone is sufficient.

From Statement (b)

We know that after walking, Sunny shall face
towards left of Dinesh facing south (i.e. east).
Clearly a person walking southwards shall face
east on turning to his left. Thus Sunny is facing
south.

∴ Statement (b) alone is sufficient.

63. (*)

From Statement (a)

$$\text{First term} = (1+1)^2$$

$$\text{Second term} = (2+1)^2$$

$$\text{Third term} = (3+1)^2$$

$$\text{Fourth term} = (4+1)^2$$

$$\therefore 999^{\text{th}} \text{ term} = (999+1)^2$$

∴ Statement (a) alone is sufficient.

From Statement (b):

$$x^{\text{th}} \text{ term of } S = (x+1)^2$$

$$\therefore 999^{\text{th}} \text{ term of } S = (999+1)^2$$

Therefore statement (b) alone is sufficient.

64. (2)

Statement (a) alone is not sufficient.

From Statement (b)

Hitesh mother reached his house on Tuesday
9day after Monday)

∴ Hitesh visited the zoo on Sunday

∴ Statement (b) alone is sufficient.

65. (1)

From Statement (a)

$$\frac{(xy+xz+yz)}{xyz} = 4$$

$$\Rightarrow \frac{xy}{xyz} + \frac{xz}{xyz} + \frac{yz}{xyz} = 4$$

$$\Rightarrow \frac{1}{z} + \frac{1}{y} + \frac{1}{x} = 4$$

∴ Statement (a) alone is sufficient.

From Statement (b):

$$x+y = 3$$

Since the value of z is not given, statement
(b) alone is not sufficient.

66. (4)

From statement (a) and (b)

Width of the box = 80 cm

Length of the box = 1m = 100 cm

$$\begin{aligned} \text{Volume of the box} &= \text{width} * \text{length} * \text{height} \\ &= 80 * 100 * \text{height} \end{aligned}$$

Since height is not given, we cannot find the
answer.

67. (4)

From statements (a) and (b)

$$X = 3, 6, 9$$

$$Y = 2, 4, 6, 8$$

We cannot conclude whether X is greater
than Y .

For example:

$$\text{If } X = 6 \text{ and } Y = 8$$

then X is less than Y

$$\text{If } X = 6 \text{ and } Y = 4$$

then X is greater than Y

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- 68. (4)**
Congruent triangles have everything same. All sides and all angles are same for two congruent triangles. To check congruency we use AAS, ASA, SSS, AAA concepts
A – Angle
S - Side
When two triangle have one of these similar, then they are called congruent. For example in AAS, two angle and one side are same in two triangles.
From Statement (a) and Statement (b) side (s) and Angles (A) are not given, they are not sufficient.
- 69. (*)**
From Statement (a)
Vishakha is 8th to the left of Ashish who is 12th from the right end.
∴ Vishakha is $8+12 = 20^{\text{th}}$ from the right end.
Also Vishakha is 5th from the left end
∴ Total number of children in the row
 $= 20+5-1 = 24$
Statement (a) alone is sufficient.
From Statement (b)
Nisha is 7th from the right end and 18th from the left end.
Therefore total number of children in the row $= 7+18-1 = 24$
∴ Statement (b) alone is sufficient.
- 70. (4)**
Let the amount with Suman, Tarun and Vivek have S, T and V respectively.
From Statement (a)
 $S = T-20 \dots\dots(i)$
From Statement (b)
 $V = T+30 \dots\dots(ii)$
Adding (i) and (ii)
 $S+V = 2T+10$
Since the value of T is not given, both statements are not sufficient to get the answer.

- 71. (2)**
Let the salaries of Vinod and Javed be $4x$ and $3x$ respectively.
From Statement (a)
Statement (a) is another form of the question.
Therefore Statement (a) alone is not sufficient.
From Statement (b)
Javed's Salary = Rs. 4500
 $\Rightarrow 3x = 4500$
 $\therefore x = \frac{4500}{3} = 1500$
Vinod's salary $= 4x$
 $= 4*1500 =$
Rs.6000
Therefore statement (b) alone is not sufficient.
- 72. (3)**
From Statements (a) and (b)
shi tu ke -- pen is blue
ke is re -- this is Wonderful
Code for Is -- ke
- 73. (4)**
From Statements (a) and (b)
give Me Water -- 7 1 9

you can bring
water for me -- 5 7 4 1 8 6
Code for water is either 7 or 1
Therefore statements (a) and (b) are not sufficient to get the answer.
- 74. (2)**
Statement (a) alone is not sufficient.
The colour of fresh grass is 'green' and from statement (b) green is called 'brown'. So the colour of fresh grass is 'brown'.
- 75. (1)**
From Statement (a)
The Chairman visited purchase department on Monday of the first week of September.
Therefore statement (a) alone is sufficient.

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From Statement (b)

The time of visit of no department is mentioned.

Therefore Statement (b) alone is not sufficient.

76. (*)

297 – tie clip button

From Statement (a)

9 2 6 -- clip your tie

2 9 7 -- tie clip button

Code for ‘_button’ is ‘_7’

Statement (a) alone is sufficient.

From Statement (b)

1 7 5 -- hole and button

2 9 7 -- tie clip button

Code for ‘_button’ is ‘_7’

Statement (b) alone is sufficient.

77. (1)

From Statement (a)

Let the diameter of the circle = diagonal of square = D

Circumference of the circle

$$\begin{aligned} &= \pi r \\ &= \pi(2r) \\ &= \pi * \text{diameter} = \pi D \end{aligned}$$

The first fly travels a distance equal to π .

Perimeter of the square = 4a

$$= \frac{4}{\sqrt{2}} (\sqrt{2} a)$$

$$= 2\sqrt{2} * \text{diagonal} = 2\sqrt{2}D$$

Second fly travels a distance equal to $2\sqrt{2}D$

Since $2\sqrt{2}D < \pi D$

∴ The first fly travels farther

Therefore statement (a) alone is sufficient.

Statement (b) alone is not sufficient since one fly might have crawled faster than the other.

78. (*)

He is good – sin co bye

From Statement (a)

They are good -- co mot det

He is good -- sin co bye

Code for ‘_good’ is ‘_co’

Statement (a) alone is sufficient.

From Statement (b)

He is honest -- sin mic bye

He is good -- sin co bye

Code for ‘_good’ is ‘_co’

Statement (b) alone is sufficient.

79. (4)

Even from both Statements (a) and (b)

together do not reveal the exact time of departure of the train today

Therefore both statements are not sufficient to answer the question.

80. (1)

From Statement I, P is the mother of M and N, while Q is the daughter-in-law of P and Sister-in-law of N. Thus Q is M’s wife and hence M is N’s brother. Therefore Statement (a) alone is sufficient.

From Statement (b) M and N are the children of S. Also R is the daughter-in-law of S and sister-in-law of M. So R is N’s wife and thus, N is M’s brother. Hence, M is either brother or sister of N.

Therefore Statement (b) alone is not sufficient.

PART – V

81. (4)

Change as —by Mr. Sidharth’

82. (2)

change as —who he was referring to

83. (1)

–Each year all of his students

84. (2)

change as —between the Greeks and the Persians

85. (2)

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- changes as –Supposing he fails, what he will do||
- 86. (2)**
change as –I have bought many fireworks such as rockets etc||
- 87. (2)**
change as –It was a very good film||
- 88. (4)**
change as —has been saved||
- 89. (3)**
change as —the rapidly exploding||
- 90. (3)**
- change as : —because there are too many easily||
- 96. (2)**
verb – waylaid, waylaying – to intercept and attack from an ambush
- 99. (4)**
Tepid – characterized by lack of force or enthusiasm, lukewarm, moderately warm
- 100. (4)**
Tenacity—capable of being retained as it is, not giving up and persevering.