

MBA 2013 – EXAMINATION PAPER**PART -1****Directions :**

The statements that follow relate to the preceding passage. Evaluate the statement and select your answer from one of the following classifications and blacken the corresponding space on the answer sheet.

1. A MAJOR OBJECTIVE : A statement that reflects one of the goals in the situation detailed in the passage.
2. A MAJOR ACTOR: An aspect of the situation, specifically mentioned in the passage that fundamentally affects and/or determines the goals.
3. A MAJOR ASSUMPTION : A projection or supposition in the passage to arrive at the goal.
5. UNIMPORTANT : An aspect of the passage not so important to the goals.

PASSAGE 1

More Western firms are filling their executive positions with locals. Foreigners with no Asian experience need not apply. Forget expats. Western companies doing business in Asia are now looking to locals to fill the most important jobs in the region.

Behind the swiftness, experts say, are several factors, including a leveled playing field in which Western companies must approach newly empowered Asian companies and consumers as equals and clients – not just manufacturing partners.

Companies now want executives who can secure deals with local businesses and governments without the aid of a translator, and who understand that sitting through a three-hour dinner banquet is often a key part of the negotiating process in Asia, experts say.

In fact, three out of four senior executives hired in Asia by multinationals were Asians natives already living the region, according to a September Stuart analysis of 1,500 placements made from 2005 to 2010. Just 6% were noncitizens from outside of Asia.

“It’s a strategic necessity to be integrated in the culture. Otherwise, the time to learn all of it takes forever,” said Arie Y. Lewin, a professor of strategy and international business at Duke University’s Fuqua School of Business. He adds that locals may better navigate a business culture where copycats and competitors often play by different rules.

What’s more, a failed expatriate hire can be a costly mistake and slow a firm’s progress in the region, said Phil Johnston, a managing director at recruiter Spencer Stuart.

To help companies fill Asia-based executive roles, at least two search firms—Spencer Stuart and Korn/Ferry International—say they have begun classifying executives in four categories: Asia natives steeped in local culture but educated in the U.S. or Europe; the foreigner who has lived or worked in Asia for a long time; a person of Asian descent who was born or raised in a Western country but has had little exposure to Asia; and the local Asian executive who has no Western experience.

For companies seeking local expertise, both firms said the first category is by far the most sought-after. But Mr. Johnston said those candidates are difficult to find and retain, and they can command salaries of \$750,000 to \$1 million on par with, and sometimes more than, their expat counterparts.

German conglomerate Siemens AG in 2010 hired Mei-Wei Cheng, a China-born Cornell University graduate, to head its Chinese operations a role previously held by European executives.

While Siemens’s European executives had made inroads with Chinese consumers—building sales in the region to nearly one-tenth of global revenue—the firm realized that it needed someone who could quickly tap local business partners.

After an extensive search, Siemens hired Mr. Cheng, formerly CEO at the Chinese subsidiaries of Ford Motor Co. and General Electric Co.

The decision to hire locally seems to have paid off for Siemens: In his first 18 months on the job, Mr. Cheng forged two wind-power joint ventures with Shanghai Electric Group Co.

Mr. Cheng communicates easily with local officials, a major advantage when it comes to selling energy technology to individual cities, says Brigitte Ederer, head of human resources for Siemens and a member of the company’s managing board. Many local officials don’t speak English.

Bob Damon, president of recruiter Korn/Ferry International’s North American operations, said the current talent pool for executive roles is so limited that

most top Asian executives simply rotate from one Western company to another, as Mr. Cheng did.

Other companies are adding to the demand by creating new positions in Asia.

Campbell Soup Co. last week announced the appointment of Daniel Saw as its first-ever president of Asia operations, while Canadian conglomerate Bombardier Inc. hired Albert Li to fill a new role overseeing its aerospace business in China. Both executives were born in Asia and have worked as regional managers for Western multinationals.

Meanwhile, younger Chinese professionals are positioning themselves to meet the need for executive talent in the years to come. Nearly four in 10 American M.B.A. programs say China was their fastest-growing source of foreign applicants last year, according to the Graduate Management Admission Council, which administers the Graduate Management Admission Test.

Foreigners with no Asia experience, on the other hand, need not apply, recruiters said. Spencer Stuart's Mr. Johnston said he occasionally receives inquiries from Western middle managers, proclaiming that they are finally ready to make a career move to the region. He advises them that "there is nothing about their experience that is interesting or relevant to Asia."

In hubs like Singapore and Hong Kong, expats receive as much as \$200,000 a year in subsidies for housing, transportation and private schooling. Mr. Johnston said Payments to offset taxes for these benefits add up to another \$100,000. Altogether, a bad match can cost a company as much as \$1 million, after figuring in relocation costs, he said.

Monster Worldwide Inc. Chief Executive Sal Iannuzzi said the company has been hiring locally for several years, in part because he found deploying expatriates cost too much. "It takes them six months to figure out how to take a ferry, they're there for 12 months, and then they spend the next six months figuring out how to get home," he said.

Like some other companies, Monster now tracks its own workers to ensure a pipeline of talent.

The online job-search company's current head of China operations, Edward Lo, a former fraternity brother of Mr. Iannuzzi, understands the local scene,

is well connected in China and knows how to recruit, Mr. Iannuzzi said.

Among Mr. Lo's duties: finding his own successor before he retires.

Starwood Hotels & Resorts Worldwide Inc., based in White Plains, N.Y., also develops its own leaders for Asia, plucking people who have come up through the company ranks. For example, the head of Asia Pacific started in the 1970s, on the finance team in Hong Kong, and the head of the Middle East region was a hotel manager who worked his way up. Having grown up in their markets, managers understand customer needs, said Starwood CEO Frits van Paasschen. Regional heads in China, for instance, know that when dealing with land owners or developers, deals are less "transactional," and more "trust-based," he said. They also know that Chinese travelers – who now comprise the majority of hotel guests in the region – feel more at home when they're supplied with tea kettles, slippers and chopsticks, he added.

For fast-food company Yum Brands Inc., CEO David Novak calls his Asia-bred regional head and executive team "our single biggest competitive advantage." China has become the company's biggest earnings driver, comprising more than 40% of operating profit.

Thanks to Yum's China leaders, Mr. Novak says, KFC in China began serving rice porridge and soy milk for breakfast, and Pizza Hut now offers an afternoon tea menu – both of which have been big hits among local customers.

Questions :

1. Western companies must approach newly empowered Asian companies as equals.
2. Executives positions of Western firms to be filled with locals.
3. Asian executives can secure deals with local business and governments.
4. Foreigners with no Asian experience are not required.
5. Recruitment of Asian executives is a strategic necessity.
6. Locals may better navigate a business culture.
7. Asian natives steeped in local culture but educated in the U.S. or Europe are most sought after.

8. Local could quickly tap local business partners.
9. Many local officials don't speak English.
10. Most top Asian executives simply rotate from one Western company to another.
11. Campbell Soup Co. last week announced the appointment of Daniel Saw as its first-ever president of Asian operations.
12. China was the fastest growing source of foreign applicants for the top 10 American M.B.A. programs.
13. Foreigners with no Asia experience, on the other hand, need not apply.
14. Mr. Johnson advises that "there is nothing about their experience that is interesting or relevant to Asia."
15. Employing expatriated cost too much.
16. Canadian Conglomerate Bombardier Inc. hired Albert Li to fill a new role overseeing its aerospace business in China.
17. Having grown up in their markets, managers understand customer needs.
18. Business dealings by natives are less 'transactional' and more 'trust-based'
19. Hiring Asia-bred regional leads is the single biggest competitive advantage.
20. China has become the biggest earnings driver for Yum Brand Inc.

PASSAGE 2

The Bengal tiger economy is still roaring, even if the acceleration of recent years may be difficult to sustain. While other emerging markets are seeing a slowdown in earnings growth, the home market offers India an element of economic immunity.

"The major factor driving growth in India is the increase in the working population", says Dalip Pun, Global Head of Indian Business Strategy, HSBC. That rapidly growing middle class will produce a quarter of the world's new workers over the next three years.

Even so, several delegates perceived a skills gap, with a willing workforce unmatched by enough professional workers to meet burgeoning demand. Even intellectually fertile India can't produce enough talent. That's high value opening for European Industry, if it's prepared to face the challenge.³

The UN estimates that, unlike declining Europe, India's workforce will increase by 135 million by 2020, to around 600 million. In contrast, Germany will have lost 30% of its workforce by 2050. While other countries, notable China, will face the legacy of their population control policy within a generation, India will be foremost among those facing the issues of population growth allowed to run its natural course.

The stark cultural difference may be the root of Indian suspicion over China. "Suffering a complex", was a trait frequently noted by delegates. Again, businesses already on the ground suggest India is not homogenous. "Our office in Mumbai is run by an Indian manager," said one confident French manufacturer, while a textiles corporate was disappointed with suppliers who provided excellent samples which were subsequently let down by production run quality.

Average income remains pitifully low, but high earners are growing in number exponentially, as are the very rich. It is predicted that there will be 400,000 or more domestic millionaires by 2015. That immense body of consumers, seeking higher quality goods and experiences, has persuaded many commentators that India will soon show faster growth than even China.

While India has no one dominant trading partner, new corridors and partnerships in commodities and manufacturing are opening with the Middle East, Latin, America and Asia.

It is essentially a growing economy which is internally driven, and that presents opportunities for European businesses, as Eichard Herald, the chief executive of the UK India Business Council points out. "The greatest legacy that Europe can give into India is its intellectual property. India respects intellectual property. It has introduced legislation that is of international standard."

That's hardly suprising, given India's penchant for regulations, and also the nation's rather more laudable willingness to learn and obsession with education. In business terms, there are incentives to encourage foreign investment.

"The Indian government has consciously tried to get in foreign direct investment in sectors that they want investment", says Dalip Pun. "They have now opened up the sectors where foreign companies can go and

invest and they have reduced red tape. They have set up special economic zones where they give special tax incentives to foreign companies.” There are incentives too for 4 consumers, with India’s overall tax burden among the lowest in the world.

Given the huge internal market, an element of inflation has been inevitable, and that has impacted on India’s still enviable growth forecasts. Nothing however has put a brake on the country’s capital works programme. Tax revenues are still high enough to allow the Indian government to embark on ambitious projects. One delegate noted that Europe exports \$5bn worth of construction products annually, and there are wider opportunities in this sector. Infrastructure from telecoms to transport, water pipes to basic electrical supply is in need of upgrading, or simply installing.

Richard Heald concluded that India had been seen as a trading post, somewhere to view from a cost-arbitrage perspective, as he puts it, but that is changing. “It’s more complex than that. In certain sectors, the cost savings will reduce, but the value-add increases.”

While many enjoy the harvest of the India’s wealth generation, there are many more yet to taste the fruits of her economic monsoon.

Questions :

21. The difficulty to sustain the acceleration of the economy.
22. The rapidly growing middle class in the Indian economy.
23. China will face the legacy of their population control policy within a generation.
24. India’s workforce will increase by 135 million by 2020.
25. High earners are growing in number exponentially.
26. The legacy that Europe can give to India is its intellectual property.
27. India introduced legislation that is of international standard.
28. India has no one dominant trading partner.
29. A perceived skill gap among the Indian workforce.
30. India is opened up to Middle East, Latin America and Asia.

PART – II
PASSAGE 1

Questions (31-35):

Conflict had existed between Spain and England since the 1570s. England wanted a share of the wealth that Spain had been taking from the lands it had claimed in the Americas.

Elizabeth I, Queen of England, encouraged her staunch admiral of the navy, Sir Francis Drake, to raid Spanish ships and towns. Though these raids were on a small scale, Drake achieved dramatic success, adding gold and silver to England’s treasury and diminishing Spain’s omnipotence.

Religious differences also caused conflict between the two countries. Whereas Spain was Roman Catholic, most of England had become Protestant. King Philip II of Spain wanted to claim the throne and make England a Catholic country again. To satisfy his ambition and also to retaliate against England’s theft of his gold and silver, King Philip began to build his fleet of warships, the Armada, in January 1586.

Philip intended his fleet to be indestructible. In addition to building new warships, he marshaled one hundred and thirty sailing vessels of all types and recruited more than nineteen thousand robust soldiers and eight thousand sailors. Although some of his ships lacked guns and others lacked ammunition, Philip was convinced that his Armada could withstand any battle with England.

The martial Armada set sail from Lisbon, Portugal, on May 9, 1588, but weather forced it back to port. The voyage resumed on July 22 after the weather became more stable.

The Spanish fleet met the smaller, faster, and more manoeuvrable English ships in battle off the coast of Plymouth, England, first on July 31 and again on August 2. The two battles left Spain vulnerable, having lost several ships and with its ammunition depleted. On August 7, while the Armada lay at anchor on the French side of the Strait of Dover, England sent eight burning ships into the midst of the Spanish fleet to set it on fire. Blocked on one side, the Spanish ships could only drift away, their crews in panic and disorder. Before the Armada could regroup, the English attacked again on Aug 8.

Although the Spaniards made a valiant effort to fight back, the fleet suffered extensive damage. During the eight hours of battle, the Armada drifted perilously

close to the rocky coastline. At the moment when it seemed that the Spanish ships would be driven onto the English shore, the wind shifted, and the Armada drifted out into the North Sea. The Spaniards recognized the superiority of the English fleet and returned home, defeated.

31. **Sir Francis Drake added wealth to the treasury and diminished Spain's**
 1) Unlimited power
 2) unrestricted growth
 3) territory
 4) treaties
 5) answer not available in article.
32. **Philip recruited many soldiers and sailors.**
 1) warlike
 2) strong
 3) accomplished
 4) timid
 5) not experienced
33. **The Armada set sail on May 9, 1588.**
 1) complete
 2) warlike
 3) independent
 4) isolated
 5) answer not available in article.
34. **The two battles left the Spanish fleet**
 1) open to change
 2) triumphant
 3) open to attack
 4) defeated
 5) discouraged
35. **The Armada was on one side.**
 1) closed off
 2) damaged
 3) alone
 4) circle
 5) answer not available in this article.

PASSAGE – 2

Questions (36-40):

The victory of the small Greek democracy of Athens over the mighty Persian empire in 490 B.C. is one of the most famous events in history. Darius, king of the Persian empire, was furious because Athens had interceded for the other Greek city-states in revolt against Persian domination. In anger the king sent an enormous army to defeat Athens. He thought it would take drastic steps to pacify the rebellious part of the empire. Persia was ruled by one man.

In Athens, however, all citizens helped to rule. Ennobled by this participation, Athenians were prepared to die for their city-state. Perhaps this was the secret of the remarkable victory at Marathon, which

freed them from Persia rule. On their way to Marathon, the Persians tried to fool some Greek city-states by claiming to have come in peace. The frightened citizens of Delos refused to believe this. Not wanting to abet the conquest of Greece, they fled from their city and did not return until the Persians had left. They were wise, for the Persians next conquered the city of Etria and captured its people.

Tiny Athens stood alone against Persia. The Athenian people went to their sanctuaries. There they prayed for deliverance. They asked their gods to expedite their victory. The Athenians refurbished their weapons and moved to the plain of Marathon, where their little band would meet the Persians. At the last moment, soldiers from Plataea reinforced the Athenian troops.

The Athenian army attacked, and Greek citizens fought bravely. The power of the mighty Persians was offset by the love that the Athenians had for their city. Athenians defeated the Persians in archery and hand combat. Greek soldiers seized Persian ships and burned them, and the Persians fled in terror. Herodotus, a famous historian, reports that 6400 Persians died, compared with only 192 Athenians.

Questions :

36. **Athens had the other Greek city-states against the Persians.**
 1) refused help to
 2) intervened on behalf of
 3) wanted to fight
 4) given orders for all to fight
 5) defeated
37. **Darius took drastic steps to the rebellious Athenians**
 1) weaken
 2) destroy
 3) calm
 4) placate
 5) answer not available
38. **Their participation to the Athenians.**
 1) gave comfort
 2) gave honour
 3) gave strength
 4) gave fear
 5) gave hope
39. **The people of Delos did not want to the conquest of Greece.**
 1) end
 2) encourage
 3) think about
 4) daydream about
 5) answer not available

40. The Athenians were by some soldiers who arrived from Plataea.

1) welcomed 2) strengthened
3) held 4) captured
5) answer not available

PART – III

ANALYTICAL REASONING

41. If a rubber ball consistently bounces back to $\frac{2}{3}$ of the height from which it is dropped, what fraction of its original height will the ball bounce after being dropped and bounced four times without being stopped?

1) $\frac{16}{81}$ 2) $\frac{16}{27}$
3) $\frac{4}{9}$ 4) $\frac{37}{81}$
5) $\frac{9}{12}$

42. A class had 9 students. On one test, the class average was 61. One student's paper was scored incorrectly, and the resulting score was raised 18 points. What is the corrected class average?

1) 70 2) 63
3) 72 4) 78
5) 74

43. If $(0.004 \times 10^a)(0.32 \times 10^b) = 128 \times 10^3$, $a + b = ?$

1) 3 2) 5
3) 6 4) 8
5) -2

44. A school sold drama tickets for INR 100 each for donating to an orphanage. One member sold 75% of his tickets and had 80 tickets left. How much money did the member collect?

1) INR 6000 2) INR 7500
3) INR 15000 4) INR 24000
5) INR 32000

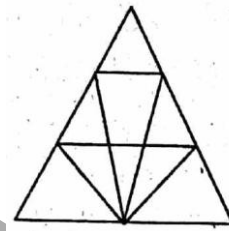
45. There are 35 steps in a temple. By the time Chithra comes down two steps, Madhu goes up one step. If they start simultaneously and keep their speed uniform, then at which step from bottom will they meet.

1) 9th 2) 12th
3) 13th 4) 8th
5) None of the above

46. In how many ways can the letters of the word BEAUTY be arranged such that the vowels always appear together?

1) $\frac{6!}{2!}$ 2) $4! \times 3!$
3) $\frac{4!}{2!}$ 4) $\frac{4! \times 3!}{2!}$
5) $\frac{3! \times 3!}{2!}$

47. Find the number of triangles in the given figure.



1) 20 2) 18
3) 32 4) 24
5) 16

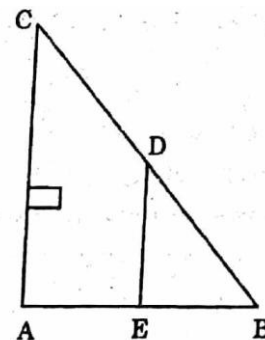
48. If the radius of a cylinder is increased by 8%, then the volume of the cylinder is increased by

1) 8% 2) 64%
3) 24.16% 4) 16.64%
5) 6.4%

49. If the length of a rectangle is increased by 30% and the width of the same rectangle is decreased by 30%, then the area of the rectangle.

1) Decreases by 30% 2) Increases by 30%
3) Is unchanged 4) Increases by 15%
5) Decreased by 9%

50. DE is parallel to AC. AE=EB, DE=8cm, and AE=6cm. What is AC?



1) 10 2) 12
3) 14 4) 16
5) 20

51. Which of the following is the lowest positive integer that is divisible by each of the integers from 3 through 6 inclusive?

- 1) 30 2) 40
3) 60 4) 120
5) 240

52. A team has wins, losses, and drawn in a ratio of 7 to 8 to 3. If they played a total of 108 games, how many games did they win?

- 1) 6 2) 13
3) 14 4) 22
5) 42

53. Which one of the following is true?

- 1) $\sqrt{(2^{14})} > (\sqrt{96})^2$ 2) $3^4 < 4^3$
3) $2\sqrt{75} > 6\sqrt{12}$ 4) $\sqrt{98} = 4\sqrt{6}$
5) None of the above

54. An automobile tyre has two punctures. The first puncture by itself would make the tire flat in 7 minutes. The second puncture by itself would make the tire flat in 11 minutes. How long will it take for both punctures together to make the tire flat? (Assume the air leaks out at a constant rate.)

- 1) 9 min. 2) $4\frac{5}{18}$ min
3) $4\frac{3}{5}$ min 4) $5\frac{2}{9}$ min
5) 5 min

55. Which of the following fractions is the smallest?

- 1) $\frac{5}{6}$ 2) $\frac{11}{14}$
3) $\frac{12}{15}$ 4) $\frac{17}{21}$
5) $\frac{29}{35}$

56. If x, y, z are chosen from three numbers -5, $\frac{1}{3}$, and 4, what is the largest possible value of the expression $(x/y) * z^2$?

- 1) $-16/15$ 2) 60
3) 300 4) 240
5) -60

57. What is the perimeter of a rectangular pentagon whose sides are 6 inches long?

- 1) 3 feet 2) 2 feet and 4 inches
3) 2 feet and 3 inches 4) 2.5 feet
5) 4 feet

58. Given that a and b are real numbers, let $f(a, b) = ab$ and let $g(a) = a^2 + a$, then $f(3, g(3))$

- 1) $3a^2 + 2$ 2) $3a^2 + 6$

3) 27 4) 29

5) 33

59. If $(x^2 - y^2) = 21$ and $x + y = 3$, then $x - y = ?$

- 1) 5 2) 6
3) 7 4) 8
5) 9

60. A land cost Mr. Kathir X rupees in 1990. Three years later he sold the house for 30% more than he paid for it. He had to pay a tax 45% of the gain. How much tax must Mr. Kathir pay?

- 1) 0.585 X 2) 0.135 X
3) 0.27 X 4) 0.295 X
5) 0.5 X

PART - IV **DATA SUFFICIENCY - 1**

DIRECTIONS :

Each of the following problems has a question and two statements which are labeled (1) and (2). Use the data given in (1) and (2) together with other available information (such as the number of hours in a day, the definition of clockwise, mathematical facts etc.) to decide whether the statements are sufficient to answer the question. Then choose.

- If you can get the answer from (1) alone but not from (2) alone;
- If you can get the answer from (2) alone but not from (1) alone;
- If you can get the answer from (1) and (2) together, although neither statement by itself suffices.
- If statement (1) alone suffices and statement (2) alone suffices.
- If you cannot get the answer from statements (1) and (2) together, but need even more data.

61. A rectangular field is 40 m long. Find the area of the field.

- 1) A fence around the entire boundary of the field is 140 m long.
2) The field is more than 20 m wide.

62. Is X a number greater than zero?

- 1) $X^2 - 1 = 0$ 2) $X^3 + 1 = 0$

63. An industrial plant produces bottles. In 2010 the number of bottles produced by the plant was twice the number produced in 2009. How many bottles were produced

altogether in the years 2009, 2010 and 2011?

- 1) In 2011 the number of bottles produced was 3 times the number produced in 2009
- 2) In 2012 the number of bottles produced was one half the total produced in the years 2009, 2010 and 2011.

64. A man six feet tall is standing near a pole. On the top of the pole is a light. What is the length of the shadow cast by the man?

- 1) The pole is 24 feet high
- 2) The man is 18 feet from the pole.

65. Working at a constant rate and all by himself, a labourer X takes 3 hours to fill up a ditch with sand. How long would it take for the labourer Y to fill up the same ditch alone?

- 1) Working together but at the same time X and Y can fill the ditch in 95 mins.
- 2) In any length of time worker Y fills in only 60% as much as worker X does in the same time.

66. Did Ram play in the beach yesterday?

- 1) Ram gets tired on the next day if he plays in the beach
- 2) Ram is tired today.

67. Are two triangles congruent?

- 1) Both triangles are right triangles.
- 2) Both triangles have the same perimeter.

68. If both conveyor belt A and conveyor belt B are used, they can fill a drum with coal in one hour. How long will it take for conveyor belt A to fill the drum without conveyor belt B?

- 1) Conveyor belt A moves twice as much coal as conveyor belt B
- 2) Conveyor belt B would take 3 hours to fill the hopper without belt B

69. An insect crawls around the outside of a circle once. A second insect crawls around the outside of a square once. Which insect travels further?

- 1) The diagonal of the square is equal to the diameter of the circle

2) The insect crawling around the circle took more time to complete its journey than the fly crawling around the square.

70. How much premium did a government office pay to insure its building against fire in 2011?

- 1) It had cost Rs. 2,15,000 for fire insurance in 2010
- 2) The total premium paid towards fire insurance in 2011, 2010 and 2009 was Rs. 6,05,000

71. Is y larger than 1?

- 1) y is larger than 0.
- 2) $y^2 - 4 > 0$

72. A worker is hired for 6 days. He is paid Rs. 20 more for each day of work than he was paid for the preceding day of work. How much was he paid for the first day of work?

- 1) His total wages for the 6 days was 1500.
- 2) He was paid 150% of his first day's pay for the sixth day.

73. A car originally sold for Rs. 3,00,000. After a month, the car was discounted $x\%$ and a month later the car's price was discounted $y\%$. Is the car's price after discounts less than 260000?

- 1) $y - 10$
- 2) $x = 15$

74. How much cardboard will it take to make an open cubical box with no top?

- 1) The area of the bottom of the box is 4 square metres.
- 2) The volume of the box is 8 cubic metres.

75. Is the integer x divisible by 3?

- 1) The last digit x is 3
- 2) $x+5$ is divisible by 6

76. A sequence of numbers is given by rule $a_n = (a_{n-1})^2$. What is a_5 ?

- 1) $a_1 = -1$
- 2) $a_3 = 1$

77. How much is Kiran's weekly salary?

- 1) Kiran's weekly salary is twice as much as Arun's weekly salary
- 2) Arun's weekly salary is 40% of the total of Deepak's weekly salary and Kiran's weekly salary.

78. If a , b and c are digits, is $a + b + c$ a multiple of 9? A digit is one of the integers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9?

- 1) The three digit number abc
2) $(a \times b) + c$ is a multiple of 9

79. Find $x + 2y$

- 1) $x + y = 4$ 2) $2x + 4y = 12$

80. Is $k^2 + k - 2 > 0$

- 1) $k < 1$ 2) $k > -1$

PART – V

In the sentences given, one part alone is wrong. Identify that part and mark it. If there is no error, mark as 5.

81. I happen / to travel by auto one day /

- (1) (2)

when it suddenly / jerked to a halt /

- (3) (4)

No error.

- (5)

82. I was taken aback / when the pedestrian /

- (1) (2)

turns around / and accused me of being

- (3) (4)

impatient / No error.

- (5)

83. You are eagerly waiting / for an important

- (1)

call with your landline phone / but it has /

- (2) (3)

suddenly gone dead / No error.

- (4) (5)

84. All this / may sound / little too much /

- (1) (2) (3)

but it is true / No error.

- (4) (5)

85. Once you are beyond the city limits / and hit

- (1) (2)

the highway / you feel like a free bird /

- (3)

ready to take on / No error.

- (4) (5)

86. Electricity is one of / the major problem /

- (1) (2)

faced by the people of / both rural and

- (3) (4)

urban India / No error.

- (5)

87. We are not / able to run / the mills correctly

- (1) (2) (3)

/ for two months now / No error.

- (4) (5)

88. Even if / human beings don't learn / nature

- (1) (2)

continues to teach / new lessons now and

- (3) (4)

then / No error.

- (5)

89. Some researchers / are saying / birds posses

- (1) (2)

innate sensory objects in their brain / that

- (3)

can trace waves generated by the earth's

- (4)

magnetic field / No error.

- (5)

90. The trace gas ozone / was important / in

- (1) (2)

protecting life on earth / and filters out

- (3) (4)

harmful UV rays / No error.

- (5)

91. Kavitha and Anitha have / returned back /

- (1) (2)

from France / yesterday evening / No error.

- (3) (4) (5)

92. Most of the time / training program / are

- (1) (2)

considered necessary / to perform jobs

- (3) (4)

effectively / No error.

- (5)

93. Fifty countries with roughly / a third of the

- (1)

world's population / suffers from / medium

- (2) (3)

or high water stress / No error.

- (4) (5)

94. His hair is unruly / as were his rumpled

- (1) (2)

clothes / and he would sometimes /

- (3)

snort loudly / No error.

- (4) (5)

95. Surprisingly / Asian Universities have /
(1) (2)
improved their rankings / in the past five
(3) (4)
years / No error.
(5)
96. In the Western Ghats / fires are set / in the
(1) (2)
forests on the upper hill slopes / just before
(3)
the advent of the monsoon / No error.
(4) (5)
97. More than half of / the world's forests / will
(1) (2)
be a loss / if global temperatures continue to
(3) (4)
rise / No error.
(5)
98. Dreams not only help us / in seeing things

- (1) (2)
before they happen / but they also give us
(3)
the passion and energy / to help them
(4)
happen / No error.
(5)
99. Toys are a child's / best friend for / they
(1) (2)
engage the child's attention / for a long time
(3) (4)
/ No error.
(5)
100. When a formation of birds / files over long
(1) (2)
distances / each bird take / its turn in
(3) (4)
leading / No error.
(5)

MBA 2013 – ANSWERS

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

MBA 2013 –DETAILED SOLUTIONS**PART – I****1. (2)**

Approximately for executive positions locally is main objective. Hence this is a major factor.

2. (1)

Executive positions of Western firm to be filled with locals – is the main objective. In order to reduce costs and also to achieve better results.

3. (4)

Asian executives can secure deals with local business and governments is an assumption and that has prompted companies to fill executive positions locally.

4. (2)

Since Executives with Asian experience only are needed – foreigners with no Asian experience are not required is a major factor.

5. (1)

Recruitment of Asian executives is a strategic necessity is a major objective that has motivated companies to filled executive positions locally.

6. (4)

Yes. This is an assumption and that has decided the major objective of recruitment of top executives from local talents.

7. (2)

Already highlighted in qn. No.2. – major factor.

8. (2)

This again is the assumption that has prompted companies to decide the strategy.

9. (2)

‘Many local officials do not speak English’ – is a major factor in deciding to recruit for top positions locally.

10. (3)

This is a minor factor considering the major objective of recruitment of locals in top executive positions.

11. (5)

This information is an unimportant factor considering the major objective high-lighted in the passage.

12. (3)

This is a minor factor.

13. (2)

Since Executives with Asian experience only are needed – foreigners with no Asian experience are not required is a major factor.

14. (3)

This is a minor factor considering the major objective.

15. (2)

Yes. This is a major factor- viz.” Employing expatriated cost too much.”

16. (3)

Minor factor.

17. (4)

This is an assumption for hiring locally.

18. (2)

Major factor – business dealing by natives are less “transactional” and more “trust-based” compelling companies to hire locally.

19. (2)

Major factor – business dealing by natives are less “transactional” and more “trust-based” compelling companies to hire locally.

20. (2)

Since China has become the biggest earning driver for Yum Brand Inc they have decided to recruit locally for top executive positions – major factor determining the major objective.

21. (2)

Sustaining acceleration of the economy is major objective and hence “the difficulty to sustain the acceleration of the economy” is major factor

22. (4)

“The rapidly growing middle class in the Indian economy” – is an assumption. It is given that the rapidly growing middle class will produce a quarter of the world’s new workers over the next three years. – for achieving the major objective of sustaining acceleration of the economy.

23. (3)

For the main objective stated in question no.21-this one is a major factor.

24. (5)

A major factor.

25. (5)
“High earners are growing in number exponentially.” – this has no direct effect on achievement of major objective and hence classified as “unimportant issue.”
26. (2)
“The legacy that Europe can give to India is its intellectual property”. A major factor.
27. (2)
A major factor.
28. (5)
“India has no one dominating trading partner.” – has no relevance on the objective and hence classified as “unimportant issue.”
29. (2)
“A perceived skill gap among the Indian workforce.” – major factor.
30. (2)
“India is opened up to Middle east, Latin America and Asia.” – a major factor that helps achieving major objective.
- PART - II
31. (1)
“Supremacy” means unlimited power, not unrestricted growth (2). The passage states that Drake diminished Spanish’s supremacy, but does not specifically mention diminishing its territory (3). Drake’s raids enriched England and reduced Spain’s power; no mention is made of eliminating any treaties (4).
32. (2)
“Robust” means strong. It does not mean warlike (1), accomplished (3) or competent, timid (4) or fearful, or inexperienced (5).
33. (2)
“Martial” means warlike or war-related. It does not mean complete (1), independent (3), or isolated (4).
34. (3)
“Vulnerable” means open to attack or susceptible to harm. It does not mean open to change (1) or receptive, triumphant (2) or victorious, defeated (4) or beaten-they were vulnerable to attack first and then consequently were defeated-or discouraged (5), i.e. disheartened or dispirited.

35. (1)
The passage indicates the Armada was “blocked” on one side, i.e. closed off rather than damaged (2) (it was damaged extensively, not on one side); alone (3) or circled (4), i.e. surrounded, neither of which can be done on only one side.
36. (2)
“Interceded for” means intervened on behalf of, not refused help to (1), wanted to fight (3), given orders for all to fight (4), or defeated (5).
37. (3)
“Pacify” means to calm or make peaceful. It does not mean to make weaker (1), to destroy (2), or to irritate (4), i.e. annoy or provoke.
38. (2)
“Ennobled” means gave honour to or made noble. It does not mean gave comfort (1) or solace, gave strength (3), i.e. fortified or reinforced, gave fear (4) or frightened, or gave hope (5) or encouraged.
39. (2)
To “abet” means to enable, support, or encourage, usually in crime or doing something wrong. It does not mean to end (1), think about (3), or daydream about (4) something.
40. (2)
“Reinforced” means strengthened, not welcomed (1), held (3), or captured (4).

PART – III**ANALYTICAL REASONING**

41. (1)
Let the original height be h
Height after four bounces

$$= \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} h = \frac{16}{81} h$$

$$= \frac{16}{81} \text{ of the original height}$$
42. (2)
Total marks 9 students = $9 \times \text{Average}$

$$= 9 \times 61 = 549$$

 After correction new total = $549 + 18 = 567$

$$\therefore \text{Corrected Average} = \frac{567}{9} = 63$$

 Short-cut
 Corrected average

$$= \text{Old average} + \frac{\text{Raised marks}}{\text{total Students}}$$

$$= 61 + \frac{18}{9} = 61 + 2 = 60$$

43. (4)

$$(0.004 \times 10^9)(0.32 \times 10^6) = 128 \times 10^3$$

$$\Rightarrow \frac{4}{1000} \times 10^9 \times \frac{32}{100} \times 10^6 = 128 \times 10^3$$

$$\Rightarrow \frac{4}{10^3} \times \frac{32}{10^2} \times 10^{a+b} = 128 \times 10^3$$

$$\Rightarrow 10^{a+b} = \frac{128 \times 10^3 \times 10^3 \times 10^2}{4 \times 32} = 10^8$$

$$\therefore a + b = 8$$

44. (4)

Let the total tickets be x
 Then 25% of $x = 80$

$$\frac{25}{100} \times x = 80$$

$$\therefore x = \frac{80 \times 100}{25} = 320$$

Tickets sold = 75% of x

$$= \frac{75}{100} \times 320 = 240$$

\therefore Amount collected INR 100×240
 $=$ INR 24000

Short-cut

25% \rightarrow 80

\therefore 75% $\rightarrow 3 \times 80 = 240$

Amount collected = INR 100×240
 $=$ INR 24000

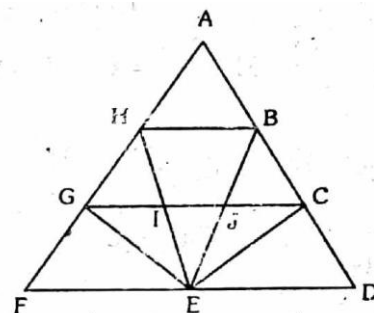
45. (5)

After 11 times, Chitra will be on the 13th step from the bottom.
 After 11 times, Madhu will be on the 12th step from the bottom.
 So they will not meet on the same step.

46. (2)

In BEAUTY, there are three vowels A, E and U.
 Since vowels are together, treat these three as one letter. There are other three letters B, T, Y
 Therefore totally four letters.
 These 4 letters can be arranged in $4P_4 = 4!$ ways
 The vowels in the group (AEU) may be arranged in $3!$ ways.
 \therefore Required number of ways = $4! \times 3!$

47. (2)



Simple triangles are ABH, BJC, CED, JCE, EIJ, EGI, EFG, GIH

Total = 8

Triangle composed by two components.
 $=$ HEG, HEB, BEC, EIC, EGH

Total = 5

Triangle composed by 3 components
 $=$ HFE, BED, GEC

Total = 3

Triangle composed by four components
 $=$ AGC

Triangle composed by nine components
 $=$ AFD

Total number of triangles
 $= 8 + 5 + 3 + 1 + 1$
 $= 18$ triangles

48.

(4)

Let the base radius and height of the cylinder be r and h respectively
 Volume = $\pi r^2 h$

Increase in radius = 8% of r

$$\therefore \text{Increased radius} = \frac{108}{100}r = 1.08r$$

New volume = $\pi(1.08r)^2 h$
 $= 1.1664 \pi r^2 h$

Increase in volume = $1.1664 \pi r^2 h - \pi r^2 h$
 $= 0.1664 \pi r^2 h$

$$\therefore \% \text{ Increase} = \frac{0.1664 \pi r^2 h}{\pi r^2 h} \times 100 = 16.64\%$$

49.

(5)

Let the length and width of the rectangle be x and y respectively
 Area = xy

New length = 130% of x
 $= \frac{130}{100} \times 1.3x$

New width = 70% of y
 $= \frac{70}{100}y = 0.7y$

$$\begin{aligned}
 \text{New area} &= 1.3x \times 0.7y \\
 &= 0.91xy \\
 \text{Decrease in Area} &= xy - 0.91xy \\
 &= 0.09xy \\
 \text{Decrease percentage} &= \frac{\text{Decrease}}{\text{Original Area}} \times 100 \\
 &= \frac{0.09xy}{xy} \times 100 = 9\%
 \end{aligned}$$

Short-cut

If the change in length of a rectangle is $a\%$ and change in width is $b\%$ then % change in Area.

$$= a + b + \frac{ab}{100}$$

(If the change is decrease put negative sign)

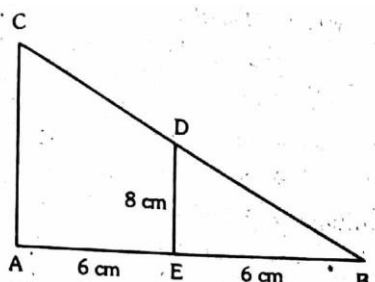
$$a = 30\% ; b = -30\%$$

$$\begin{aligned}
 \therefore \% \text{ change in area} &= a + b + \frac{ab}{100} \\
 &= 30 - 30 + \frac{30 \times (-30)}{100} \\
 &= \frac{-900}{100} = -9\% \\
 &\quad (\text{negative})
 \end{aligned}$$

\therefore The area is decreased by 9%

50.

(4)



$$AE = 6 \text{ cm.}$$

Since $AE = EB$ implies $EB = 6 \text{ cm.}$

$DE = 8 \text{ cm}$ Also $AB = 6 + 6 = 12 \text{ cm}$

$\triangle ABC$ and $\triangle EBD$ are similar triangles.

$$\therefore \frac{AC}{ED} = \frac{AB}{EB}$$

$$\Rightarrow \frac{AC}{8} = \frac{12}{6}$$

$$\therefore AC = 2 \times 8 = 16 \text{ cm}$$

51.

(3)

L.C.M. of (3, 4, 5, 6) = 60

\therefore Required number is a multiple of 60

From the given options, required least number = 60.

52.

(5)

Number of games they win

$$= \frac{7}{7+8+3} \times 108 = \frac{7}{18} \times 108 = 42$$

53.

(1)

Consider option (1)

$$\sqrt{2^{14}} = 2^7 = 128$$

$$(\sqrt{96})^2 = 96$$

Clearly $\sqrt{2^{14}} > (\sqrt{96})^2$

54.

(2)

Amount of air leaked by the first puncture in 1 minute = $\frac{1}{7}$

Amount of air leaked by the second puncture in 1 minute = $\frac{1}{11}$

Amount of air leaked by both puncture in 1 minute = $\frac{1}{7} + \frac{1}{11} = \frac{11+7}{77} = \frac{18}{77}$

\therefore Time taken by both puncture together to make the tire flat = $\frac{77}{18} = 4\frac{5}{18}$ minutes.

55.

(2)

$$\frac{5}{6} = 0.833 ; \frac{11}{14} = 0.786 ; \frac{12}{15} = 0.8 ;$$

$$\frac{17}{21} = 0.8095 ; \frac{29}{35} = 0.8285$$

$$\therefore \text{Smallest} = \frac{11}{14}$$

56.

(3)

$$\text{Take } x = 4 ; y = \frac{1}{3} ; z = -5$$

$$\begin{aligned}
 \text{Then } \left(\frac{x}{y}\right) \times z^2 &= \left(\frac{4}{1/3}\right) \times (-5)^2 \\
 &= 12 \times 25 = 300
 \end{aligned}$$

57.

(4)

Perimeter of a pentagon

$$= 5 \times \text{side} = 5 \times 6$$

$$= 30 \text{ inches} = 2.5 \text{ feet}$$

58.

(5)

$$f(a, b) = ab$$

$$g(a) = a^2 + a$$

$$g(3) = 3^2 + 2 = 9 + 2 = 11$$

$$f(3, g(3)) = f(3, 11)$$

$$= 3 \times 11 = 33$$

59.

(3)

$$x + y = 3$$

$$x^2 - y^2 = 21$$

$$(x + y)(x - y) = 21$$

$$3 \times (x - y) = 21$$

$$\therefore x - y = \frac{21}{3} = 7$$

60.

(2)

$$\text{Gain} = 30\% \text{ of } x$$

$$= \frac{30x}{100} = 0.3x$$

$$\begin{aligned}\text{TAX} &= 45\% \text{ of the gain} \\ &= \frac{45}{100} \times (0.3x) = 0.135x\end{aligned}$$

PART – IV
DATA SUFFICIENCY

61. (1)

Length of the rectangular field = 40 m

Consider statement (1)

$$\text{Perimeter} = 2(l + w) = 140$$

Where l = length

w = width

$$2(40 + w) = 140$$

$$40 + w = 70$$

$$\therefore w = 70 - 40 = 30$$

Area of the rectangle

$$= \text{length} \times \text{width}$$

$$= 40 \times 30 = 1200 \text{ m}^2$$

 \therefore (1) alone is sufficient.

Statements (2) alone is not sufficient.

62. (2)

From statement (1)

$$x^2 - 1 = 0$$

$$x^2 = 1$$

$$x = \pm 1$$

$$\text{i.e. } x = 1 \text{ (or) } x = -1$$

 \therefore Statement (1) is not sufficient.

Consider statement (2)

$$x^2 + 1 = 0$$

$$x^3 = -1 = (-1)^3$$

$$\therefore x = -1 < 0$$

Therefore x is not greater than zero.

Statement (2) alone is sufficient.

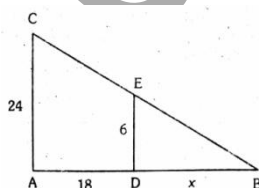
63. (5)

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

64. (3)

Statement (1) alone and (2) alone are not sufficient.

Consider both (1) and (2)



Let AC be the pole and DE be the man.

Let DB = X be the length of the shade.

 $\triangle ABC$ and $\triangle EDB$ are similar.

$$\begin{aligned}\therefore \frac{DE}{AC} &= \frac{DB}{AB} \\ \frac{6}{24} &= \frac{x}{18+x} \\ \Rightarrow \frac{x}{18+x} &= \frac{1}{4} \\ 4x &= 18 + x \\ 3x &= 18 \\ \therefore x &= \frac{18}{3} = 6 \text{ feet}\end{aligned}$$

65. (4)

x takes 3 hrs = 180 min. to fill up a ditch.

$$\text{Work done by x in 1 minute} = \frac{1}{180}$$

Consider statement (1)

$$\text{Work done by X + Y in 1 min} = \frac{1}{95}$$

$$\frac{1}{X} + \frac{1}{Y} = \frac{1}{X+Y}$$

$$\Rightarrow \frac{1}{180} + \frac{1}{Y} = \frac{1}{95}$$

$$\frac{1}{Y} = \frac{1}{95} - \frac{1}{180}$$

 \therefore Time taken by Y alone to fill the ditch

$$= \frac{1}{\left(\frac{1}{95} - \frac{1}{180}\right)} \text{ min.}$$

(No need to derive the exact answer)

 \therefore (1) alone is sufficient consider statement (2)

Work efficient x : y

$$= 1 : \frac{60}{100} = 1 : 0.6$$

$$\text{Time taken X : Y} = 0.6 : 1$$

$$\text{Time taken by X} = 3 \text{ hrs.}$$

Let time taken by Y be t

then $0.6 : 1 : 3 : t$

$$\Rightarrow 0.6t = 1 \times 3$$

$$t = \frac{3}{0.6}$$

 \therefore (2) alone is sufficient.

66. (5)

By (2) Ram is tired today. There may be so many reasons for getting tired. For example if we work hard. We can get tired. Therefore by this statement we cannot conclude whether Ram played in the beach yesterday.

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

67. (5)

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

68. (4)

Consider statement (1)

$$\text{Work efficient of A : B} = 2 : 1$$

$$(A + B)'s \text{ 1 hr. work} = \frac{1}{1} = 1$$

$$\therefore \text{A's 1 hr work} = \frac{2}{2+1} \times 1 = \frac{2}{3}$$

\therefore A can complete the work in $\frac{3}{2}$ hrs.

\therefore (1) alone is sufficient.

Consider statement (2)

$$\text{B's 1 hour's Work} = \frac{1}{3}$$

$$(\text{A} + \text{B})\text{'s 1 hour's work} = \frac{1}{1} = 1$$

$$\therefore \text{A's 1 hour's work} = 1 - \frac{1}{3} = \frac{2}{3}$$

\therefore A alone can complete the work in $\frac{3}{2}$ hrs.

\therefore (2) alone is sufficient.

69. (1)

The first fly will travel a distance equal to the circumference of the circle. The second fly will travel $4a$ where 'a' is length of the side of the square. Since the diagonal of a square has length $\sqrt{2}a$, the second fly will travel $\frac{4}{\sqrt{2}}$ times the diagonal of the square, Therefore (1) alone is sufficient since $\frac{4}{\sqrt{2}} = \frac{4\sqrt{2}}{2} = 2\sqrt{2}$ which is less than π .

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

70. (5)

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

71. (3)

Statement (1) is not sufficient consider statement (2)

$$y^2 - 4 > 0 \Rightarrow y^2 > 4$$

$$\Rightarrow y < -2 \text{ (or) } y > 2.$$

\therefore (2) alone is not sufficient

Consider both (1) and (2)

Then by (1) y is larger than 0

$$\text{By (2) } y < -2 \text{ (or) } y > 2$$

\therefore by (1) and (2) $y > 2$

\therefore y is larger than 1

72. (4)

Let the wage for the first day = x

Consider statement (1)

$$x + (x + 20) + (x + 40) + (x + 60) + (x + 80) + (x + 100) = 1500$$

$$\Rightarrow 6x + 300 = 1500$$

$$6x = \frac{1200}{6} = \text{Rs. } 200$$

\therefore (1) alone is sufficient.

Consider statement (2)

First day salary = x

Sixth day salary = x + 100

150% of x = x + 100

$$\Rightarrow \frac{150}{100} \times x = x + 100$$

$$\frac{3}{2}x = x + 100$$

$$3x = 2x + 200$$

$$x = 200$$

\therefore (2) alone is sufficient

73.

(2)

Statement (1) alone is not sufficient.

Consider statement (2)

$$x = 15$$

After discount car's price

$$= \frac{85}{100} \times 3,00,00$$

$$= 2,55,000$$

For one discount $x = 15$, the price is less than Rs. 2,60,000. Therefore the price of the car is less than 2,60,000 after two discounts $x\%$ and $y\%$

74.

(4)

Consider statement (1)

$$\text{Area of the bottom box} = 4\text{m}^2$$

\therefore Required cardboard = surface area of the box (top open)

$$= 5 \times \text{bottom area}$$

$$= 5 \times 4 = 20 \text{ m}^2$$

\therefore (1) alone is sufficient.3

Consider statement (2)

$$\text{Volume of the box} = a^3 = 8$$

where a is side of the box

$$a^3 = 8 = 2^3$$

$$a = 2 \text{ m}$$

$$\text{Area of the face} = a^2 = 4\text{m}^2$$

$$\therefore \text{Required cardboard} = 5 \times 4 = 20\text{m}^2$$

\therefore (2) alone is sufficient.

75.

(2)

Consider statement (1)

63 is divisible by 3

53 is not divisible by 3

\therefore Statement (1) alone is not sufficient

Consider statement (2)

$x + 5$ is divisible by 6

$\Rightarrow x$ is may (or) may not be divisible by 63

$\therefore x$ is may (or) may not be divisible by 3

∴ (2) alone is not sufficient.

76. (4)

Consider statement (1)

$$\begin{aligned} a_n &= (a_{n-1})^2 \\ a_1 &= -1 \\ a_2 &= (a_1)^2 = (-1)^2 = 1 \\ a_3 &= (a_2)^2 = 1^2 = 1 \\ a_4 &= (a_3)^2 = 1^2 = 1 \\ a_5 &= (a_4)^2 = 1^2 = 1 \end{aligned}$$

∴ (1) alone is sufficient.

Consider statement (2)

$$\begin{aligned} a_3 &= 1 \\ a_4 &= (a_3)^2 = 1^2 = 1 \\ a_5 &= (a_4)^2 = 1^2 = 1 \end{aligned}$$

∴ (2) alone is sufficient.

77. (5)

Statement (1) and (2) are not sufficient

78. (1)

Result:

A number is divisible by 9 if the sum of its digits is divisible by 9.

Consider statement (1)

Three digit number $a b c$ is a multiple of 9

This implies $a + b + c$ is a multiple of 9

∴ (1) alone is sufficient

(2) alone is sufficient

79. (2)

(1) alone is not sufficient.

Consider statement (2)

$$2x + 4y = 12$$

$$\Rightarrow 2(x+2y) = 12$$

$$x + 2y = 6$$

∴ (2) alone is sufficient.

80. (3)

$$k^2 + k - 2 = (k + 2)(k - 1)$$

(1) alone is sufficient

(2) alone is sufficient

From (1) and (2) $k < 1$ and $k > -1$

∴ k lies between -1 and 1

$\Rightarrow k + 2$ is positive

$k - 1$ is negative

∴ $(k + 2)(k - 1)$

= positive \times negative = negative

∴ $k^2 + k - 2$

= $(k + 2)(k - 1) < 0$

∴ Statement (1) and (2) are sufficient to answer the question.

PART - V

81. (2)

change as "to travel by an auto one day".

82. (3)

change as "turn around"

83. (3)

change as "but it"

84. (3)

change as "a little too much"

85. (2)

change as "and reach the highway"

86. (2)

change as "the major problems"

87. (1)

change as "We have not been"

88. (5)

No error.

89. (3)

change as "birds possess an innate sensory object in their brain."

90. (2)

change as "is important".

91. (1)

change as "Kavitha and Anitha"

92. (2)

change as "training programs"

93. (3)

change as "suffer from"

94. (2)

change as "as are his rumpled clothes"

95. (5)

No error

96. (2)

change as "first is set"

97. (3)

change as "will be lost"

98. (3)

change as "but also give us the passion and energy."

99. (5)

No error.

100. (2)

changes as "fly over long distances."

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