

MBA 2014 – EXAMINATION PAPER

PART – I

Instructions for Answering:

Read the passage. Understand the facts given in the passage. Relate the data listed following the passage to any one of the items listed below and choose the answer.

Your answer shall be choice:

1. If the statement is related to the result; that is, how well the goals are achieved.
2. If the statement is related to a decision; that is, elements in the problem for which a choice must be made.
3. If the data given in the statement is uncontrollable; that is, the element influences the results, but the decision maker has no control over it.
4. If the statement describes the risk; that is, the chance of the occurrence of the event in the problem situation is known.
5. If the statement is an assumption; that is, the reason given for a conclusion has no evidence.

Velachery is one of the fast developing areas of the Chennai city. The major builders have started building huge flats in Velachery. The population of Velachery has increased from 20,000 in the year 2000 to 1,00,000 at the beginning of the year 2007. The number of public and private sector banks have increased. Leading supermarkets have established their outlets. Branded electronic, garment and footwear showrooms are increasing. However, there is not even a single jewellery store in Velachery. People of Velachery have to go to other parts of the city to buy jewellery, Ms. Meera, one of the leading jewelers in the city wants to promote a jewellery store at Velachery. She thinks that she will succeed in the venture largely because the other stores are doing well in Velachery and no other jewellery store is there in Velachery. She does not have complete information about the jewellery market of Velachery. She also does not have professional knowledge of preparing a business plan for a new venture. Hence, she decides to hire a consultant to

provide information about the Velachery jewellery market and prepare a business plan to establish a jewellery store at Velachery. The consultant provides the business plan, which contains the details about the Velachery jewellery market, the estimate of finance required for the business, profit and loss statement and balance sheet for 5 years.

The composition of the Velachery population is divided into three categories. They are the Poor, Middle Class and the Rich. The proportion, the income and money spent on the purchase of jewellery items by these groups are:

Population Category	Proportion (in percentage)	Annual Income (Rs. In Lakhs)	Proportion of the annual income spent for buying jewellery items
Poor	20	Upto 2	10 per cent
Middle class	70	>2<=5	40 per cent
Rich	10	>5	60 per cent

For a good jewellery store at Velachery, there are more than 70 per cent chances to attract people from the nearby areas also. The nearby areas are Pallikaranai, Adambakkam, Guindy, Adyar, Thiruvannamiyur, Perungudi and Taramani. As per the information provided by the consultant, Rs. 195 crore is expected to be spent by the people of Velachery for the purchase of jewellery items per year. Another Rs. 45 crore per year, from the nearby area people can be expected to spend at velachery. The total money spent for jewellery at Velachery is expected to be Rs. 240 crore per year. Any new jewellery store entering the Velachery market with good product line and

marketing plan has 90 per cent chance of capturing 30 per cent of the money spent at Velachery for jewellery. The project cost for such a store is Rs. 50 crore, which the jeweler decides to mobilize. The components of the project cost are fixed cost, working capital and other expense. Fixed cost requirement for land, building and equipments is Rs. 10 crore. The working capital requirement for raw material, manufacturing, labour, marketing and other operations of the store is Rs. 35 crore. The requirement for other expenses such as consultancy fee, insurance etc, is Rs. 5 crore. The expected sale is Rs. 72 crore per year. The per year profit after deducting for all expenses and taxes as per accounting procedures is Rs. 15 crore for the first year. The average rate of return on investment is 32 per cent.

Competitors may enter into Velachery jewellery market. The nature of population growth may change. The spending pattern for jewellery may change. After considering all these uncertainties, Investment and opportunities the jeweller decides to launch her store in Velachery. She is ready to mobilize and invest Rs. 50 crore for the store. She will face the competition by proper marketing strategy. Change in population growth and pattern of spending will be closely monitored by outsourcing appropriate services and proper action plan will be developed and implemented. She is happy with the estimate of the profit from the project. She decides to start a private limited company. Her own investment is Rs. 10 crore. She is 99 per cent confident that she will get a loan of Rs. 25 crore from a commercial bank. The rest of the Rs. 15 crore is from her relatives, who have given their consent to join the business and provide their share of the investment. In the name of Meera Jewellers (P) Ltd, a private company has been registered with office at Velachery. The company buys a land for the store and enters into contract with a leading builder for constructing the showroom cum manufacturing complex. Meera is 90 per cent confident that the construction will be over in 6 months and the business inaugurated.

Questions:

1. Ms. Meera thinks that she will succeed in the venture because the other stores are doing well in Velachery.
2. Ms. Meera does not have complete information about the jewellery market of Velachery.
3. The proportion of middle class population is 70 per cent in Velachery.
4. The proportion of the income spent for buying jewellery items at Velachery.
5. Ms. Meera decides to use a consultant for Providing information about the jewellery market of Velachery.
6. The nearby area people are expected to spend Rs. 45 crore at Velachery for purchase of jewellery.
7. Any new jewellery store with good product line and marketing plan has 90 per cent chance of capturing 30 per cent money spent at Velachery for jewellery.
8. The project cost for the jewellery store is Rs. 50 crore, which Ms. Meera decides to mobilize.
9. The expected sale is Rs. 72 crore.
10. The profit after deducting for all expenses and taxes as per accounting procedures is Rs. 15 crore.
11. The average return on investment is 32 per cent.
12. Competitors may enter into the Velachery jewellery market.
13. She will face the competition by proper marketing strategy.
14. Spending pattern for jewellery may change.
15. The pattern of spending will be closely monitored.
16. Meera jewelers (P) Ltd., buys a land for the store.
17. Ms. Meera is 99 per cent confident that she will get a loan of Rs. 25 crore from a commercial bank.
18. Ms. Meera's relatives have given their consent to join the business and provide their share of investment.

19. Meera jewellers (P) Ltd enters into a contract for constructing the showroom cum manufacturing complex with a leading builder.
20. Meera jewellers (P) Ltd. is 90 per cent confident that the construction will be over within 6 months and the business inaugurated.

PART II

Instructions for Answering :

The passage given in this part is followed by questions based on its content. Read the passage and answer the questions by choosing the best answer to each question. Answer the questions based on what is stated or implied in the passage.

From new-age buildings for corporates and plush houses in Chennai, Shyam Builders is one of the major players in the construction and real estate business. With a well-diversified portfolio, integrated operations, substantial land reserves and foray into newer locations, this property player seems to have got the equation right. With the real estate currently booming, the company thinks it is the right time to raise funds from the capital market. Though some analysts feel the issue is aggressively priced, they are confident of the company's business model, aggressive management and earnings visibility.

The company is one of the leading Indian real estate players, its portfolio boasts of residential, contractual and commercial projects developed over 11.5 million sq ft. during the past decade. With 63 per cent of the revenues coming from the residential properties, the company takes up contractual work to cushion its business from real estate contractual work to cushion its business from real estate cycles.

Realizing the latent demand for the posh corporate houses, the company has made smart moves to take up contractual work. The company has constructed 75 projects on a contract basis in eight Indian states covering 8.42 million sq ft. the company will develop 23 contractual projects for leading corporates in information technology and entertainment industries, in the states of

Karnataka, Andhra Pradesh, Orissa, Tamil Nadu, Punjab and Maharashtra. The company makes residential apartments, villas, row houses and luxury apartments with amenities like clubhouse, swimming pools and shopping complexes. It has developed 21 residential projects in Chennai covering 2.98 million sq. ft. At present the company is working on 15 residential complexes spread over 4.97 million sq ft. in addition, it has planned another 13 projects covering 5.2 million sq. ft.

Driven by the rapid expansion by corporates, the retail boom and rising aspirations of the burgeoning middle class, the Indian real estate business is expected to grow at 33 per cent for another 5 years. While 80 per cent of the demand will come from residential space, speedy pace of consumerism and business expansions will drive demand for contract builders. The margins of leading real estate players stand high at 16 to 20 per cent in India against 6 to 8 per cent in the other developed markets. Moreover, with increased premiums for quality real estate, organized players making firm footprints in the highly fragmented property market are welcoming happy times.

Recognizing the future potential of the real estate business and that builders have an edge over contractors when it comes to realizations, the company has been building its own real estate portfolio by creating land bank. The ability to spot emerging trends and potential land locations, has helped the company to bag development rights in suburbs of tier - I and tier - II cities, ahead of competition. The company plans to make top end residential and commercial projects over owned land of around 118 million sq ft. spread across seven cities, which are valued at around Rs. 735 crore to Rs. 776 crore. The development would take around seven to eight years. The company has also entered into land arrangements to procure 11-7 million sq ft. In an industry where out sourcing is the norm, the company has in-house resources to develop live projects, from conceptualization to completion. The company

constructs its own projects and undertakes interior and finishing works as well as manufacture of raw materials. This integrated player has in-house architects, a concrete block making plant, an interiors and wood works factory, a metal and glazing plant, all of which assure timely and quality raw materials supply. Thus, the company can control cost overruns and enjoy good margins with no dependence on suppliers.

Having tasted success of its backward integration strategy, the company now wants to diversify its portfolio by entering into specialized service segments. The company wants to build hotels, malls, integrated townships, shopping complexes, multiplexes and undertake plot developments. Forward integration would enable the company to provide products across the real estate value chain.

The company has constructed convention centers, software development blocks, multiplexes, hotels and education and research centers for information technology companies. About 83 per cent of its contractual projects were executed for information technology companies across six states and further, the company will be working on 13 future projects valued at Rs.299 crore. Most of the company's revenues come from information technology companies and though the tech. majors have big expansion plans, excess dependence, may raise concerns. However, the company's association with information technology companies is also a key catalyst that will help this real estate maker to increase its contractual clientele. With most of its projects based in Chennai, the company is exposed to risks of regional slowdown and having realized this, the company is acquiring lands in other regions to reduce risks. The company is expanding business in cities like Mysore, Hyderabad, Pune, Mumbai, Bangalore, Goa and Jaipur.

The company coming out with a net public offering of 80 lakh shares, priced within a price band of Rs.550-640 each. It plans to raise between Rs. 440 crore and Rs. 512 crore, to fund land acquisitions (Rs.234.3 crore), loan repayments

(Rs.132.2 crore) as well as ongoing and planned projects (Rs. 142.5 crore). Given its management, good track record quality projects and land reserves, we think the company is a promising story.

Questions:

21. The company is a major player in
 - 1) Construction
 - 2) Land development
 - 3) Real estate
 - 4) Construction and real estate
 - 5) Contractual projects
22. The company gets their major revenue from
 - 1) Contractual projects
 - 2) Plot development'
 - 3) Residential properties
 - 4) Commercial projects
 - 5) Land banks
23. Indian real estate business is expected to grow because of
 - I) growth of middle class
 - II) retail boom-
 - III) expansion by corporates
 - 1) I only
 - 2) II only
 - 3) I and II only
 - 4) I,II and III
 - 5) Neither I, II nor III
24. There is latent demand for
 - 1) Commercial projects
 - 2) Posh corporaie houses
 - 3) Contractual projects
 - 4) Residential projects
 - 5). Concrete block making
25. The company controls cost overruns because
 - 1) of in-house resources
 - 2) projects can be developed, from conceptualization to completion
 - 3) of in-house architect
 - 4) of concrete block making plant
 - 5) of metal and glazing plant
26. Why the company wants to raise funds from capital market now?
 - 1) To fund land acquisition
 - 2) For loan repayment
 - 3) To complete on going projects
 - 4) There is a real estate boom

- 5) To improve quality in the business
27. The company takes up contractual work
- 1) because the revenue in contractual work is more
 - 2) to cushion its business from real estate cycles
 - 3) because the company has constructed 75 projects on a contract basis
 - 4) because the company enjoys a good margin
 - 5) because the company doesn't depend on suppliers
28. Demand from residential space is
- 1) 80 percent
 - 2) 33 percent
 - 3) 63 percent
 - 4) 70 percent
 - 5) 16 to 20 per cent
29. The company plans to develop
- 1) 75 contractual projects
 - 2) 23 contractual projects
 - 3) 21 contractual projects
 - 4) 15 contractual projects
 - 5) 13 contractual projects
30. The number of residential projects the company has finished, executing and planning is
- 1) 21
 - 2) 28
 - 3) 49
 - 4) 75
 - 5) 23
31. The amenities provided at the residential complexes by the company are
- 1) Club-house and Swimming Pool
 - 2) Swimming Pools and Shopping complexes
 - 3) Club-house and shopping complexes
 - 4) Swimming pools, club-house and shopping complexes
 - 5) Swimming pools, club-house, shopping complexes and children's park
32. The margin for leading real estate players in India is
- 1) 16 percent
 - 2) 20 percent
 - 3) 6 percent
 - 4) 8 percent
 - 5) 16 to 20 percent
33. In Chennai, the company has developed
- 1) 13 residential projects
 - 2) 21 residential projects
 - 3) 15 residential projects
 - 4) 75 residential projects
 - 5) 23 residential projects
34. The company has been creating land banks
- 1) because builders have edge over contractors
 - 2) because in future contractors will be doing well
 - 3) because the margins of leading real estate players is high
 - 4) because there will be competition in contracts
 - 5) because the property market is highly fragmented
35. The company is ahead of competitors
- 1) because of good planning
 - 2) because of buying land in good locations
 - 3) because of contract works
 - 4) because of outsourcing
 - 5) because of their profit margin
36. The margins for real estate business
- 1) in developed market is high
 - 2) in developed market is low
 - 3) is poor in general
 - 4) is good in general
 - 5) in Indian market is low
37. In construction projects
- 1) materials are not outsourced
 - 2) materials are outsourced
 - 3) materials should be outsourced
 - 4) materials should not be outsourced
 - 5) material handling is a problem
38. The company plans to avoid dependence on
- 1) contract works
 - 2) residential complexes
 - 3) contractual works for information technology companies
 - 4) real estate
 - 5) cities for business
39. In-house resources of builders
- 1) complicates their business
 - 2) improves profit margin
 - 3) creates problem with suppliers
 - 4) cost of material increases

- 5) does not guarantee timely completion
40. The company wants to acquire lands in other regions
- 1) because it wants to expand
 - 2) because it wants more profit
 - 3) because it is raising funds
 - 4) to avoid risk of regional slow down
 - 5) because of its business model

PART-III**MATHEMATICS**

41. The continued ratio of Rs. 200, Rs.400 and Rs.600 is
- 1) 2:4
 - 2) 4:6
 - 3) 6:2
 - 4) 2:4:6
 - 5) 4:6:2
42. What is the value of x if $10/3 : x : 5/2 : 5/4$
- 1) 2
 - 2) 8
 - 3) $5/3$
 - 4) $10/3$
 - 5) $5/4$
43. The value of $6ab^2c^3 * 4b^{-2}c^{-3}d$ is
- 1) 6a
 - 2) 4b
 - 3) 24ad
 - 4) 4d
 - 5) 0
44. Find the value of k if $(\sqrt{9})^{-7} * (\sqrt{3})^{-5} = 3^k$
- 1) 3
 - 2) $-12/2$
 - 3) $-19/2$
 - 4) 5
 - 5) 7
45. Find the logarithm of 5832 to the base $3\sqrt{2}$
- 1) 3
 - 2) 5
 - 3) 28
 - 4) 6
 - 5) 22
46. Find the value of y if $\{\frac{y+11}{6}\} - \{\frac{y+1}{9}\} = \{\frac{y+7}{4}\}$
- 1) 6
 - 2) $-1/7$
 - 3) $1/6$
 - 4) $3/4$
 - 5) 0
47. If the sum of two numbers is 52 and their difference is 2. The numbers are
- 1) 17 and 15
 - 2) 12 and 10
 - 3) 27 and 25
 - 4) 50 and 52
 - 5) 49 and 3
48. What are the values of x and y if $3x + 2y + 17 = 0$ and $5x - 6y - 9 = 0$
- 1) -3 and -4
 - 2) 5 and 6
 - 3) 3 and 2
 - 4) -3 and -5

- 5) -4 and -5
49. The equation of the straight line passing through the points (-5, 2) and (6, -4) is
- 1) $11x + 6y + 8 = 0$
 - 2) $x + y + 4 = 0$
 - 3) $6x + 11y + 8 = 0$
 - 4) $x + y + 20 = 0$
 - 5) $8x + 11y + 6 = 0$
50. In how many different ways a club with 10 members can select a President, Secretary and Treasurer if no member can hold two offices and each member is eligible for any office?
- 1) 520
 - 2) 720
 - 3) 2200
 - 4) 120
 - 5) 780
51. There are 7 men and 3 ladies. Find the number of ways in which a committee of 6 can be formed if the committee is to include at least two ladies?
- 1) 140
 - 2) 105
 - 3) 35
 - 4) 24
 - 5) 52
52. The 20th term of the progression 1, 4, 7, 10... is
- 1) 58
 - 2) 52
 - 3) 50
 - 4) 60
 - 5) 70
53. Evaluate $\lim_{x \rightarrow 2} \left\{ \frac{x^2 + 2x - 1}{\sqrt{x^2 + 2}} \right\}$
- 1) 21
 - 2) 14
 - 3) $7/\sqrt{6}$
 - 4) $7/3$
 - 5) $\sqrt{6}/7$
54. The correlation between shoe size and intelligence is
- 1) zero
 - 2) positive
 - 3) negative
 - 4) one
 - 5) none of the above
55. The sum of the deviations of the observations 15, 20, 25 from their arithmetic mean is
- 1) 0
 - 2) 5
 - 3) 10
 - 4) -5
 - 5) 20
56. In a business venture profit and loss are expected to be Rs. 50,000 and Rs. 20,000 respectively. From the past experience the

probability of earning profit is 0.75 and incurring loss is 0.25. What is the expected profit?

- 1) Rs. 50,000 2) Rs. 20,000
3) Rs. 32,500 4) Rs. 40,000
5) Rs. 30,000

57. The headlight of a motorcycle is a parabolic reflector of diameter 12 cm and depth 4 cm. What is the position of the bulb on the axis the reflector for the effective functioning of the headlight?

- 1) 3 cm 2) 4 cm
3) 2.25 cm 4) 5 cm
5) 1 cm

58. What is the area of the region bounded by

- 1) 2 sq. units 2) 4 sq. units
3) 2.5 sq. units 4) 5 sq. units
5) 3 sq. units

59. The total lifetime of 5 years old dog is a random variable with distribution function given by

$$F(x) = \begin{cases} 0, & \text{for } x \leq 5 \\ 1 - \frac{25}{x^2}, & \text{for } x > 5 \end{cases}$$

What is the probability that the dog will live anywhere between 12 to 15 years?

- 1) 0.05 2) 0.0625
3) 0.7 4) 0.01
5) 0.02

60. The radius of a sphere was measured and found to be 21 cm with a permissible error in measurement of at the most 0.05 cm. What is the maximum error in using this value of the radius to compute the volume of the sphere?

- 1) 100 cm^3 2) 277 cm^3
3) 300 cm^3 4) 714 cm^3
5) 350 cm^3

PART - IV

Instructions for answering:

The questions are followed by two statements labeled (1) and (2), in which certain data are given. You have to decide whether the data given in the statements are sufficient for answering the question. Using the data given in the problem plus

your knowledge of mathematics and everyday facts, choose the answer as:

- 1) If statement (1) ALONE is sufficient, but statement (2) alone is not sufficient
 - 2) If the statement (2) ALONE is sufficient, but statement (1) alone is not sufficient
 - 3) If both the statements (1) and (2) TOGETHER are sufficient, but NEITHER statement alone is sufficient
 - 4) If each statement ALONE is sufficient
 - 5) If statements (1) and (2) TOGETHER are not sufficient, and additional data is needed.
61. If only people who paid the deposits attended the Management Seminar, how many people attended this year?
- 1) 70 people sent in deposits to attend the Management Seminar this year.
 - 2) 60 per cent of the people who sent deposits to attend the Management Seminar this year actually went.
62. A car drives along a straight road from Sankarankoil to Coimbatore, going through Madurai along the way. What is the total distance traveled by the car from Sankarankoil to Coimbatore?
- 1) The distance from Sankarankoil to Madurai is $\frac{3}{5}$ of the entire distance.
 - 2) The distance from Madurai to Coimbatore is 12 km.
63. What is the value of x ?
- 1) $x^2 = 4$ 2) $x < 0$
64. What is the value of xy ?
- 1) $x^2 = 4$ 2) $y = 0$
65. Manju purchased 18 cans of soda, some of which contained diet soda. How many of the cans did not contain diet soda?
- 1) Of the cans Manju purchased; the number containing diet soda is equal to the number not containing diet soda.
 - 2) Of the cans Manju purchased, the number of cans containing diet soda is odd.
66. In 1988, was the number of people in city X greater than three times the number of people in city Y?

- 1) In 1998, there were approximately 1.1 million more people in the city X than in city Y.
- 2) In 1988, the 300,000 Hindus in city X made up to 20 per cent of its population and the 141,000 Buddhists in the city Y made up 30 per cent of its population.
67. If point X is directly north of point Y and directly west of point Z, what is the distance from point X to point Z?
- 1) The distance from Y to Z is 20 cm.
- 2) The distance from X to Y is equal to half the distance from Y to Z.
68. What is the value of the integer W?
- 1) W is a multiple of 3
- 2) $420 < W < 425$
69. What is the surface area of the rectangular solid y?
- 1) The dimensions of one face of the rectangular solid y are 2 by 3.
- 2) The area of another face of the rectangular solid y is 6.
70. What is the sum of x, y and z?
- 1) $2x + y + 3z = 45$
- 2) $x + 2y = 30$
71. Is rectangular block B a cube?
- 1) At least two faces of the rectangular block B are square.
- 2) The volume of rectangular block B is 64.
72. A foot race will be held on Saturday. How many different arrangement of medal winners are possible?
- 1) Medals will be given for 1st, 2nd and 3rd place.
- 2) There are 10 runners in the race
73. If the first term of the data set {x, y, z} is 3, what is the third term?
- 1) The range of this data set is 0.
- 2) The standard deviation of this data set is 0.
74. During a five-day period, Monday through Friday, the average (arithmetic mean) high temperature was 86 degrees Fahrenheit. What was the high temperature on Friday?
- 1) The average high temperature for Monday through Thursday was 87 degrees Fahrenheit.
- 2) The high temperature on Friday reduced the average high temperature for the week by 1 degree Fahrenheit.
75. If $a - b = c$, what is the value of b?
- 1) $c + 6 = a$ 2) $a = 6$
76. Square G has sides of length 4 cm. Is the area of Square H exactly one-half the area of Square G?
- 1) The length of the diagonal of Square H equals the length of one side of Square G.
- 2) The perimeter of Square H is twice the length of the diagonal of Square G.
77. Paul jogs at a constant rate for 80 minutes along the same route everyday. How long is his route?
- 1) Yesterday, Paul began jogging at 5.00 p.m.
- 2) Yesterday, Paul had jogged 5 km by 5.40 p.m. and 8 km by 6.04 p.m.
78. What is the value of the integer x?
- 1) $\sqrt[3]{64}$ 2) $x^2 = 2x + 8$
79. Automobile A is traveling at $\frac{2}{3}$ rd of the speed that Automobile B is traveling. How fast is Automobile A traveling?
- 1) If both automobiles increased their speed by 10 km per hour, Automobile A would be traveling at $\frac{3}{4}$ th the speed of Automobile B would be traveling .
- 2) If both Automobiles decreased their speed by 10 km per hour, Automobile A would be traveling at $\frac{1}{2}$ the speed that Automobile B would be traveling.
80. If t is a multiple of prime number 's', is 't' a multiple of s^2 ?
- 1) $s < 4$ 2) $t = 18$

PART- V**Instructions for Answering:**

In each of the following sentences, four parts have been underlined. Only one underlined part in each sentence is not acceptable in Standard English. Pick up that part and answer as (1) or (2) or (3) or (4). If there is no mistake mark (5) as the answer.

81. Taking credit $\frac{\text{for the arrest of}}{(1)}$ senior IPS $\frac{\text{officers}}{(2)}$ it said that in independent $\frac{\text{India}}{(3)}$ no State Government had $\frac{\text{arrested}}{(4)}$ senior IPS officers. $\frac{\text{No error.}}{(5)}$
82. He $\frac{\text{commended}}{(1)}$ and thanked the international community for their $\frac{\text{initiative}}{(2)}$ to curb the $\frac{\text{ABCD}}{(3)}$ international $\frac{\text{illegal}}{(4)}$ activities. $\frac{\text{No error.}}{(5)}$
83. The $\frac{\text{newsprint}}{(1)}$ media $\frac{\text{industry size}}{(2)}$ in India is $\frac{\text{estimated}}{(3)}$ to be around $\frac{\text{Rs.12.100 crores.}}{(4)}$ $\frac{\text{No error.}}{(5)}$
84. The transgendered $\frac{\text{Participants}}{(1)}$ were judged upon the criteria of $\frac{\text{their behaviour}}{(2)}$ $\frac{\text{on stage}}{(3)}$ articulation of views and service to the $\frac{\text{transgendered community.}}{(4)}$ $\frac{\text{No error.}}{(5)}$
85. Sleuths of $\frac{\text{the 'Q' Branch}}{(1)}$ on $\frac{\text{Monday}}{(2)}$ recovered a rocket shell from the $\frac{\text{Ant honiyar}}{(3)}$ shore at $\frac{\text{Rameswaran.}}{(4)}$ $\frac{\text{No error.}}{(5)}$
86. The $\frac{\text{figure marked increase}}{(1)}$ of about $\frac{21,000}{(2)}$ over the number of $\frac{\text{students}}{(3)}$ who sat for the test $\frac{\text{last year.}}{(4)}$ $\frac{\text{No error.}}{(5)}$
87. The fifth meeting of the $\frac{\text{India-United states}}{(1)}$ Global $\frac{\text{Issues}}{(2)}$ Forum got $\frac{\text{underway here}}{(3)}$ with the formal $\frac{\text{start of the talk}}{(4)}$ between Mr. Menon and Mr. Paula Doriansky. $\frac{\text{No error.}}{(5)}$
88. $\frac{\text{Mr. Raman execu tive}}{(5)}$ said the $\frac{\text{steps}}{(2)}$ initiated by the $\frac{\text{Government}}{(3)}$ to control $\frac{\text{prices}}{(4)}$ were inadequate. $\frac{\text{No error.}}{(5)}$
89. As Mr. Akavoor Narayanan $\frac{\text{mentions}}{(1)}$ in his foreword, this book $\frac{\text{ably brings out}}{(2)}$ $\frac{\text{glamour and grammar}}{(3)}$ of $\frac{\text{Kathakali.}}{(4)}$ $\frac{\text{No error.}}{(5)}$
90. The images of ants are literally larger than $\frac{\text{life despite}}{(1)}$ the detail, perhaps because of the detail, they convey an $\frac{\text{impres sion}}{(2)}$ that they are $\frac{\text{somew hat}}{(3)}$ different from that of the $\frac{\text{living animal.}}{(4)}$ $\frac{\text{No error.}}{(5)}$
91. These papers contain exhaustive details of (1) (2) Enquiry No. 66/2006 carried out by (3) inspector of police V.L. Solanki. No error. (4) (5)
92. He recalled that their previous tenure, the (1) firm had allotted fund to build bridges in (2) (3) different parts of the city. No error. (4) (5)
93. The petitioners, however, informed court (1) (2) that the case was a result of a blatant abuse (3) (4) of process of law. No error. (5)
94. Why study Biotechnology at all, if one is (1) (2) going to turn to codes later. No error. (3) (4) (5)
95. But the body was not removed till 9.30 A.M. (1) (2) (3) resulting in a huge crowd gathering at the site. (4) No error. (5)
96. Members of various political parties came (1) together in Gummlidipoondl on Saturday to (2) (3) protest the construction of a hazardous waste landfill in the area. No error. (4) (5)

97. The health camp will be held at Sree
(1) (2)
Ananda Valli Kalyana Mandapam, 40/112
G.N. Chetty Road, T. Nagar. No error
(3) (4) (5)
98. “Everybody talks about the weather
but
(1) (2)
nobody does anything about it . No error.
(3) (4) (5)
99. To create an enabling , atmosphere.
the
(1) (2)

- agriculture produce market committee act
(3)
was amended. No error.
(4) (5)
100. This should be realized by
all concerned,
(1)
including those still believed that the
(2)
gun could force a resolution of the
(3)
Kashmir problem. No error.
(5)

MBA 2014 – ANSWER KEY

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

MBA 2014- DETAILED ANSWER

PART - III
MATHEMATICS

41. (4)
Continued ratio = 200: 400: 600
= 1:2:3

42. (3)
 $\frac{10}{3} : x :: \frac{5}{2} : \frac{5}{4}$
Using cross product rule
 $\frac{10}{3} \times \frac{5}{4} = x \times \frac{5}{2}$
 $x = \frac{\frac{10 \times 5}{3 \times 4}}{\frac{5}{2}} = \frac{10}{3} \times \frac{5}{4} \times \frac{2}{5}$
 $x = \frac{5}{3}$

43. (3)
 $6ab^2c^3 * 4b^{-2}c^{-3}d$
 $= 6ab^2c^3 \times \frac{4d}{b^2 \times c^3} = 24ad$

44. (3)
 $(\sqrt{9})^{-7} * (\sqrt{3})^{-5} = 3^k$
 $3^{-7} \times 3^{\frac{-5}{2}} = 3^k$
 $3^{-7} \times 3^{-\frac{5}{2}} = 3^{\frac{-14-5}{2}} = 3^{\frac{-19}{2}}$
 $\Rightarrow k = \frac{-19}{2}$

45. (4)
 $x = \log_{3\sqrt{2}} 5832$
 $\Rightarrow 3\sqrt{2}^x = 5832 = 8 \times 729$
 $= 2^3 \times 9^3 = 2^3 \times 3^6$
 $= (\sqrt{2})^6 \times 3^6 = (3\sqrt{2})^6$
 $\therefore x = 6$

46. (2)
 $\left(\frac{y+11}{6}\right) - \left(\frac{y+1}{9}\right) = \left(\frac{y+7}{4}\right)$
 $\left(\frac{y+11}{6}\right) - \left(\frac{y+1}{9}\right) = \left(\frac{y+7}{4}\right) = 0$
 $\frac{6(y+11) - 4(y+1) - 9(y+7)}{36} = 0$
 $6y + 66 - 4y - 4 - 9y - 63 = 0$
 $\Rightarrow -7y - 1 = 0$
 $\therefore y = \frac{-1}{7}$

47. (3)
Let the numbers be x and y

and $x > y$
then $x + y = 52$... (1)

$x - y = 2$... (2)

Subtracting (1) - (2) \Rightarrow

$2y = 50$

$y = \frac{50}{2} = 25$

(1) $\Rightarrow x + 25 = 52$..

$\therefore x = 52 - 25$

$= 27$

\therefore Required numbers $x=27; y=25$

48. (1)
 $3x + 2y = -17$... (1)

$5x - 6y = 9$... (2)

(1) $\times 3 \Rightarrow 9x + 6y = -51$... (3)

(3) + (2) $\Rightarrow 14x = -42$

$\therefore x = \frac{-42}{14} = -3$

(1) $\Rightarrow 3x + 2y = -17$

$3(-3) + 2y = -17$

$-9 + 2y = -17$

$2y = -17 + 9 = -8$

$\therefore y = \frac{-8}{2} = -4$

Required values $x=-3; y=-4$

49. (3)
Equation of a straight line passing through the points (x_1, y_1) and (x_2, y_2) is

$(y - y_1) = \left(\frac{y_2 - y_1}{x_2 - x_1}\right)(x - x_1)$

Take $(x_1, y_1) = (-5, 2)$

$(x_2, y_2) = (6, -4)$

Equation of the straight line is

$(y - 2) = \left(\frac{-4 - 2}{6 + 5}\right)(x + 5)$

$y - 2 = \frac{-6}{11}(x + 5)$

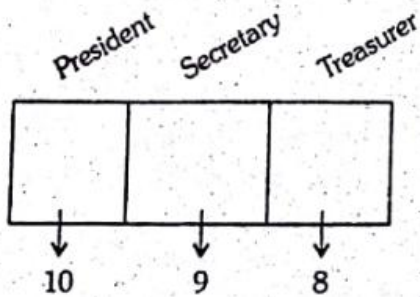
$11(y - 2) = -6(x + 5)$

$11y - 22 = -6x - 30$

$\Rightarrow 6x + 11y - 22 + 30 = 0$

$6x + 11y + 8 = 0$

50. (2)



Required number of ways = $10 \times 9 \times 8 = 720$

51. (1)

The committee can be formed in 2 ways

i) Selecting 2 ladies and 4 men

ii) Selecting 3 ladies and 3 men

Number of ways of selecting 2 ladies and

4 men = ${}^3C_2 \times {}^7C_4$

$$= 3 \times \frac{7 \times 6 \times 5 \times 4}{1 \times 2 \times 3 \times 4}$$

$$= 3 \times 35 = 105$$

Number of ways of selecting 3 ladies and 3 men

$$= {}^3C_3 \times {}^7C_3$$

$$= 1 \times \frac{7 \times 6 \times 5}{1 \times 2 \times 3} = 35$$

\therefore Required total number of ways

$$= 105 + 35 = 140 \text{ ways}$$

52. (1)

The sequence 1, 4, 7, 10, is in A.P.

$$a_1 = 1; d = 4 - 1 = 3; n = 20$$

$$n^{\text{th}} \text{ term} = a_n = a_1 + (n-1)d$$

$$20^{\text{th}} \text{ term} = a_{20} = a + (20-1)d$$

$$= 1 + 19 \times 3 = 1 + 57 = 58$$

53. (3)

$$\lim_{x \rightarrow 2} \frac{x^2 + 2x - 1}{\sqrt{x^2 + 2}}$$

$$= \frac{(2)^2 + 2(2) - 1}{\sqrt{(2)^2 + 2}}$$

$$= \frac{4 + 4 - 1}{\sqrt{4 + 2}} = \frac{7}{\sqrt{6}}$$

54. (1)

There is no relationship between the two variable. So the correlation is zero.

55. (1)

The sum of the deviations from the mean is always zero.

56. (3)

$$P_1 = 0.75; p_2 = 0.25$$

$$x_1 = 50,000; x_2 = -20,000$$

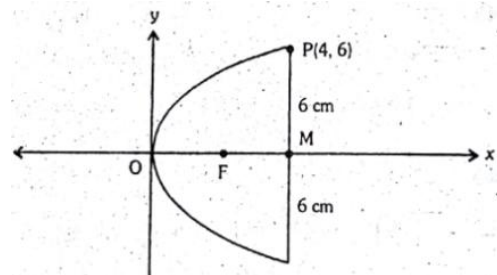
$$\text{Expected profit} = E(x)$$

$$= P_1 x_1 + p_2 x_2$$

$$0.75 \times 50,000 + 0.25 \times (-20,000)$$

$$= 37,500 - 5,000 = \text{Rs. } 32,500$$

57. (3)



Equation of the parabola $y^2 = 4ax$

OM = Depth of the reflector

$$= 4 \text{ cm}$$

$$MP = 6 \text{ cm}$$

coordinates of P = (4, 6)

P lies on the parabola $y^2 = 4ax$

$$\Rightarrow 6^2 = 4 \times a \times 4$$

$$36 = 16a$$

$$a = \frac{36}{16} = 2.25$$

Coordinates of the focus F = (a, 0)

$$= (2.25, 0)$$

The bush must be placed in the focus F.

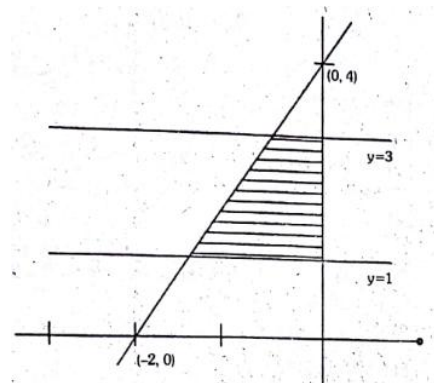
Required distance = OF = a = 2.25 cm

58. (1)

Consider the line $y = 2x + 4$

$$x - 0 \Rightarrow y = 4$$

$$y = 0 \Rightarrow 2x + 4 = 0 \Rightarrow x = -2$$



$$\text{Required area } A = \int_1^3 (-f(y)) dy = \int_1^3 (-x) dy$$

$$\begin{aligned}
 &= \int_1^3 -\left(\frac{y-4}{2}\right) dy \\
 &= \frac{1}{2} \int_1^3 (4-y) dy \\
 &= \frac{1}{2} \left[4y - \frac{y^2}{2} \right]_1^3 \\
 &= \frac{1}{2} \left[\left(4 \times 3 - \frac{3^2}{2} \right) - \left(4 - \frac{1}{2} \right) \right] \\
 &= \frac{1}{2} \left[12 - \frac{9}{2} - 4 + \frac{1}{2} \right] \\
 &= \frac{1}{2} \left[(12-4) \frac{9}{2} + \frac{1}{2} \right] \\
 &= \frac{1}{2} \left[8 - \frac{8}{2} \right] = \frac{1}{2} (8-4) = \frac{4}{2} = 2
 \end{aligned}$$

59. (2)

$$\begin{aligned}
 p(12 < x < 15) &= F(15) - F(12) \\
 &= \left(1 - \frac{25}{15^2} \right) - \left(1 - \frac{25}{12^2} \right) \\
 &= 1 - \frac{25}{225} - 1 + \frac{25}{144} \\
 &= \frac{25}{144} - \frac{25}{225} = 25 \left[\frac{1}{144} - \frac{1}{225} \right] \\
 &= 25 \left[\frac{25-16}{3600} \right] \\
 &= 25 \times \frac{9}{3600} = \frac{9}{144} \\
 &= 0.0625
 \end{aligned}$$

60. (2)

Volume of the sphere

$$V = \frac{4}{3} \pi r^3$$

Error in the measure value of r is denoted by

$$dr = \Delta r$$

Error in the volume is

$$dv = \Delta v$$

Now $\frac{dv}{dr} = \frac{4}{3} \pi \cdot 3r^2$

$$dv = 4\pi r^2 dr$$

$r = 21$; $dr = 0.05$

$$dv = 4 \times \frac{22}{7} \times 21 \times 21 \times 0.05$$

$$= 277.2 \approx 277$$

Required maximum error in the volume of the sphere = 277

PART - IV

61. (3)

Statement (1): Gives the number of persons who paid the deposit. But it does

not say whether they attended or not. So statement is not sufficient.

Statement (2): Says that 60% of the people who set the deposits actually attended. But it does not say anything about the number of persons actually attended.

From both statements

Number of people sent deposit = 70

Number of people attended the seminar

= 60% of 70

$$= \frac{60}{100} \times 70 = 42$$

62. (3)

Let the distance from Sankarankoil to Coimbatore be x km.

From statement (1)

Distance from Sankarankoil to madurai =

$$\frac{3x}{5}$$

From statement (2)

istance from Madurai to Coimbatore = 12 km.

Total distance

$$x = \frac{3x}{5} + 12$$

$$x - \frac{3x}{5} = 12$$

$$\frac{5x-3x}{5} = 12$$

$$\frac{2x}{5} = 12$$

$$x = \frac{12 \times 5}{2} = 30 \text{ km}$$

So statements (1) and (2) are required.

63. (3)

From statement (1)

$$x^2 = 4$$

$$x = \pm 2$$

i.e. $x = 2$ (or) $x = -2$

x has two values.

So statement (1) alone is not sufficient.

From statement (2) $x < 0$

Statement (2) does not give exact value of x Therefore (2) alone is not sufficient.

From (1) and (2)

$$x = 2 \quad (\text{or}) \quad x = -2$$

and $x < 0$

$\Rightarrow x = -2$ is the required answer

Hence statements (1) and (2) together are sufficient, but neither statement alone is sufficient.

64. (2)

Statement (1) alone is not sufficient.

From statement (2)

$$y = 0$$

$$\text{Therefore } xy = x \times 0$$

$$= 0$$

\therefore Statement (2) alone is sufficient.

65. (1)

Number of soda cans. = 18

From statement (1)

Let the number of diet soda cans = x

Then number of cans not containing diet soda = x

$$\text{Now } x + x = 18$$

$$2x = 18$$

$$\therefore x = \frac{18}{2} = 9$$

Statement (1) alone is sufficient

Statement (2) alone is not sufficient

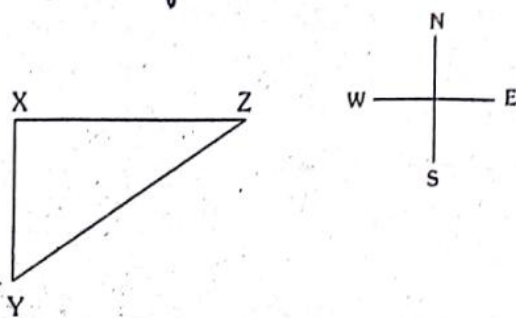
66. (5)

Statement (1) gives approximate values. It is not sufficient.

Statement (2) gives the upper bounds. It is not sufficient.

We required more data to solve the problem.

67. (4)



N

From statement (1) distance from Y to Z is 20 cm But this is not sufficient.

Statement (2) alone is not sufficient.

From both (1) and (2)

$$YZ = 20$$

$$XY = \frac{1}{2} YZ$$

$$= \frac{20}{2} = 10$$

From right angle triangle XYZ

$$YZ^2 = XY^2 + XZ^2$$

$$20^2 = 10^2 + XZ^2$$

\therefore Statements both (1) and (2) are required.

68. (3)

From statements (1) and (2) W is a multiple of 3

$$420 < W < 425$$

The only number between 420 and 425 and multiple of 3 is 423

$$\therefore \text{Required } W = 423$$

\therefore Statements (1) and (2) together are sufficient.

69. (5)

Statements (1) and (2) are not sufficient.

70. (3)

From both (1) and (2)

$$2x + y + 3z = 45$$

$$x + 2y = 30$$

Adding

$$3x + 3y + 3z = 45$$

$$3(x + y + z) = 45$$

$$\therefore x + y + z = \frac{45}{3} = 15$$

71. (5)

Let l = length

b = breadth

h = height

From (1) and (2)

(l, b, h) may be (1, 1, 64)

(or) (2, 2, 16) (or) (4, 4, 4)

72. (3)

From both (1) and (2)

$${}^{10}C_3 = \frac{10 \times 9 \times 8}{1 \times 2 \times 3} = 120$$

73. (4)

Consider statement (1)

range = 0 implies all data are same.

First term = 3

Third term = 3

∴ (1) alone is sufficient.

Consider statement (2)

Standard deviation = 0

⇒ All data are equal

∴ First term = 3

implies third term = 3

∴ Statement (2) alone is sufficient.

74. (4)

Average high temperature for five days = 86

Total high temperature for five days = $86 \times 5 = 430$

From statement (1)

Average high temperature from Monday to Thursday = 87°F

∴ Total temperature from Monday to Thursday

$= 4 \times 87 = 348$

∴ High temperature for

Friday = $430 - 348$

$= 82^\circ$

∴ Statement (1) alone is sufficient.

From statement (2)

Friday temperature reduced the average high temperature for the five days by 1 degree.

∴ For Monday to Thursday average high temperature = 87

From Monday to Thursday

Total temperature = $4 \times 87 = 348$

∴ High temperature on Friday

$= 430 - 348 = 82^\circ$

∴ Statement (2) alone is sufficient.

75. (1)

$a - b = c$... (i)

From statement (1)

$c + 6 = a$... (ii)

Substitute the value of a in eqn. (I)

$c + 6 - b = c$

⇒ $b = 6$

∴ (1) alone is sufficient.

From statement (2)

$a = 6$

∴ (1) ⇒ $6 - b = c$

$b = 6 - c$

The value of c is not given

Therefore it is not possible to find the value of. Therefore statement (2) alone is not sufficient.

76. (4)

Area of the square G = $4 \times 4 = 16 \text{ cm}^2$

From statement (1)

Diagonal of square H = 4 cm

Therefore length of the side of H

$= \frac{\text{diagonal}}{2} = \frac{4}{\sqrt{2}} = 2\sqrt{2}$

Area of H = $(2\sqrt{2})^2 = 8 \text{ cm}^2$

$= \frac{1}{2} \times \text{Area of square G} = 4\sqrt{2}$

(1) alone is sufficient.

From statement (2)

Diagonal of G = $4\sqrt{2}$

Perimeter of the square H = $8\sqrt{2}$

Length of side of H = $\frac{8\sqrt{2}}{4} = 2\sqrt{2} \text{ cm}$

Area of H = $(2\sqrt{2})^2 = 8 \text{ cm}^2$

$= \frac{1}{2} \times \text{Area of G}$

∴ Statement (2) alone is sufficient.

77. (2)

Statement (1) gives only the start time but the distance travelled is not given

Therefore statement (1) alone is not sufficient.

Consider Statement (2)

5 km covered by 5.40 pm

8 km covered by 6.04 pm

⇒ 3 km is covered in 24 min.

∴ 1 km is covered in $\frac{24}{3} = 8 \text{ min.}$

In 80 minutes Paul joggings 10 km.

∴ Statement (2) alone is sufficient.

78. (5)

Statement (1) alone is not sufficient.

statement (2)

$$x^2 - x - 8 = 0$$

$$x = \frac{2 \pm \sqrt{4+32}}{2}$$

$$= \frac{2 \pm \sqrt{36}}{2} = \frac{2 \pm 6}{2}$$

$$x = \frac{2+6}{2} = 4$$

$$x = \frac{2-6}{2} = -2$$

x has two values. Therefore statement (2) alone is not sufficient.

79. (4)

$$A = \frac{2}{3}B; B = \frac{3}{2}A$$

From statement (1)

$$(A+10) = \left(\frac{3}{4}\right)(B+10)$$

$$A+10 = \frac{3}{4}\left(\frac{3}{2}A + 10\right)$$

$$4A+40 = \frac{9A}{2}+30$$

$$8A+80 = 9A+60 \Rightarrow A = 20$$

Therefore statement (1) alone is sufficient.

Consider statement (2)

$$(A-10) = \frac{1}{2}(B-10)$$

$$= \frac{1}{2}\left(\frac{3}{2}A - 10\right)$$

$$2A-20 = \frac{3A}{2}-10 = \frac{3A-20}{2}$$

$$4A-40 = 3A-20$$

$$A = 20$$

\therefore Statement (2) alone is sufficient.

80. (3)

From statement (1)

$$S < 4 \Rightarrow S = 2 \text{ (or) } 3$$

\therefore (1) alone is not sufficient.

Statement (2) alone is not sufficient.

From statement (1) and (2)

$$\text{if } s = 3$$

$$t = 18$$

$$\text{then } 18 = 2 \times 3^2$$

$$t = 2 \times s^2$$

\therefore t is a Multiple of s^2

Both (1) and (2) together are sufficient.

PART - V

81. (5)

No Error

82. (2)

community for its initiative

83. (4)

Rs. 12,100 crore

84. (4)

articulation of views, service to the transgendered community.

85. (5)

No Error

86. (1)

The figure marked an increase

87. (4)

start of the talks

88. (1)

Mr. Raman an executive

89. (2)

amply bring out

90. (1)

The images of ants are literally larger than life; despite the detail.

91. (5)

No Error

92. (1)

that in its previous tenure

93. (2)

informed the court that the case

94. (4)

to codes later?

95. (5)

No Error.

96. (2)

came together at Gummidipoondi

97. (5)

No Error

98. (2)

about the weather. But nobody

99. (5)

No error.

100. (2)

including those who believed.