CAREERS360

TANCET MBA

Question Paper 2012

MBA 2012 – EXAMINATION PAPER
PART – I

Directions:

This section comprises two passages. After each passage questions consisting of items relating to the preceding passage are given. Evaluate each item separately in terms of the respective passage and choose your answer as per in the following guidelines.

1. if the item is a MAJOR OBJECTIVE in making the decision; that is, the outcome or result sought by the decision maker.
2. if the item is a MAJOR FACTOR in arriving at the decision; that is consideration, explicitly mentioned in the passage that is basic in determining the decision.
3. If the item is a MINOR FACTOR in making the decision; a less important element bearing on or affecting a Major Factor, rather than a Major Objective directly.
4. If the item is a MAJOR ASSUMPTION made deliberately; that is a supposition or projection made by the decision maker before considering the factors and alternatives.
5. If the item is an UNIMPORTANT ISSUE in getting to the point; that is a factor that is insignificant or not immediately relevant to the situation.

PASSAGE 1

The Parks Company, located in New York City, had engaged exclusively in the manufacture of baking powder for seventy five years since its founding. Sales were approximately $ 800,000 annually. The sales volume, measured in commoditity units instead of dollars, had showed a decline of about 11 percent over the past decade. The company had a small office force and employed – approximately 50 people in the production process, which was divided into (1) the mixing department, (2) the assembly department, and (3) the final inspection and packing department.

In 1935, distribution had been foreign as well as national. Forty years later, the sale of the product was confined to New England and the Middle Atlantic states. Mr. Andrew H. Pendler, the president, attributed this significant decrease in both market area and sales volume to high tariff rates, sterner competition, and trade dislocations caused by World Ware II.

Mr. Gordon Janis, the sales manager, after studying the market closely, arrived at a different set of reasons why sales had been dropping. In the first place, according to Janis, sales to commercial consumers had diminished to practically nothing. Many modern bakeries bought the necessary chemicals and manufactured their own baking powder. Secondly, the population had become urbanised. Formerly, when a larger portion of the citizenry was suburban, many housewives had done their own baking. People in cities were close to bakeries and other outlets where they could buy the finished product, and improved transportation had enabled fresh bakery products to be readily available at Detail outlets. The third reason hich Mr. Janis considered significant was the growing popularity of ready-mixes. The natural tendency of practically all human beings is to get as much as they can for a minimum of effort. Since ready-mixes did save housewives a good deal of labor, this type of product had been well received. Mr. Janis believed that the company could not cope with the first two factors, and therefore his suggestion for increasing sales was to branch out and manufacture ready-mix baking products which would compare favorably with nationally-known brands. Management was particulary receptive to Jani‟s idea because production of ready-mixes would require only minor changes in personnel and the cost of additional machinery would be relatively small. Two additional machines were necessary, each costing approximately $10,000.

Mr.Pendlar was determined to succeed in the marketing of the new products. He believed that a thorough market analysis was a prerequisite to making a final decision as to whether Jani‟s idea was commercially sound. Pender wanted to know whether a small company like Parks could battle for a share of the ready-mix market against much bigger competitors. His concern centered on two key variables. First, he questioned the ability of his marketing people to develop a product which would be sufficiently differentiated from competitor‟s products. Parks would have to market a product which had some distinct advantage over competing products. This advantage could be in the form of an improvement over existing brands, for example, a mix that was easier to prepare. Second, a strong advertising campaign was necessary to enter the market with an

unknown product. Potential consumers would have to be made aware of the new brand and its advantages. Pendler wanted to know how much such an advertising campaign would cost and whether the company had the financial resources to finance it.

Janis was given the task of preparing a marketing research report which would provide answers to Pendler‟s questions. Graduate students were hired to poll housewives as they entered supermarkets. Each student questioned a number of housewives about their purchases of ready-mixes, how frequently they used the products, what they liked and/or disliked about the mixes. Respondents were also asked to recall any advertising they remembered about ready-mixes. After about fifty interviews, Janis believed that he had collected enough information to reach certain conclusions.

Janis tabulated the research data and found the following trends. Most housewives said that they purchased ready-mixes and preferred to prepare their own cakes, rather than buy them from a bakery or supermarket. Housewives felt that ready-mixes were preferable to commercially prepared cakes because of their freshnes and economy. In particular, respondents liked the convenience of being able to bake a cake "in an emergency" if unexpected company came to visit. Other reasons mentioned for preferring rady-mixes were: "Tastes fresh," "modern thing to do," "my neighbours use it," and "I can choose some of the ingredients."

Few respondents using ready-mixes mentioned any dislikes. Some of the negative reactions mentioned were: "Lack of recipe variety," "my husbad doesn‟t like them," and "all the mixes are the same."

Most of the housewives polled recalled seeing some advertising for ready-mixes during the last week. Half of the respondents recalled specific advertising themes of the major producers. Overall reaction to the advertising was favourable.

Examining the survey results, Janis concluded that Parks should market‟a ready-mix of its own. He reasoned that since consumer reaction was so favourable, there was room in the market for another brand. Janis recommended, however, that since the research did not reveasl how Parks might difference its product from those already on the market, the best marketing strategy would be to charge a lower price than that of competing products. With a lower price, he asserted, Park‟s ready-mix would sell well to the economy-minded housewife.

Advertising was a problem. It was clear that, given the relatively small marketing budget available to Janis, Parks could not emulate the sort of advertising campaign used by existing ready-mix manufacturers. Janis believed that if Parks would concentrate solely on the economy-minded market segment, advertising themes could be developed and a campaign launched within the company‟s budget constraints. Janis‟s report and conclusions were forwarded to Mr. Pendler. After a short deliberation, Pendler approved the ready-mix project.

Without further investigation, the manufacture of Park‟s ready-mixes was started. After several months, rady-mix sales still amounted to. less than 10 percent of gross sales, and 85 percent of ready-mix sales were in New York City. The entire position of the company was in jeopardy. Both Mr. Pendler and Mr. Janis were worried about the business, but neither seemed to know what to do.

Questions :

1. Declining sales volume.
2. New York City location of Parks Company.
3. Production of successful ready-mix baking product.
4. Urbanisation of the population.
5. Start-up costs for development of ready-mix product.
6. Differentiation of Park‟s ready-mix from competing products.
7. Specific advertising themes recalled by shoppers being interviewed.
8. Park‟s ability to compete with bigger companies.
9. Number of housewives interviewed for marketing survey.
10. Cost of Park‟s advertising campaign.

PASSAGE 2

The Allied Industrial Rubber Company is a multinational corporation which is based in the United States with additional plants in Africa and Brazil. Sales have been increasing to levels exceeding one billion dollars. Production has gone up and the corporation itselt is doing well. All plants concerned have responsible, intelligent management and employees so

that labour relations. public relations and basic operations have run smoothly. The plants in America and Africa are managed by Americans, while the plant in Brazil is managed by Brazilian nationals.

Allied had been conducting extensive economic scanning. This entailed the use of standard economic measurement to provide a general comparison of the possiblilities of different countries for setting up another firm. The firm had studied India for quite some time, and it was-believed that India had the potential needed to become a site for an Allied plant. India had been considered because rubber is readily available and plentiful in supply, and is easily extracted. Jobs are scarce in India and thus cheap labour is available. The plant would offer a chance for many in the Indian population to better themselves and earn money from jobs supplied by the company.

After closer examination, the Allied Company decided to invest in India. After seven months the factory is nearing completion. It has already been decided that the labour force will be recruited from the native Indian population. Whether managements-level, positions will be filled by Amerians or Indian nationals has not yet been decided.

Of couse as with all foreign investments, requirements of the host country have to be considered and dealt with. Few regulations were specified as to the country from which managerial candidates would be selected. The consensus managerial candidates would be selected. The consensus at Allied was that the majority of managerial jobs would be filled by either Indian nationals or American expatriates. It was decided that an even split would have the possibility of causing great internal conflict between management personnel. It is a well-known fact that European companies favour centralised control of operations by a select group of key executives. This gives precedence to a functionally oriented organization structures. In the United States, on the other hand, companies favour a decentralized decision-making type of structure. However, in United States firms, there seem to be stricter control devices. However, whatever organization is selected, the company must remember that management must be amenable to the traditions and expectations of the labour force. If not, conflict may occur which will result in labour management strife. Faced with the problem of how to select management, the Allied Industrial Rubber Company felt it was necessary to examine both the pros and the cons of hiring from either population. This was done through review of their two foreign plants in Africa and Brazil.

Allied‟s experience with American expatriate managers was examined first. Allied‟s African subsidiary, which has been operating successfully for the past six years, has Americans in key managerial positions. The pros of hiring Americans for managerial positions in Africa have been many. First and foremost, Allied has always felt more comfortable with American managers, because Allied is an American-based company. Another advantage has been that Allied has been able to transfer expatriate managers wherever and whenever necessary.

Hiring Americans has also been essential for the transfer and proper applications of Allied technology. This has enabled Allied to receive maximum feedback from its plant. It has also provided a training ground for inexperienced, young executives. American expatriate managers have “the advantage of gaining years of experience in a different and difficult \ environment. Also, by employing Americans, the company has eliminated the language barrier between subsidiary managers and those at the home base. Because of this, the geographic gap separating them has been narrowed. American expatriate managers seem to be more motivated and loyal. All of these qualifications are necessary for the successful operation of Allied. A final benefit of the use of expatriates has been elimination of the training sessions on company operations which these managers have already received in the United States.

Despite these advantages, there have been disadvantages to contend with. One major disadvantage has been the high costs of transferring Americans to Africa. Numerous incentives were necessary to lure them abroad. All costs of relocating were the firm‟s responsibility. The firm paid for transportation overseas, transportation while in Africa, housing, and domestic services, and provided a liberal expense account. In addition to this, managers were compensated by an increase in their base salary and a hardship premium.

An ever bigger problem has been the cultural gap these managers and their families have experienced. Friends

and relatives had to be left behnd. Establishing new ties has been difficult because of the language barrier. There appears to be higher rate of alcoholism, especially among the women, and rates of divorce also seem abnormally high. Furthermore, managers who returned to America had to take an unwelcome cut in salary. The managers remaining in Africa felt insecure with their position in the firm because of extended periods of time away from the home base.

Allied operations in Brazil have been relatively successful. Although Allied (Brazil) has been in operation for only four years, the use of Brazilian management has proved to be successful.

One of the major advantages of employing Brazilian managers has been the savings in costs through lower national salary levels. By offering salaries" slightly above these low levels, Allied has succeeded in attracting brighter, more experienced people. On the average, this salary has been lower than what Allied would have had to pay an expatirate manager at the same level of expertise.

Through using Brazilian managers, Allied has eliminated the need for cross-cultural training and, of course, there is no language barrier between them and the other employees. These managers have also provided continuity of leadership for the past four years and presumably will do so for many more since the opportunity for advancement with the firm is very high.

Brazilians were hired not because the host country required that local nationals fill positions of importance, but mainly because there was a large pool of trained manpower. However, it was well know that the Brazilian government wanted local nationals to run the factory and was considering the adoption of national controls to achieve this goal. Therefore, Allied would not be affected if and when such legislation were to be enacted.

Hiring Brazilians, however, also had disadvantages. Local managers require extensive training because of their lack of knowledge of Allied‟s technology, products and managerial techniques. This training is costly, and several trainees left the company upon completion of the course. It was assumed that they used this training to obtain jobs elsewhere.

Allied was reluctant to transfer its technology to foreign employees, as this increased the potential for expropriation. Another fear concerned the vast differences in personal values. Most foreign employees cannot help but want to put the needs of their country first. Brazilians are no exception. Their lack of knowledge and experience in other cultures leaves them ill prepared to work for multinationhal corporations. This may make them not always the best choice. However, they have run the Brazilian plant quite efficiently and effectively, and profit levels even exceed that of the African plant.

Given the experience of Allied with both expatriates and local nationals in the management of its plants in Africa and Brazil, management had to make a policy decision with regard to hiring in India.

Questions:

11. Availability of rubber in India.
12. Recruiting managers in India.
13. Centralisation of European company management.
14. Respecting labour force traditions.
15. Divorce rates of expatriate managers.
16. Cost of transporting expatriates.
17. Possibility of internal conflict.
18. Allied‟s experience in Africa and Brazil.
19. Costs of housing expatriates.
20. Cross-cultural training in Brazil.

PART – II

Directions :

Each passage in this section is followed by questions based on its contents. Read the passages carefully and then answer the questions given below them by choosing the best answer to each question. Answer the questions on the basis of what is stated or implied in the passage.

PASSAGE – 1

If Western civilization is in a state of permanent crisis, it is not far fetched to suggest that there may be something wrong with its education. No* civilization, I am sure, has ever devoted more energy and resources to organized education, and if we believe in nothing else, we certainly believe that education is, or should be, the key to everything. In fact, the belief in education is so strong that we treat it as the residual legatee of all our problems. If the nuclear age brings new danger, if the advance of genetic engineering opens the doors of new abuses; if commercialism brings new temptations, the answer must be more and

better education. The modern way of life is becoming more complex : This means that everybody must become more highly educated, “By 1984”, it was said, “It will be desirable that the most ordinary of men is not embrarrassed by the use of a logarithm table, the elementary concepts of the calculus, and by the definitions and uses of such words as electron coulomb, and volt. He should further have become able not only to handle a pen, and ruler but also a magnetic tape, valve, and transistor. The improvement of communications between individuals and groups depends on it.” Most of all, it appears, the international situation calls for prodigious educational efforts. The classical statement on this point was delivered by Sir Charles (now Lord) Snow in his Rede Lecture some years ago : To say that we must educate ourselves, or perish, is a little more melodramatic than the facts warrant. To say we have to educate ourselves or watch a steep decline in our lifetime, is about right. According to Lord Snow, the Russians are apparently doing much better than anyone else and will „have a clear edge“, unless and until the.” Americans and we educate ourselves both sensibly and imaginatively. Lord Snow, it will be recalled, talked about „The Two Cultures and the Scientific Revolution“ and expressed his concern that the intellectuals life of the whole of western society is increasingly being split into two polar groups… At one pole we have the literary intellectuals – at the other the scientists“. He deplores the „gulf of mutual incomprehension“ between these two groups and wants it bridged. It is quite clear how he thinks this „bridging“ operation is to be done; the aims of his educational policy would be, first, to get as many „alpha-plus scientists as the country can throw up“; second, to train „a much larger stratum of alpha professionals“ to do the supporting research, high class design and development; third, to train „thousands upon thousands“ of other scientists and engineers; and finally, to train „politicians, administrators, and entire community, who know enough science to have a sense of what the scientists are talking about“. If this fourth and last group can at least be educated enough to „have sense“ of what the real people, the scientists and engineers, are talking about, so Lord Snow seems to suggest, the gulf of mutual incomprehension between the “Two Cultures” may be bridged. These ideas on education, which are by no means unrepresentative of our times, leave one with the uncomfortable feeling that ordinary people, including politicians, administrators, and so forth, are really not much use, they have failed to make the grade: but, at least, they should be educated enough to have a sense of what is going on, and to know what the scientists mean when they talk to quote Lord Snow“s example about the Second Law of Thermodynamics. It is an uncomfortable feeling, because the scientists never tire of telling us that the fruits of their labours are „neutral“: whether they enrich humanity or destroy it depends on how they are used. And who is to decide how they are used? There is nothing in the training of scientists and engineers to enable them to take such decision, or else, what becomes of the neutrally of science?

If so much reliance is today being placed in the power of education to enable ordinary people to cope with the problems thrown up by scientific and technological progress, then there must be something more to education than Lord Snow suggests. Science and engineering produce „knowhow“ is one more a culture than a piano is music. Can education help us to finish the sentence, to turn the potentially into a reality to be benefit of man?

To do so the task of education would be first and foremost the transmission of ideas of value, of what to do with our lives. There is no doubt about the need to transmit the knowhow but this must take second place, for it is obviously somewhat foolhardy to put great powers into the hands of people without making sure that they have a reasonable idea of what to do with them. At present, there can be little doubt that the whole of mankind is in mortal danger, not because we are short of scientific and technological knowhow, but because we tend to use it destructively, without wisdom. More education can help us only if it produces more wisdom.

The essence of education, I suggested, is the transmission of values, but, values do not help us to pick our way through life unless they have become our own, a part, so to say, of our mental make-up. This means that they are more than mere formulae or dogmatic assertions: that we think and feel with them, that they are the very instruments through which we like and interpret, and experience the world. When we think, we do not just think : we think with ideas. Our

mind is not a blank, a tabula rasa. When we begin to think we can do so only because our mind is already filled with all sorts of ideas with which to think. All through our youth and adolescence, before the conscious and critical mind beings to act as a sort of censor and guardian at the threshold, ideas seep into our mind, vas hosts and multitudes of them. These years are, one might say, our Dark Ages during which we are nothing but inheritors; it is only in later years that we can gradually learn to sort out our inheritance. First of all, there is language. Each word is an idea. If the language which seeps into us during our Dark Ages is English, our mind is thereby furnished by a set of ideas which is significantly different from the set represented by Chinese, Russian, German, or even American. Next to world, there are the rules of putting them together: grammar another bundle of ideas, to study of which has fascinated some modern philosophers to such an extent that they thought they could reduce the whole of philosophy to a study of grammar.

All philosophers and others have always paid a great deal of attention to ideas seen as the result of thought and observation; but in modern times all too little attention has been paid to the study of the ideas which from the very instruments by which thought and observation proceed. On the basis of experience and conscious thought, small ideas may easily be dislodged, but when it comes to bigger, more universal, or more subtle ideas, it may not be so easy to change them. Indeed, it is often difficult to become aware of them, as they are the instruments and not the result of our thinking just as you can see what is outside you, but cannot easily see that with which you see, the eye itself. And even when one has become aware of them it is often impossible to judge them on the basis of ordinary experience.

We often notice the existence of more or less fixed ideas in other people‟s minds-ideas with which they think without being aware of doing so. We then call them prejudices, which is logically quiet correct because they have merely seeped into the mind and are in no way the result of judgement. But the word prejudice is generally applied to ideas that are patently erroneous and recognisable as such by anyone except the prejudiced man. Most of the ideas with which we think are not of that kind at all. To some of them, like those incorporated in words and grammar, the notions of truth or error cannot even be applied, others are quit definitely not prejudices but the result of a judgment; others again are tacit assumptions or presuppositions which may be very difficult to recognise.

I say, therefore, that we think with or through ideas and that what we call thinking is generally the application of pre-existing ideas to a given situation or set of facts. When we think about, say the political situation we supply to" that situation our political ideas, more or less systematically, and attempt to make that situation. „intelligible‟ to ourselves by means of these ideas. Similarly, everywhere else we evaluate the situation in the light of our value-ideas.

The way in which we experience and interpret they would obviously depend very much indeed or kind of ideas that fill our minds. If there are mainly small, weak, superficial, and incoherent, life will appear insipid, uninteresting, petty and chaotic. It is difficult to bear the resultant feeling of emptiness, and the vacuum of our minds may only too easily be filled by some big; fantastic notion – political or otherwise – which suddenly seem to illumine everything and to give meaning and purpose to our existence. We feel that education will help solve each new problem or complexity that arises. It needs to emphasis that herein lies one of the great danger of our times.

When people ask for education they normally mean something more than mere training, something more than mere knowledge of facts, and something more than a mere diversion. May be they cannot themselves formulate precisely that they are looking for; but I think what they are really looking for its idas that could make the world, and their own lives intelligible to them. When a thing is intelligible you have a sense of participation; when a thing is unintelligible you have a sense of estrangement. „Well, I don‟t know‟, you hear people say, as an impotent protest against the unintelligibility of the world as they meet it. if the mind cannot bring to the world a set-or, shall we say, a tool box – of powerful ideas, the world must appear to it as a chaos, av mass of unrelated phenomena, or meaningless events. Such a man is like a person if a strange and without any signs of civilization, without maps or signposts or indicators of any kind. Nothing has any meaning to him; nothing can hold his vital

interest; he has no means of making anything intelligible to himself.

Questions :

21. The writer‟s contention in the passage is that the crisis in Western civilization can be explained by :
1) the presence of some flaws in its education.
2) some inherent lack of co-ordination among its various elements.
3) some basic misunderstanding in its society.
4) the energy it has devoted to education.
5) none of the above.

22. According to the writer, Lord Snow sees the intellectual life of Western society as split between
1) the educated and the uneducated
2) the government servants and the plebeians
3) scientists and literary intellectuals
4) administrators and intellectuals
5) none of the above

23. The writer seems to criticise the belief that
1) education gives rise to further complexities as the civilization progresses.
2) all new problems and complexities can be tackled and solved by more and better education.
3) people need to learn more in order to earn more
4) all of the above
5) none of the above

24. What, according to the author, would be the definition of prejudice?
1) I deas that help people to identify with new situations.
2) Fixed ideas with which people think without being aware of doing so
3) Ideas that people cull from experience in order to judge a situation.
4) Fixed ideas that see a person though the trials and tribulations of life.
5) None of the above.

25. According to Lord Snow, which of the following groups need to be educated enough to atleast understand the works of scientists and engineers?
1) politicians, administrators, and the entire community
2) politicians and literary intellecutals
3) politicians and the laymen
4) all of the above
5) none of the above

26. In the passage, the writer questions
1) the neutrality of science
2) scientists‟ stand on the neutrality of science
3) scientists‟ stand on the neutrality of their labours.
4) Lord Snow‟s assertion regarding the potential of intellectual in society
5) none of the above

27. The author‟s assertion in the passage is that education‟s main responsibility is to
1) transmit ideas of value
2) transmit technical knowledge
3) both (1) and (2)
4) transmit values regarding human and social norms
5) none of the above

22. The author believes that
1) the gulf between science and literature needs to be bridged
2) ideas should be maintained for a holistic view of society and its problems
3) words are not ideas
4) all of the above
5) none of the above

29. Which one of the following sentences is not true according to the author?
1) Values must be part of one‟s psyche
2) Values are merely dogmatic assertions
3) One identifies with values
4) Values are the means to interpret and experience the world
5) None of the above

30. Thinking is
1) being
2) application of pre-existing idea to a situation
3) knowing
4) application of fixed ideas to a situation
5) none of the above

PASSAGE – 2

The following passage was excerpted from a book called „The Extraordinary Origins of Everyday Things‟, which was published in 1987.

Because early man viewed illness as divine punishment and healing as purification, medicine and religion were inextricably linked for centuries. This notion is apparent in the origin of our word "pharmacy," which comes from the Greek pharmakon, meaning "purification through purging." By 3500 B.C. the Sumerians in the Tigris-Euphrates Valley had developed virtually all of our modern methods of administering drugs. They used gargles, inhalations, pills, lotions, ointments and plasters. The first drug catalog or pharmacopoeia, was written at that time by an unknown Sumerian physician. Preserved in cuneiform script on a single clay tablet are the names of dozens of drugs to treat ailments that still afflict us today.

The Egyptians added to the ancient medicine chest. The Ebers Papyrus, scroll dating from 1900 B.C. and named after the German Egyptologist George Ebers, reveals the trial-and-error know-how acquired by early Egyptian physicians. To relieve indigestion, a chew of peppermint leaves and carbonates (known today as antacids) was prescribed and to numb the pain of tooth extraction, Egyptian doctors temporarily stupefied a patient with ethyl alcohol.

The scroll also provides a rare glimpse into the hierarchy of ancient drug preparation. The "chief of the preparers of drugs" was the equivalent of a hed pharmacist, who supervised the "collectors of drugs," field workers who gathered essential minerals and hersb. The "preparers‟ aides" (technicians) dried and pulverised ingredients, which were blended according to certain formulae by the "preparers". And the "conservator of drugs" oversaw the storehouse where local and imported mineral, herb and animal-organ. ingredients were kept.

By the seventh century B.C., the Greeks had adopted a sophisticated mind-body view of medicine. They believed that a physician must pursue the diagnosis and treatment of the physical (body) causes of disease within a scientific framework, as well as cure the supernatural (mind) components involved. Thus, the early Greek physician emphasised something to a holistic approach to health, even if the suspected "mental" causes of disease were not recognized as stress and depression but interpreted as curses from displeased deities.

The modern era of pharmacology began in the sixteenth century, ushered in by the first major discoveries in chemistry. The understanding of how chemicals interact to produce certain effects within the body would eventually remove much if the guess work and magic from medicine.

Drugs had been launched on a scientific course, but centuries would pass before superstition was displaced by scientific fact. One major reason was that physicians, unaware of the existence of disease-causing pathogens such as bacteria and viruses, continued to dream up imaginary causative evils. And though new chemical compounds emerged, their effectiveness in treating disease was still based largely on trial and error.

Many standards, common drugs in the medicine chest developed in this trail-and-error environment. Such is the complex of diseases and human biochemistry that even today, despite enormous strides in medicine science, many of the latest sophisticated additions to our medicine chest shelves were accidential finds.

Questions:

31. The author cites the literal definition of the Greek word pharmakon in order to

1) show that ancient civilisations had an advanced form of medical science.
2) point out that many of the beliefs of ancient civilizations are still held today
3) illustrate that early man thought recovery from illness was linked to internal cleansing.
4) stress and mental and physical causes of disease.
5) emphasise the primitive nature of Greek medical science

32. It was possible to identify a number of early Sumerian drugs because

1) traces of these drugs were discovered during archaeological excavations
2) the ancient Egyptians later adopted the same meidcations
3) Sumerians religious text explained many drug making techniques
4) a pharmacopoeia in Europe contained detailed recipes for ancient drugs
5) a list of drugs and preparations was compiled by an ancient Sumerian.

33. The passage suggests which one of following as a similarity between ancient Sumerian drugs and modern drugs?

1) ancient Sumerian drugs were made of the same chemicals as modern drugs
2) like modern drugs, ancient Sumerian drugs were used for both mental and physical disorders
3) the different ways patients could take ancient Sumerian drugs are similar to the ways modern drugs are taken
4) both ancient Sumerian drugs and modern drugs are products of sophisticated chemical research
5) hierarchically organized groups of labourers are responsible for the preparation of both ancient Sumerian and modern drugs.

34. According to the passage, the seventh-century Greeks view of medicine differed from that of the Sumerians in that the Greeks

1) discovered more advanced chemical applications of drugs
2) acknowledged both the mental and physical roots of illness
3) attributed disease to psychological, rather than physical causes
4) established a rigid hierarchy for the preparation of drugs
5) developed most of the precursors of modern drugs

35. The "hierarchy" referred to in the passage in an example of

1) a superstitious practice
2) the relative severity of ancient diseases.
3) the role of physicians in Egyptian society
4) a complex division of labour
5) a receipt for ancient drug

36. In the final paragraph, the author makes which one of the following observations about scientific discovery?

1) Human biochemistry is such a complex science that important discoveries are uncommon.
2) Chance events have led to the discovery of many modern drugs
3) Many cures for common diseases have yet to be discovered
4) Trial and error is the best avenue to scientific discovery
5) Most of the important discoveries made in the scientific community have been inadvertent

37. It can be inferred from the passage that some drugs commonly used n 1987

1) were not created intentionally
2) caused the very diseases that they were designed to combat
3) were meant to treat imaginary causative evils
4) were created in the sixteenth century
5) are now known to be ineffective

38. The passage implies that

1) ancient Greek medicine was superior to ancient Egyptian medicine
2) some maladies have supernatural causes
3) a modrn head pharmacist is analogous to an ancient Egyptian conservator of drugs
4) most ailments that afflicted the ancient Sumerians still afflict modern human beings
5) the ancient Egyptians made no major discoveries in the field of chemistry.

39. In the passage, the word "holistic" most nearly means

1) psychological 2) modern
3) physiological 4) comprehensive
5) homeopathic

40. The passage indicates that advances in medical science during the modrn era of pharmacology may have been delayed by

1) the lack of a clear understanding of the origins of disease
2) primitive surgical methods
3) a shortage of chemical treatments for disease
4) an inaccuracy in pharmaceutical preparation
5) an overemphasis on the psychological causes of disease

PART - III

41. If $x^2-3xy+\lambda y^2+3x-5y+2=0$, represents a pair of straight lines, then the value of λ is

1) 4
2) 3
3) 2
4) 1
5) cannot be determined

42. If S is 150 percent of T, then T is what percent of S + T ?

1) $33\frac{1}{3}$ 2) 40
3) 75 4) 80
5) 85

43. If $x = 2k-2$ and $y=4k^2$, then what is y in terms of x?

1) x+2 2) $\frac{(x+2)2}{2}$
3) $(x+2)^2$ 4) x^2+4
5) $(x+4)^2$

44. At the first stop on his route, a driver unloaded $\frac{2}{5}$ of the packages from his van. After he unloaded another three packages at the next stop, $\frac{1}{2}$ of the original number of packages in the van remained. How many packages were in the van before the first delivery?

1) 10 2) 25
3) 30 4) 36
5) 40

45. Rs. 1,000 bonus is to be divided among three people so that Ram receives twice as much as Sam, who receives $\frac{1}{5}$ as much as Guna. How much money should Guna receive?

1) Rs. 100 2) Rs. 250
3) Rs. 375 4) Rs. 625
5) Rs. 750

46. If $x = 2 + 2^{2^3} + 2^{1^3}$, then the value of x^3-6x^2+6x is

1) 3 2) 2
3) 1 4) -1
5) none of the above

47. A jar contains black and white marbles. If there are ten marbles in the jar, then which of the following could NOT be the ratio of black and white marbles?

1) 9:1 2) 7:3
3) 1:10 4) 1:4
5) 1:2

48. A tank with capacity T litres is empty. If water flows into the tank from pipe X at the rate of X litres per minute and water is pumped out by pipe Y at the rate of Y litres per minute and X > Y. then in how many minutes will the tank be filled?

1) T/(Y-X) 2) T/(X-Y)
3) (T-X)Y 4) (X-Y)60T
5) (X-Y)T

49. Determine the ratio of the number of people having characteristic X to the number of people having characteristic Y in a population of 100 subjects from the following table

Having X and Y	**10**
Having X but not Y	**30**
Having Y but X	**20**
Having neither X nor Y	**40**

1) 4:3 2) 3:2
3) 1:2 4) 2:3
5) 3:4

50. The interest charged on a loan is Rs. x per 1000 for the first month and Rs. y per 1000 for each succeeding month. How much interest will be charged during the first 3 months on a loan of Rs. 15,000?

1) 20x + 10y 2) 10x + 20y
3) 15x + 30y 4) x + 2y
5) 30x + 15y

51. The figure below shows the network connecting cities A, B, C, D, E and F. The arrows indicate permissible direction of travel. What is the number of distinct paths from A to F?

1) 9 2) 10
3) 11 4) 12
5) none of the above

52. There are three cities : A, B and C. Each of these cities is connected with the other two cities by at least one direct road. If a traveler wants to go from one city (origin) to another city (destination), she can do so either by traversing a road connecting the

two cities directly, or by traversing two roads, the first connecting the origin to the third city and the second connecting the third city to the destination. In all, there are 33 routes from A to B (including those via C). Similarly, there are 23 routes from B to C (including those via A). How many roads are there from A to C directly?

1) 6 2) 3
3) 5 4) 10
5) 12

53. You can collect rubies and emeralds as many as you can. Each ruby is worth Rs. 4 crore and each emerald is worth of Rs. 5 crore. Each ruby weighs 0.3 kg and each emerald weighs 0.4 kg. Your bag can carry at the most 12 kg. What you should collect to get the maximum wealth?

1) 20 rubies and 15 emeralds
2) 40 rubies
3) 28 rubies and 9 emeralds
4) 16 rubies and 6 emeralds
5) none of the above

54. If x, y and z are real numbers such that, x+y+z=5 and xy+yz+zx=3. What is the largest value that x can have?

1) $\frac{5}{3}$ 2) 19
3) $\frac{13}{3}$ 4) $\frac{17}{3}$
5) None of the above

55. In the figure below, AB = BC = CD = DE = EF = FG = GA. Then ∠DAE is approximately:

1) 15° 2) 20°
3) 30° 4) 25°
5) 35°

56. A piece of paper is in the shape of a right angled triangle and is cut along a line that is parallel to the hypotenuse, leaving a smaller triangle. There was a 35% reduction in the length of the hypotenuse of the triangle. If the area of the original triangle was 34 square inches before the cut, what is the area (in square inches) of the smaller triangle?

1) 16.665 2) 16.565
3) 15.465 4) 14.365
5) 15.565

57. Four identical coins are placed in a square. For each coin, the ratio of area to circumference is same as the ratio of circumference to area. Then, find the area of the square that is not covered by the coins.

1) 16(π-1) 2) 16(8-π)
3) 16(4-π) 4) $16\,4-\frac{\pi}{2}$
5) 16π

58. The hexagon ABCDEF is regular. That means all its sides are of same length and all its interior angles are of same size. Each side of the hexagon is 2 feet. What is the area of the rectangle BCEF?

1) 4 square feet 2) $4\,3$ square feet
3) 8 square feet 4) $4+4\,3$ square feet
5) 12 square feet

59. In Motor City 90 percent of the population own a car, 15 percent own a motorcycle, and everybody owns one or the other or both. What is the percentage of motorcycle owners who won cars?

1) 5 2) 15
3) $33\frac{1}{3}$ 4) 50
5) 90

60. It takes 30 days to fill a laboratory dish with bacteria. If the size of the bacteria colony doubles each day, how long will it take for the bacteria to fill one half of the disk?

1) 10 days 2) 15 days
3) 24 days 4) 29 days
5) 29.5 days

PART – IV

Directions:

Each of the following problems has a question and two statements which are labelled (1) and (2) in which certain data ar 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 every day facts, choose :

1. If you can get the answer from (1) ALONE but not from (2) alone.
2. If you can get the answer from (2) ALONE but not from (1) alone.
3. If you can get the answer from BOTH (1) and (2) TOGETHER, but not from (1) alone or (2) alone.
4. If EITHER statement (1) ALONE or statement (2) ALONE suffices.
5. If you CANNOT get the answer from statements (1) and (2) TOGETHER, but need even more data

Questions :

61. A and B undertake a work of digging a ditch, alternatively for a day each. If A can dig a ditch in „a" days and B can dig in „b" days, will the work get done faster if A begins?

1) For a positive integer n, $n^{\frac{1}{}} + {}^{1} \equiv 1$

2) b > a $\quad a \quad b$

62. Is x+y-z+t even?

1) x+y+t is even
2) t and z are odd

63. Is (60% of a) + (40% of b) greater than 50% of (a+b)?

1) a > b 2) b > 0

64. Find the average score for all the juniors and seniors combined?

1) The average (arithmetic mean) of the scores was 85 for juniors and 89 for seniors
2) The groups are of equal size

65. If $x\ y > x\ y$

1) x < y
2) x and y are positive integers

66. Find the usual speed of the train?

1) The speed of the train is increased by 250 km/h to reach the destination 1500 km away in time
2) The train is late by 30 minutes.

67. If x + 1 > 2x?

1) 0 < x < 1 2) -1 < x < 0

68. In a certain factory, 64 orders are satisfied. What percent of the total number of orders is satisfied?

1) The total number of orders on file is 400
2) The number of orders already satisfied representated 2/5 of the total number of orders.

69. If the perimeter of the triangle ABC is $3 + 3\ 3$, then what is its area?

1) Side AC ≠ Side AB
2) Angle ABC = 30 degrees

70. What is the value of 20 percent of x?

1) 1/4 of 20 percent of x is 5
2) 4x = S, 5Y = S and Y = 80

71. A group of 89 students is divided into 3 classes, each with a different number of students. How many students are there in the largest class?

1) One of the classes has 2 fewer students than the largest
2) The other class has 21 students

72. Is Amritha"s age now greater than Brindha"s age?

1) Amritha"s age is twice as old as she was 10 years ago
2) Brinda is half as old as she will be in 10 years

73. Is t an even integar?

1) If t is divided by 4, the result is an odd integar
2) The value of t is equal to 3 times on integar

74. Guha has a total of 64 compact discs and cassettes. How many compact discs does he have?

1) If he buys 10 more cassettes, he will have 58 cassettes
2) He has 3 times as many cassettes as compact discs

75. If G and H are points on the line segment XY and G lies between X and H, then how long is XG + HY?

1) $GH = \frac{1}{3} XY$ 2) XY = 15 cm

76. In the figure that follows, is x > y?

1) PS > PQ
2) PQRS is a parallelogram

77. The lowest grade that Peter could have received on any one test is 65.

1) In the first 4 tests, all of the grades were between 39 and 93, both inclusive
2) Peter"s average in the 4 tests was 86

78. If n is an integar, is n a two-digit number?

1) 100 n is a four-digit number
2) n^2 is a four-digit number

79. At 10 A.M. on a certain day, a tree 21 feet tall casts a 14-feet shadow. At the same time, Damodar casts a shadow in the same region. How tall is Damodar?

1) Damodar is standing 18 feet away from the other tree
2) Damodar"s shadow is 4 feet long

80. What is the ratio of men to women enrolled in a certain class?

1) The number of women enrolled in the class is 3 less than half the number of men enrolled
2) The number of women enrolled in the class is 2/5 of the number of men enrolled.

PART – V

Directions:

In each of the following sentences four words or phrases have been underlined. Only one underlined part in each sentence is not acceptable in standard English. Pick up that part – (1) or (2) or (3) or (4). If there is no mistake mark (5).

81. In spite (1) of your decision against (2) him, we were (3) compelled to avail of (4) his services for a fortnight. No error. (5)

82. I have asked my aunt (1) to bring two pairs (2) of jeans from New York; one (3) for myself (4) and another for my girl friend. No error. (5)

83. My guess is (1), either (2) of these three young man should be able to handle (3) the job efficiently. (4) No error. (5)

84. He was ordered to investigate the whole affair (1) and produce (2) the most complete (3) report of his (4) findings. No error. (5)

85. The (1) elephants of India are generally (2) less bulky than Africa. No error. (3) (4) (5)

86. His college is situated (1) on a hillock about a mile further up (2) from mine. (3) (4) No error. (5)

87. One of my brother (1) is a doctor, the other (2) studies medicine in (3) the U.S.A. No error. (4) (5)

88. I had (1) ordered for (2) six units but the manufacturer could (3) supply only (4) two.

(3) (4)
No error.
(5)

89. The stranger asked me whether he may get
(1) (2) (3)
some assistance from our company.
(4)
No error.
(5)

90. The reports prove that the head of the
(1) (2)
section was incapable of leading his team.
(3) (4)
No error.
(5)

91. Neither the colour nor the size of the shirt
(1) (2) (3)
were right. No error.
(4) (5)

92. All the players of this team are friendly
(1) (2) (3)
they love each other. No error.
(4) (5)

93. The two brothers struck one another
(1) (2) (3)
at the school. No error.
(4) (5)

94. A little milk that is in the flask may be used
(1) (2) (3)
for the baby. No error.
(4) (5)

95. With each academic year
(1)
the number of applicants
(2)
are increasing in the professional colleges.
(3) (4)
No error.
(5)

96. Though he is poor but he is honest.
(1) (2) (3) (4)
No error.
(5)

97. He told the members of the staff that every
(1) (2)
one of them should carry out his task
(3) (4)
oneself. No error.
(5)

98. The crowd at the stadium clapped
(1) (2)
jubiliantly when the champion received his
(3) (4)
trophy. No error.
(5)

99. While going to the market he accompanied
(1) (2) (3)
by his friends. No error.
(4) (5)

100. If she took a taxi she would have reached
(1) (2)
the station in time. No error.
(3) (4) (5)

MBA 2012 – ANSWERS									
1. (2)	2. (5)	3. (1)	4. (2)	5. (2)	6. (1)	7. (5)	8. (4)	9. (5)	10. (2)
11. (2)	12. (1)	13. (5)	14. (2)	15. (2)	16. (3)	17. (4)	18. (2)	19. (3)	20. (3)
21. (4)	22. (3)	23. (4)	24. (2)	25. (1)	26. (1)	27. (4)	28. (1)	29. (2)	30. (3)
31. (3)	32. (5)	33. (3)	34. (2)	35. (4)	36. (2)	37. (4)	38. (3)	39. (4)	40. (1)
41. (3)	42. (2)	43. (3)	44. (3)	45. (4)	46. (2)	47. (3,5)	48. (2)	49. (1)	50. (3)
51. (5)	52. (1)	53. (2)	54. (3)	55. (*)	56. (4)	57. (3)	58. (2)	59. (3)	60. (4)
61. (2)	62. (3)	63. (3)	64. (3)	65. (3)	66. (5)	67. (4)	68. (1)	69. (5)	70. (4)
71. (3)	72. (3)	73. (1)	74. (4)	75. (3)	76. (3)	77. (5)	78. (4)	79. (2)	80. (2)
81. (4)	82. (2)	83. (3)	84. (3)	85. (4)	86. (1)	87. (2)	88. (2)	89. (3)	90. (5)
91. (4)	92. (4)	93. (5)	94. (2)	95. (3)	96. (3)	97. (2)	98. (4)	99. (3)	100. (1)

MBA 2012- DETAILED SOLUTIONS

1. (2)

Declining sales volume was a symptom of the company‟s problem; therefore, it is a Major Factor requiring a decision as to how the decline can be corrected.

2. (5)

Company location had no direct bearing on the issue discussed in the passage.

3. (1)

The production of profitable ready-mixes is the Major objective of management. Whether or not be decision was a correct one can be discerned in which management decided to go.

4. (2)

The urbanization of the population, leading to the consumption of commercially baked food products, was a Major Factor in management‟s decision to manufacturer a home baking product.

5. (2)

The relatively low start-up cost was a Major Factor considered in the decision to produce ready-mixes. The passage states that management was "particularly receptive" to the idea of marketing a ready-mix partly because the cost of additional personnel and machinery was relatively small.

6. (1)

Mr. Pendler raised the issue (in paragraph 5) of whether his company could develop a product that would be differentiated from competitor‟s products. Product differentiated from competitor‟s products. Product differentiation was a Major Objective.

7. (5)

Mr. Pendler was concerned with the cost of an advertising campaign, not primarily with its content. Although housewives were asked to recall advertising themes, the responses were not used by Mr. Pendler or Mr. Janis either in decision – making or in formulating recommendations. Therefore, the recall of advertising themes is an unimportant Issue.

8. (4)

The decision to produce ready-mixes shows that management concluded that Parks could complete with much bigger firms this conclusion is a Major Assumption not supported by the facts of the passage. Mr. Pendler‟s raised two conditions that had to be met for a "go" decision. First, Park‟s product had to be differentiated from those of its competitors. The research did not reveal how pack‟s could differentiate its product. Second, the advertising campaign had to be of a magnitude that would promote market entry. Nothing was mentioned about the magnitude decided upon; only the target audience was determined (the economy minded segment). To conclude, management‟s decision to market the product was apparently based more on intuition than on facts.

9. (5)

Nothing in the passage suggests that any special significance should be attached to the number of persons interviewed in the marketing survey.

10. (2)

A Major Factor. Here the emphasis is on cost, rather than the other side of the equation – the financing of the campaign.

11. (2)

The availability of rubber in India was a Major Factor in Allied‟s consideration to invest there.

12. (1)

The Major Objective of Allied was to determine whether to recruit local people for managerial position in India.

13. (5)

The fact that European countries favour centralized management was not a consideration in any alternative course of action.

14. (2)

The selection of management for overseas operations must consider labour force traditions. If not, conflict between management and labour may occur.

15. (2)

The high divorce rate among expatriate managers is a major consideration of Allied management in deciding whether to hire local versus American managers for position abroad.

16. (3)

The cost of transporting expatriates overseas is one part of the overall cost of relocation and it thus a Minor Factor.

17. (4)

The possibility that hiring an equal number of American expatriates and Indian nationals would cause internal conflict was a Major Assumption of management.

18. (2)

Allied"s experience with recruitment in both their African and their Brazilian operations was a Major Factor or consideration in the decision to formulate a recruitment policy for India.

19. (3)

The cost of housing expatriates overseas was one part of the overall cost of relocating and is therefore a Minor Factor.

20. (3)

Overall training was a Major Factor in the decision to hire local nationals in Brazil. Since cross-cultural training is only one part of overall training – which includes product and technical training as well – it is a Minor Factor.

41. (3)

Formula:

The conditions for a general second degree equation.

$ax^2+2hxy+by^2+2gx+2fy+c=0$

to represent a pair of straight lines is

$abc+2fgh-af^2-bg^2-ch^2 = 0$

Given equation is

$x^2-3xy+\lambda y^2+3x-5y+2 = 0$

$a = 1$; $= \frac{-3}{2}$; $b = \lambda$

$g = \frac{3}{2}$; $f = \frac{-5}{2}$; $c = 2$

∴ The condition for pair of straight line is

$abc + 2fgh-af^2-bg^2-ch^2 = 0$

$\Rightarrow 1 \times \lambda \times 2 + 2 \frac{-5}{2} \frac{3}{2} \frac{-3}{2}$

$\Rightarrow -1\frac{25}{4} - \lambda\frac{9}{4} - 2\frac{9}{4} = 0$

$\Rightarrow 2\lambda + \frac{45}{4} - \frac{25}{4} - \frac{9\lambda}{4} - \frac{18}{4} = 0$

$\Rightarrow \frac{8\lambda + 45 - 25 - 9\lambda - 18}{4} = 0$

$\Rightarrow \frac{-\lambda + 2}{4} = 0$

$\Rightarrow \frac{-\lambda + 2}{4} = 0$

$\lambda + 2 = 0 \quad \therefore \ = 2$

42. (2)

S = 150% of T

$= \frac{150}{100} \times T = \frac{3T}{2}$

Now ? % of (S+T) = T

$\frac{?}{100} \times (S + T)$ = T

$\therefore ? = \frac{100T}{S+T}$

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

$= \frac{100T}{\frac{5T}{2}} = \frac{100T \times 2}{5T}$

= 40

43. (3)

x = 2k-2

2k = x+2

$k = \frac{x+2}{2}$

Now $y = 4k^2$

$= 4\left(\frac{x+2}{2}\right)^2$

$= 4\frac{(x+2)^2}{4}$

$= (x+2)^2$

44. (3)

Let the total packages be x

In the first stop number of

Packages unloaded $= \frac{2x}{5}$

Remaining packages $= x - \frac{2x}{5}$

$= \frac{5x-2x}{5} = \frac{3x}{5}$

After unloading in the second bus stop,

Remaining packages $= \frac{3x}{5} - 3$

According to the problem,

$\frac{3x}{5} - 3 = \frac{x}{2}$

$\frac{3x-15}{5} = -$

$6x-30 = 5x$

$\therefore x = 30$

45. (4)

Let the amounts received by Ram, Sam and Guna be R, S and G respectively,

$R = 2S$

$S = \frac{1}{5}G$

$\therefore R = 2S = \frac{2}{5}G$

Now $R+S+G = 1000$

$\Rightarrow \frac{2G}{5} + \frac{G}{5} + G = 1000$

$\Rightarrow \frac{2G+G+5G}{5} = 1000$

$\Rightarrow \frac{8G}{5} = 1000$

$\therefore G = \frac{5 \times 1000}{8}$

$= 625$

$\therefore$ Guna received Rs. 625.

46. (2)

Formula :

$(a+b)^3 = a^3+b^3+3ab(a+b)$

$(a-b)^3 = a^3-b^3-3ab(a-b)$

Now $x = 2 + 2^{2/3} + 2^{1/3}$

$x-2 = 2^{2/3} + 2^{1/3}$

$(x-2)^3 = (2^{2/3} + 2^{1/3})^3$

$\Rightarrow x^3-2^3-3 \times x \times 2\,(x-2)$

$= (2^{2/3})^3 + (2^{1/3})^3 + 3(2^{2/3})(2^{1/3})(2^{2/3} + 2^{1/3})$

$\Rightarrow x^3-8-6x(x-2)$

$= 2^2 + 2^1 + 3\,2^{2/3+1/3}\,(x-2)$

$2^{2/3} + 2^{1/3} = x - 2$

$\Rightarrow x^3-8-6x^2+12x$

$= 4+2+3\times2(x-2)$

$= 6+6x-12=6x-6$

$\Rightarrow x^3-8-6x^2+12x-6x+6 = 0$

$\Rightarrow x^3-6x^2+6x-2 = 0$

$\therefore x^3-6x^2+6x = 2$

47. (3, 5)

Black	White	Ratio Black : White
9	**1**	**9 : 1**
7	**3**	**7 : 3**
2	**8**	**2 : 8 = 1 : 4**

Ratios 1 : 10 and 1:2 are not possible

48. (2)

Water filled in 1 minute = X-Y

$\therefore$ Required Time = $\frac{T}{X-Y}$

49. (1)

Having X = 30 + 10 = 40
Having Y = 20 + 10 = 30
Required ratio = 40 : 30 = 4 : 3

50. (3)

Interest for Rs. 15,000
for first month $= \frac{15,000}{1000}x$
$= 15x$
Interest for Rs. 15,000
for next two months $= 2 \times \frac{15,000}{1000}y$
$= 30y$
∴ Total interest for first 3 months
$= 15x+30y$

51. (5)

Possible paths are
A-B-F
A-D-B-F
A-D-C-B-F
A-D-E-C-B-F
Total = 4 paths

52. (1)

Let the direct roads from
A to B, B to C and C to A be x,y, z respectively
Then

$x+yz = 33$ …..(i)
$y + xz = 23$ …. (ii)

Adding

$x+y+yz+zx = 33 + 23 = 56$
$x+y+z(y+z) = 56$
$(X+Y)(Z+1) = 56$

⇒ Z+1 divides 56
From the given options z = 6 (or) z =3
then z + 1 = 7 (or) 4 divides 56
If z = 3 then equations (i) and (ii)
implies

$x + 3y = 33$
$y + 3x = 23$

Solving

$x = \frac{6}{8} = \frac{9}{2}$

Since x is direct roots from A to B

$x = \frac{9}{2}$ (a fraction) is not possible

$\therefore$ Correct answer is z = 6

53. (2)

Consider option (1)

Weight of 20 rubies and 15 emerald

$= 20 \times 0.3 + 15 \times 0.4$

$= 6 + 6 = 12$

Cost of 20 rubies and 15 emerald

$= 20 \times 4 + 15 \times 5$

$= 80 + 75 = 155$ crores

Consider option (2)

Weight of 40 rubies

$= 40 \times 0.3 = 12$ kg

Cost of 40 rubies

$= 40 \times 4 = 160$ crores

Consider option (3)

Weight of 28 rubies and 9 emeralds

$= 28 \times 0.3 + 9 \times 0.4$

$= 8.4 + 3.6$

$= 12$ kg

Cost of 28 rubies and 9 emeralds

$= 28 \times 4 + 9 \times 5$

$= 112 + 45$

$= 157$ crores

Consider option (4)

Weight of 16 rubies and 6 emeralds

$= 16 \times 0.3 + 6 \times 0.4$

$= 4.8 \times 2.4 = 7.2$ kg

Cost of 16 rubies and 6 emeralds

$= 16 \times 4 + 6 \times 5 = 94$ crores

$\therefore$ In option (2) we get maximum wealth = 160 crores

54. (3)

$x + y + z = 5$

$xy + yz + zx = 3$

Consider option (3)

$x = \frac{13}{3}$

Let $y = \frac{1}{3}, z = \frac{1}{3}$

then $x + y + z = \frac{13}{3} + \frac{1}{3} + \frac{1}{3}$

$= \frac{15}{3} = 5$

$xy + yz + zx = \frac{13}{9} + \frac{1}{9} + \frac{13}{9}$

$= \frac{27}{9} = 3$

$\therefore$ Required value $x = \frac{13}{3}$

55. **(*)**

Some data is missing in the problem.

56. **(4)**

If the hypotenuse is changed by x%, then the sides are also changed by x%

Let the breadth and height of the triangle be b and h respectively.

Then area $= \frac{1}{2}bh = 34$

New breadth = 65% of b

$= \frac{65}{100}b = \frac{13b}{20}$

New height = 65% of h $= \frac{13}{20}$

New area $= \frac{1}{2} \cdot \frac{13b}{20} \cdot \frac{13}{20}$

$= \frac{169}{400} \cdot \frac{1}{2}b$

$= \frac{169}{400}34 = 14.365$

57. **(3)**

Let the radius of each circle be r and side of the square be a.

Given

$$\frac{Area}{Circumference} = \frac{Circumference}{Area}$$

$\Rightarrow \frac{\pi r^2}{2\pi r} = \frac{2\pi r}{\pi r^2}$

$\Rightarrow \frac{r}{2} = \frac{2}{r}$

$r^2 = 4 \Rightarrow r = 2$

From the diagram

Side of the square = a = 4r = 4 × 2 = 8

New area of the square that is not covered by the coins = Area of the square – 4 × Area of the circle

$= a^2 - 4(\pi r^2)$

$= 8^2 - 4(\pi \times 2^2)$

$= 64 - 16\pi$

$= 16(4 - \pi)$

58. **(2)**

In a regular polygon with n sides interior angle

$= \frac{2n-4}{n} \times 90$

For regular hexagon, n = 6

$\therefore$ interior angle $= \frac{2 \times 6-4}{6} \times 90$

$= \frac{12-4}{6} \times 90 = 120°$

Consider the Δ AFB

Since BA = AF = 2 feet

$\Rightarrow \Delta$AFB is an isosceles triangle

$\therefore \lfloor B = \lfloor F$

Now

$\therefore \lfloor B + \lfloor F + 120° = 180°$

$\lfloor B + \lfloor F = 180\text{-}120 = 60°$

$2\lfloor B = 60°$

$\lfloor B = 30°$

Draw a perpendicular from A to FB

Clearly FH = HB

In ΔABH

$$\cos 30° = \frac{BH}{AB} = \frac{BH}{2}$$

$$\Rightarrow \frac{\sqrt{3}}{2} = \frac{BH}{2}$$

$$\therefore BH = \sqrt{3}$$

Now FB $= 2BH = 2\sqrt{3}$

Area of the rectangle BCEF = FE $\times$ FB

$= 2 \times 2\sqrt{3}$

$= 4\sqrt{3}$ Square feet **SHORT-CUT**

Regular Hexagon can be partitioned into 6 equilateral triangles with each triangle side 2 feet.

FC $= 2 + 2 = 4$

EC $= \sqrt{4^2 - 2^2} = \sqrt{16 - 4}$

$= \sqrt{12} = 2\sqrt{3}$

Area BCEF $= 2 \times 2\sqrt{3} = 4\sqrt{3}\ sq.$

59. (3)

Let the percentage of people owning car and motorcycle be A and B respectively.

Given, $n(A \cup B) = 100$

$n(A) = 90; n(B) = 15$

$n(A \cup B) = n(A) + n(B) - n(A \cap B)$

$100 = 90 + 15 - nA \cap B$

$\therefore n(A \cap B) = 105 - 100 = 5$

$\therefore$ Percentage of people owning car and motorcycle = 5%

Percentage of motorcycle owners who won cares

$= \frac{n A \cap B}{n B} \times 100$

$= \frac{5}{10} \times 100 = 33\frac{1}{3}\%$

60. (4)

Each day the size of the bacteria doubles.

In 30th day the dish is filled by bacteria.

$\therefore$ In the previous day, that is on 29th day half of the dish is filled by bacteria.

61. (2)

From statement (2)

$b > a$

This implies A complete the work faster than B.

Clear the work will get done faster than B.

Clear the work will get done faster if A begins

$\therefore$ Statement (2) alone is sufficient.

62. (3)

From statement (1) and (2)

$x + y + t$ is even

t and z are odd

$\Rightarrow$ z is odd

Now x + y-z+t = (x+y+t)-z
= even – odd
= odd

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

62. (3)

Consider statement (1) and (2) 60% of a + 40% of b

$= \frac{60a}{100} + \frac{40b}{100}$

50% of a + b $= \frac{50}{100}(a + b)$

Now a > b, b > 0

Let a = 100; b = 80

Then

$\frac{60}{100} \times 100 + \frac{40 \times 80}{100}$

= 60 + 32 = 92

$\frac{50}{100}$ 100 + 80 = 90

∴ 60% of a + 40% of b is greater than 50% of (a+b) if a > b, b > 0

64. (3)

From statements (1) and (2)

Average of juniors = 85

Average of seniors = 89

Let the group of equal size be x

Formula :

Let the two groups have average A and B and number of persons in the groups be a and b, then the average of the whole groups.

$= \frac{aA+bB}{a+b}$

In this problem, average of seniors and juniors combined

$= \frac{85x+89x}{x+x}$

$= \frac{(85+89)x}{2x} = 87$

65. (3)

From statements (1) and (2) x and y ar positive integers and x < y

$\Rightarrow 0 < \frac{x}{y} < 1$

If a number a lies between 0 and 1

then $\frac{1}{a} > a$

Example $0 < \frac{1}{4} < 1$

then $\frac{1}{\frac{1}{4}} > \frac{1}{\frac{1}{2}}$

Therefore $0 < \frac{x}{y} < 1$ implies

$\frac{1}{\frac{x}{y}} > \frac{1}{\frac{y}{y}}$

Therefore both (1) and (2) are necessary to answer the questions.

66. (5)

Let the usual speed be x and time taken be t hrs

then t $= \frac{1500}{x}$

also

t-30 $= \frac{1500}{x+250}$

The value of t is not given. So we cannot find the value of the usual speed x.

67. (4)

From statement (1)

$0 < x < 1$

Adding x on both sides

$x < x + x < 1 + x$

$\Rightarrow x < 2x < 1 + x$

$\Rightarrow 2x < 1 + x$

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

$-1 < x < 0$

This implies x is negative

Therefore $2x < x$

Since x is negative

implies $x < 1 + x$

Therefore $2x < x < 1 + x$

$\Rightarrow 2x < 1 + x$

Therefore (2) alone is sufficient

68. (1)

Consider statement (1)

Total orders = 400

Orders satisfied in the factory = 64

$\therefore$ Required percentage $= \frac{64}{400} \times 100 = 16\%$

$\therefore$ (1) alone is sufficient

(2) alone is not sufficient

69. (5)

Statement (1) and (2) are not sufficient

70. (4)

Consider statement (1)

$\frac{1}{4} \times 20\% \; of \; x = 5$

$\Rightarrow$ 20% of x $= 4 \times 5 = 20$

$\therefore$ Statement (1) alone is sufficient

Consider statement (2)

$4x = S$, $5y = S$ and $y = 80$

$4x = S = 5Y = 5 \times 80 = 400$

$\therefore x = \frac{400}{4} = 100$

Now 20 percent of x =

$$\frac{20}{100} \times x = \frac{20}{100} \times 100 = 20$$

$\therefore$ Statement (2) alone is sufficient.

71. (3)

Consider statements (1) and (2)

Let the number of student in the largest class=x
From statement (1);
Number of students in class = x – 2
From statement (2)
Othe class has 21 students
$\therefore$ Total, x + (x-2)+ 21 = 89
2x+19 = 89
$\therefore$ 2x = 89-19 = 70
$\therefore$ x = $\frac{70}{2}$= 35

72. (3)

Let the present ages of Amritha and Brindha be A and B respectively.
Froms statement (1)
A = 2(A-10)
$\Rightarrow$A = 2A-20
$\therefore$ A = 20
From Statement (2)
B = $\frac{1}{2}(B + 10)$
$\Rightarrow$ 2B = B + 10
$\therefore$B = 10
Therefore from statements (1) and (2)
A > B
The present age of Amritha is greater than Brindha"s age

73. (1)

Consider statement (1)
$\frac{t}{4}$ = odd number
$\Rightarrow$ t = 4 × odd number
= even number
$\therefore$ (1) alone is sufficient
Consider statement (2)
t = 3S Where S is an integer
Let S = 5
then t = 3S = 3 × 5 = 15 – odd
Let S = 6
then t = 3 × 6 = 18 – even
$\therefore$ (2) alone is not sufficient

74. (4)

Let the number of compact discs and cassetts be x and y respectively.
Consider statement (1)3
Y + 10 = 58
$\therefore$ Y = 58-10 = 48
Now
x + y = 64
x + 48 = 64
$\therefore$ x = 64-48 = 16

∴ (1) alone is sufficient

Consider statement (2)

$3x = y$

Also $x + y = 64$

$\Rightarrow x + 3x = 64$

$4x = 64$

$\therefore x = \frac{64}{4} = 16$

∴ (2) alone is sufficient.

75. (3)

Consider statement (1)

$GH = \frac{1}{3}XY$

Now $XG + HY = XY - GH$

$= XY - \frac{1}{3}XY$

$= \frac{2}{3}XY$

Since the value of XY is not given, (1) alone is not sufficient.

Since the length of GH not given (2) alone is not sufficient.

Consider both statements (1) and (2)

From statement (1), $XG + HY = \frac{2}{3}XY$

From statement (2). $XY = 15$ cm

$\Rightarrow XG + HY = \frac{2}{3} \times 15 = 10cm$

∴ Both are necessary.

76. (3)

Consider statements (1) and (2)

From (1) PS > PQ

Let ⌊PSQ = Z°

Since PS > PQ $\Rightarrow$ x > z

From (2)

PQRS is a parallelogram implies

$z = y$

Therefore from (1) and (2)

$x > z$

z = y

$\Rightarrow$ x > y

77. (5)

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

78. (4)

Consider statement (1)

100 n is a 4 digit integer, then n is a two digit integer.

Therefore (1) alone is sufficient.

Consider statement (2)

n^2 is a 4 digit number, then n is a two digit number

Therefore (2) alone is sufficient.

79. (2)

(1) alone is not sufficient.

Consider statement (2)

Δ ABC and Δ DEF are similar triangles.

$\frac{AB}{DF} = \frac{AC}{DE}$

$\frac{21}{DF} = \frac{14}{4}$

$DF = \frac{21 \times 4}{14}$

Height of Damodar DF = $\frac{21 \times 4}{14}$ ft

∴ Statement (2) alone is sufficient.

80. (2)

Let the number of men and women be M and W respectively.

Consider statement (1)

$W = \frac{M}{2} - 3$

Now $\frac{M}{W} = \frac{M}{\frac{M}{2}-3} = \frac{2M}{M-6}$

Since the value of M is not given, we cannot find the ratio $\frac{M}{W}$

∴ (1) alone is not sufficient

Consider statement (2)

$W = \frac{2}{5}M$

$\therefore \frac{M}{W} = \frac{M}{\frac{2M}{5}} = \frac{5}{2}$

∴ M : W = 5 : 2

∴ Statement (2) alone is sufficient.

81. (4)

delete „of"

82. (2)

changes as „pair"

83. **(2)**
changes as „any“

84. **(3)**
delete „most“

85. **(4)**
change as „than that of Africa“

86. **(1)**
change as „situate“

87. **(2)**
change as „brothers“

88. **(2)**
delete „for“

89. **(3)**
change as „can“

91. **(4)**
change as „was right“

92. **(4)**
change as „with one another“

94. **(2)**
change as „that is inside the flask“

95. **(3)**
change as „is increasing“

96. **(3)**
change as „yet“

97. **(2)**
change as „that each of them“

98. **(4)**
change as „received the trophy“

99. **(3)**
changes as „he was accompanied“

100. **(1)**
changes as „had taken a taxi“