

# XAT 2012 QUESTION PAPER

## Section A – Decision Making

**Answer question nos. 1 – 2 on the basis of the following letter.**

To the Chairman:  
Dear Mr. Sailesh,

At the December 3, 2011 meeting, it was decided that no two officers would hold positions on the same committee. It has recently come to my attention that both Chaitanya Rao and Ajit Singh will be serving in some capacity on the Cultural Committee, and both have been nominated for officer status. As you know, this is in direct disregard for the rules as voted by the Members Council last December 3, 2011. I would hope that sufficient action be taken by the Disciplinary Committee (on which committee both of the above are members) so that this problem will be remedied.

Sincerely,  
Arvind Singh

1. Which of the following is an essential flaw that the writer of the letter overlooked?
  - (1) Rao and Ajit are already serving together on the Disciplinary Committee.
  - (2) The Chairman has no power in the matter.
  - (3) The Members Council cannot pass rules limiting members.
  - (4) Rao and Ajit are yet to be confirmed as officers.
  - (5) Cultural Committee is only active during the annual festival.
2. If both the nominations are confirmed, which of the following exhaustively and reasonably, describes actions that may occur in the near future?
  - (1) Arvind resigns his membership.
  - (2) Either Rao or Ajit resigns his membership.
  - (3) Ajit resigns his committee post on the Cultural Committee.

- (4) Rao resigns his position on the Cultural Committee.
- (5) Either Rao or Ajit resigns his position from the Cultural Committee, and the other resigns his position on the Disciplinary Committee.

**Answer question nos. 3 – 5 on the basis of the information given in the following case.**

Due to increased competition, Ginger Automobiles, the Indian subsidiary of Pepper Automobile Company (PAC) reported lower sales and profits. PAC expects its new model *Limo*, developed especially for value conscious customers of India and China, would revive its fortunes. In order to prevent customers from buying competing products, PAC announced the launch of *Limo* six months before schedule. Due to unrest in its Indian supplier's plant, deliveries of essential components for its main plant was hampered, and hence it decided to launch *Limo* in China only as per the original plan. Within a short span of time, *Limo* captured 30% market share in China, which was 200% higher than expected. Indian customers who had looked forward to purchasing *Limo* were becoming increasingly unhappy to the non-availability of *Limo* in India. Ginger's dealers were worried about loss of business from the customers who might switch to other cars.

3. **Statement I:** In the Chinese market, *Baft*, and *Hebe*, are competing models in *Limo*'s target market. Due to increase in sales of *Limo* by 200%, *Baft* and *Hebe* saw their market share decline by 10%.

**Statement II:** *Baft* and *Hebe* were not desired by the customers due to their new features.

Which of the following conclusions can be most justifiably made?

- (1) I alone
- (2) II alone
- (3) Either I or II
- (4) Neither I nor II
- (5) I and II together

4. Unhappy customers will not only leave the company, but also spread negative publicity about the company. The best way, among the options below, to deal with customers is:

- (1) suggest to customers to wait.
- (2) suggest to customers to consider purchasing any of the other PAC's models available in showrooms, with a substantial discount along with gifts.
- (3) suggest to PAC to treat Indian and Chinese markets equally.
- (4) promise the top management of PAC higher sales/profit from Indian market compared to Chinese market.
- (5) suggest to the top management of PAC to manufacture essential components in either India or China.

5. Mr. Murugan from Chennai experienced the comfort of Limo during his visit to China. He was willing to deposit an approximate price of Limo to buy the first available unit from Mr. Ahmed, a dealer in Chennai, known for fair dealing. Ginger Automobile is yet to announce the actual price, and the process for allocation of the vehicles. In order to maximise his cash flow, Mr. Ahmed should

- (1) collect the amount from Mr. Murugan. Later when the delivery is delayed, blame it on PAC's problems.
- (2) collect 50% as advance and the remaining 50% after the confirmation of launch date by Ginger Automobiles.
- (3) collect the amount Mr. Murugan is willing to deposit after clarifying that delivery is subject to the company policy.
- (4) not collect the amount, but suggest to Mr. Murugan to write to Ginger Automobiles.
- (5) collect the amount and transfer it to the account of Ginger Automobiles, instead of keeping it in his personal account.

**Answer question nos. 6 – 9 on the basis of the information given in the following case.**

Tina a blast furnace expert, who works as a technology trouble-shooter stays in Jamshedpur. She has got an important assignment in Delhi, which requires six hours to complete. The work is so critical that she has to start working the moment she reaches the client's premises.

She is considering various options for her onward and return journey between Jamshedpur to Delhi.

A quick search revealed that ticket from Jamshedpur to Delhi is available in two trains. Trains 12801 and 12443 depart from Jamshedpur station at 06:45 hrs and 15:55 hrs and reach Delhi next day at 04:50 hrs and 10:35 hrs respectively. Trains 12444 and 12802 start from Delhi at 17:20 hrs and 22:20 hrs and reach Jamshedpur next day at 10:35 hrs and 20:05 hrs respectively.

Another option is to reach Ranchi by a three hour road trip and take a flight to Delhi from Ranchi. The distance between Ranchi and Delhi is covered in 105 minutes both-ways by any of the scheduled flights. Air India operates two flights, AI 9810 and AI 810, which depart Ranchi at 8:00 hrs and 15:25 hrs respectively. Flight number IT-3348 operated by Kingfisher Airlines departs Ranchi at 19:20 hrs. Return flights operated by Air India, AI 9809 and AI 809, depart Delhi at 5:50 hrs and 11:00 hrs respectively. Flight number IT-3347 operated by Kingfisher Airlines departs Delhi at 17:10 hrs.

From Tina's home Jamshedpur railway station is five minutes drive, and her destination at Delhi is 90 minutes and 30 minutes drive from airport and railway station respectively. One has to reach the airport at least one hour before the scheduled departure to complete the boarding procedure. At every railway station she loses five minutes in navigating through the crowd.

6. If Tina wants to minimize the total time out of Jamshedpur, the best option for her, from the options given below, is:

- (1) AI 9810 and return by IT 3347.
- (2) AI 9810 and return by train number 12802.
- (3) IT 3348 and return by AI 9809.
- (4) Train number 12443 and return by train number 12444.
- (5) AI 9810 and return by train number 12444.

7. Tina gets a message that her work has to be completed between 9:00 hrs. and 17:00 hrs. If she wants minimize the total time out of Jamshedpur, the best option, from the options given below, for her among the following is to go by

- (1) Train 12443 and return by Train 12444.
- (2) Train 12801 and return by Train 12802.
- (3) AI 9810 and return by AI 9809.
- (4) AI 810 and return by AI 9809.
- (5) IT 3348 and return by IT 3347.

8. Tina has to appear for an exam on 8<sup>th</sup> of January in Jamshedpur and she can start from her residence in Jamshedpur only after 16:00 hrs of the same day. Choose the option, from the options given below, that will help her to minimize the total time out of Jamshedpur.

- (1) Go by Train 12443 and return by Train 12444
- (2) Go by Train 12443 and return by AI 9809
- (3) Go by IT 3348 and return by Train 12801
- (4) Go by AI 810 and return by Train 12801
- (5) Go by AI 9810 and return by AI 9809

9. If Tina decides to minimize the in-between waiting period, the option that she should choose from the options given below, will be:

- (1) Go by Train 12801 and return by IT 3347
- (2) Go by Train 12443 and return by Train 12802
- (3) Go by AI 9810 and return by Train 12802
- (4) Go by AI 810 and return by AI 9809
- (5) Go by IT 3348 and return by AI 809

**Answer question nos. 10 – 15 on the basis of the information given in the following case.**

*Teknik Group of industries* had businesses in different sectors ranging from manufacturing, construction, fish farming and hotels. These different businesses operated as semi-independent units managed by the unit level managers. Teknik's management had an internal consultancy group called as Business Advisory Group (known internally as BAG). The 15 experts in BAG were hired personally by Mr. Teknikwala, the owner of Teknik, who wanted this core group of experts to help his organization grow fast without facing the typical growth hurdles. Most of them were specialists in fields like law, information technology, human resource management, and operations management. Almost all of them had experience spanning decades in the industry. Whenever any of the units faced any significant problems, the unit level managers would put up a request for help to BAG. The problems ranged from installation of internal MIS systems, to financial advice related to leasing of equipment, to handling of employee grievances.

Over a period of 20 years, Teknik's revenues grew from ₹ 100 crore ₹ 10,000 crore with guidance of BAG and due to Mr. Tekinwala's vision. Given its reputation in the industry, many people wanted to start their careers in BAG. Often young MBAs fresh out of business schools would apply. However their applications used to be rejected by Mr. Teknikwala, who had a preference for people with extensive industry experience.

Things changed after the unfortunate demise of Mr. Teknikwala. His daughter Miss. Teknikwali took up the family business. She was an MBA from one of the premier business schools, and was working in a different company when Mr. Tekinwala passed away. She preferred that BAG developed new ideas and therefore inducted freshly graduated MBAs from premier business schools. She personally supervised the recruitment and selection process. Now the entire group constituted of 50 specialists, out of which 35 were the old time members. She also changed the reporting relationships in the BAG group with some of the older members being made to report to the

new members. In IT team, Mr. Shiv, a newly recruited MBA, was made in-charge.

For the older members it was a shock. However, as most of them were on the verge of retirement, and it would be challenging to search for new jobs while competing with younger professionals, they decided to play along.

After one month, all business units were caught up in the ERP fever. This was an idea pushed by Ms. Teknikwali who the need the need to replace the old legacy systems with latest ERP system integrating all the units of Teknik. This was heavily influenced by her experience in the previous where an ERP system was already up and running. Therefore she was not aware of the difference between installing an ERP system and working on an already installed one.

The ERP implementation in Teknik Group required extensive coordination with senior level managers of all units and it represented an extra work for those who were involved. This coordination was required to understand the different work processes and the users' requirements. This coordination activity was being extensively managed by the old timers as they were familiar with internal processes and people in the different units. An external consultant was also hired for customization and implementation.

After two months, BAG teams had to fortnightly present their progress to Ms. Teknikwali's team. In the last meeting Ms. Teknikwali was dissatisfied. She explained her thinking that since ERP impacted every aspect of the business, the roll out had to be done faster. She wanted Mr. Shiv to get the implementation completed ahead of schedule. In the meeting she asked Mr. Shiv to get the people in IT team to be more productive. Not willing to disagree, Mr. Shiv committed to a roll-out schedule of complete ERP system in 6 months instead of earlier decided 14 months.

Next day, Mr. Shiv presented the revised project milestone to BAG members. He told them that in order to meet the deadline, the members were expected to work on week-ends till the completion of the project. Along with that, they were also expected

to maintain their earlier standards of delivery time and quality for the normal trouble-shooting and internal advisory work. Mr. Shiv also pointed out that anyone whose performance did not meet the expectations would be subjected to formal disciplinary action.

The meeting ended without any member commenting on Shiv's ideas, although Mr. Shiv heard a lot of mumbling in the corridor. Over the week, Shiv noticed that the members seemed to avoid him and he had to make extra effort to get ideas from them. After a fortnight Shiv reviewed the attendance register and found the Mr. Lal, an old time member, had not come during the week-ends and certain decisions were held up due to lack of inputs from Mr. Lal. Mr. Shiv issued a written reprimand to Mr. Lal. He was speechless on receiving the reprimand but kept silent.

It has been three days since that incident. Some of the senior members had put in request for transfer to other business units. It was rumoured that four senior legal experts had agreed to an offer from a law firm. Other senior members would sporadically come in late to work, citing health reasons. Almost all senior members now wanted a weekly work-routine to be prepared and given to them in advance so that they could deliver as per the schedule. This insistence on written communication was a problem as urgent problems or ad-hoc requests could not be foreseen and included. Also normal services to other business units were being unattended to, and there were complaints coming from the unit heads.

**10.** Which of the following could have been a better response of Mr. Shiv to Ms. Teknikwali's request to re-schedule the ERP implementation?

- (1) Look at industry best practices regarding fast-tracking of ERP projects and then commit to a new deadline.
- (2) Consult the external consultant who was involved with ERP customization and implementation.
- (3) Create a smaller team of all the new recruits of BAG and present the idea to them alone.

- (4) Eliminate the reliance on external consultants as they would be slow.
- (5) Present the idea to BAG members and ask them to look at the feasibility of the entire plan.

**11.** Which of the following can be identified as the immediate cause for the problems in BAG?

- (1) Ms. Teknikwali's decision to appoint Mr. Shiv as project lead for ERP implementation.
- (2) The incompetence of the consultant who was implementing the ERP project.
- (3) Lack of information about what was happening in the ERP project.
- (4) Infighting between new recruits and the older members of BAG group.
- (5) Unilateral decision making by Shiv.

**12.** How should Mr. Shiv cope with the situation now? Choose the best option, considering Mr. Shiv's career would be at stake if the ERP project fails, and assuming that for carrying out the options, he has the necessary authority to do so.

- (1) Resign from BAG. The project cannot be done as per the re-scheduled time-table. Get a job in another company based on BAG's brand-name.
- (2) Inform Ms. Teknikwali about the situation and get help from her to deal with the old time members. Some old members need to be fired so that others are also disciplined.
- (3) Align the new members of the BAG group to his side by promising them rewards at end of the project. Obtain approval from Ms. Teknikwali for the same.
- (4) Develop work-routines aligned to the ERP project requirements. Hire extra resources for dealing with other ad-hoc requirements and for the ERP project requirements.
- (5) Create a joint team of old members and new members within BAG to take care of ad-hoc requirements. They would be socialized in out-bound programmes like mountaineering

etc., which will be conducted during weekends.

**13.** Of all the problems being faced in BAG, which of the following is neither discussed nor hinted at?

- (1) Ms. Teknikwali's lack of faith on older members to implement new ideas.
- (2) The inability of the younger members to work along with the older members of BAG.
- (3) Mr. Shiv's intention to impress Ms. Teknikwali by agreeing to a tougher deadline.
- (4) Ms. Teknikwali's lack of understanding of the complexity of an ERP implementation.
- (5) Mr. Shiv's lack of understanding of the sensitivities of the older members of BAG.

**14.** After her father's demise, the best way Ms. Teknikwali could have gone about dealing with BAG group would have been to:

- (1) Discuss with the members as to what their views were about the company and solicit ideas on how to make it grow further.
- (2) Retire the entire team and hire a fresh team according to her criteria and her requirements.
- (3) Hire an external consultant who would have interacted with the BAG members on her behalf.
- (4) Ask the unit managers about the performance of the BAG group's performance and productivity. After that have discussion with BAG members about unit managers' performance.
- (5) Break down BAG into different sub-groups. It would be easy to tackle one sub-group at a time and do what she wanted to achieve.

**15.** It can be inferred from the above case that implementation of an ERP package in an organization requires creation of a team that has:

- (1) a mixture of experienced employees and newly graduated employees

- (2) only young people with education in top schools and colleges
- (3) sufficient number of people who are networked with powerful stakeholders in the organization
- (4) right amount of problem solvers along with those who are abreast of the latest ERP technology
- (5) people who have been involved with operations for a long duration of time along with people who are aware of the latest in ERP technology

**Answer question nos. 16 – 17 on the basis of the information given in the following case.**

Vivekananda Memorial Elocution Competition (VMEC) in Viswavijay Public School (VPS) has a history of forty years. Apart from the founder's day and annual day celebrations, it is the most important event of the school.

In recent times, due to the increased popularity of reality shows on television channels, and for various other reasons, the elocution competition lost its appeal. Interest of both students and parents has been eroding over a period of time. To ensure sufficient audience, Mr. Ivan, Head of English Department, introduced choral recitation for junior section as a part of elocution competition. Three classes, each consisting of forty students, get short-listed for the final performance of choral singing on the day of VMEC. Most of the parents and family members of these students attend the function to encourage them. This initiative increased the number of people attending the elocution competition.

Some teachers are unhappy with the emphasis given on the elocution competition, since they are expected to be present at the school on the day of competition, which normally happens on a weekend to accommodate the working parents. The teachers were not granted leave on the day of VMEC and they used to be unhappy regarding this aspect.

**16.** Ms Shabina, the principal of VPS, is aware that some of her teachers are unhappy. She wants to

be seen as fair and just. Which option is the best one that she should exercise?

- (1) introduce separate music and dance competitions in same format as the elocution competition.
- (2) appropriately compensate those teachers who volunteer to come for the extra day
- (3) appoint a committee of teachers, parents and management representatives to come up with possible suggestions within a deadline
- (4) appoint a committee of teachers to come up with possible suggestions, and ensure that majority of committee members are staunch supporters of the current practices.
- (5) exercise the authority of the principal because she wants to retain all traditions.

**17.** A group of unhappy teachers have come up with a list of action plans for the consideration of their colleagues. The action plans are listed below.

- I. Exposing Mr. Ivan's intentions behind the inclusion of choral recitation.
- II. Conduct an open house discussion to gauge the unhappiness and to identify possible solutions.
- III. Introduce music and dance competition in same format as elocution competition
- IV. Demand compensation for their work on the day of VMEC.

Mr. Zacharia, one of the senior teachers and a well wisher of VPS, is asked to go through the action plans and make recommendations that benefits VPS the most. He would recommend:

- (1) Options I and II
- (2) Options II and IV
- (3) Options I and III
- (4) Options I and IV
- (5) Options I, II, and IV

**Answer question nos. 18 – 20 on the basis of the information given in the following case.**

Dev Anand, CEO of a construction company, recently escaped a potentially fatal accident. Dev had failed to notice a red light while driving his car and attending to his phone calls. His well-wishers advised him to get a suitable replacement for the previous driver Ram Singh, who had resigned three months back.

Ram Singh was not just a driver, but also a trusted lieutenant for Dev Anand for the last five years. Ram used to interact with other drivers and gathered critical information that helped Dev in successfully bidding for different contracts. His inputs also helped Dev to identify some dishonest employees, and to retain crucial employees who were considering

attractive offers from his competitors. Some of the senior employees did not like the informal influence of Ram and made it difficult for him to continue in the firm. Dev provided him an alternative job with one of his relatives.

During the last three months Dev has considered different candidates for the post. The backgrounds of the candidates are given in the table below.

Name	Age	Educational Qualification	Experience	Expected Salary(₹)	Remark
Sunder	32	Post graduate	Seven years of driving experience	18,000 per month	Ex-employers are highly satisfied. Their only concern is about his tendency to switch jobs after every six months.Enjoys the newness in every job but tends to lose interest after six months. Not willing to commit for any more than six months
Mani	23	Studied up to Standard IX	One year	8,000 per month	Claims to have more than one year of experience, but can't provide any certificate to substantiate it. He has received a hike of ₹ 2,000 last month on account of his good performance as a driver.
Chintan	44	Graduate	20 years	20,000 per month	Working as a driver for the last one year after losing his previous job of a stenographer. He has been forced to take up the job of a driver.
Bal Singh	40	Litreate	More than 20 years	15,000 per month	Cousin of Ran Singh. Substituted Ram as Dev's driver whenever Ram was on leave. Currently working as a driver with Dev's in-laws. Strongly recommended by Ram. His knowledge and contacts in the firm is as good as Ram's.
Chethan	38	Standard XII	10 years	12,000 per month	Working as a temporary driver with Dev's major competitor for the last three years. The competitor has offered Chethan's service to Dev on a temporary basis. Chethan has also expressed his willingness to work on a long term basis, provided he is given an annual increment of ₹ 500, which is reasonable as per the market condition.

Dev is primarily looking for a stable and trustworthy driver, who can be a suitable replacement for Ram. His family members do not want Dev to appoint a young driver, as most of them are inexperienced. Dev's driver is an employee of the firm and hence the appointment has to be routed through the HR manager of the firm. The HR manager prefers to maintain parity among all employees of the firm. He also needs to ensure that the selection of a new driver does not lead to discontent among the senior employees of the firm.

18. From his perspective, and taking into account the family's concerns, Mr. Dev would like to have

(1) Chethan                      (2) Chintan  
(3) Bal Singh                    (4) Mani  
(5) Sunder

19. In order to resolve the conflicting preferences, one of Dev's friends suggested Dev, his family members and the HR manager to identify their most and the least preferred candidates without considering the concerns of other stakeholders.

- I. Dev's most and least preferred candidates: Bal Singh and Chetan respectively
- II. Family members' most and least preferred candidates: Bal Singh and Chintan respectively
- III. HR manager's most and least preferred candidates: Chethan and Bal Singh respectively

Which of the above three statements is/are in conformity with the information provided in the passage?

(1) Option I  
(2) Option II  
(3) Options I and II  
(4) Options II and III  
(5) Option I, II and III

20. Who among the following five candidates is most likely to be rejected by the GM (HR)?

(1) Chethan                      (2) Chintan  
(3) Bal Singh                    (4) Mani  
(5) Sunder

**Answer questions from. 21 to 23 based on the case given below.**

Ethical – a person is called unethical, when he deviates from principles. The principles and their use is often guided by two definitions:

*Moral: society's code for individual survival*

*Ethics: An individual's code for society survival*

Naresh was a small time civil contractor in a small city. His major clients were the residents who wanted ad-hoc work like painting, building extensions to be done. His just prices had made him a preferred contractor for most of the clients who preferred him over other civil contractors. Always he followed the principle that client had to be kept happy – only by doing so it would be a win-win situation for both. However due to the unpredictability of such orders from residents, Naresh used to be idle for substantial part of the year. As a consequence, he could not expand his business.

His two children were growing up and his existing business could not support their expenses. The medical expense of his elderly parents was another drain on his resources. The constant rise of prices in medical care and medicines was another issue. For Naresh, family's concern was predominant. Naresh was, therefore, under pressure to expand his business. He was the sole earning member of his family, and he had to ensure their well being. He thought that by expanding his business, not only would he be able to care for his family in a better way, as well as offer employment to more number of masons and labourers. That would benefit their families as well. Naresh drew the boundary of his society to include himself, his family members, his employees and their family members.

For expansion, the only option in the city was to enlist as a contractor for government work. Before deciding, he sought advice from another contractor, Srikumar, who had been working on government projects for a

long period of time. Srikumar followed the principle of always helping others, because he believed that he would be helped back in return some day. Srikumar had just one advice "The work is given to those who will win the bidding process and at the same time will give the maximum bribe. Prices quoted for work have to include bribes, else the bills will not get cleared and the supervisors will find multiple faults with the execution of work. This ensures survival and prosperity for contractors".

When asked about other contractors, Srikumar said "The government contractors are like a micro-society in themselves, almost like a brotherhood. Within that, they are highly competitive; however towards any external threat they are united to ensure no harm happens to any of their members".

**21.** Naresh decided to work as a government contractor. Following Srikumar's advice, he inflated the prices so that he could pay the bribes out the bills received.

- (1) Naresh is now totally unethical.
- (2) Naresh cannot be called totally ethical.
- (3) Naresh can be called ethical when it suits him.
- (4) Naresh is ethical to some extent.
- (5) Naresh is being totally ethical.

**22.** A new supervisor had joined a government department where both Naresh and Srikumar were bidding for work. During the bidding process for a particular project, in an open meeting with all contractors and officers from the department, he produced a document which had the rates at which Naresh had worked for private clients for similar building related work. He accused Naresh and Srikumar of over-pricing for government work and threatened to disqualify them from the bidding process, if the rates are not brought down. Faced with that situation, Naresh gave a written reply that "I use materials of inferior quality for private work, and that is the reason for price difference". Srikumar supported Naresh in the meeting by saying that he had seen

Naresh's work and he agreed. In this situation, it can be concluded that:

- (1) both Naresh and Srikumar are unethical.
- (2) Naresh is unethical while Srikumar is not.
- (3) both Naresh and Srikumar are ethical.
- (4) Naresh is ethical to a large extent, but no conclusion can be made about Srikumar.
- (5) Srikumar is unethical, but no conclusion can be made about Naresh.

**23.** Lankawala, another contractor, when faced with the new supervisor's demand to reduce prices for government work, asked him to guarantee that no bribes would be taken, and only then prices would be reduced. This was said in front of everyone. At this the supervisor forced Lankawala out of the meeting and threatened to black-list him. Lankawala did not say anything and walked away. Blacklisting of a contractor by one government department implied that Lankawala would not be able to participate in any government departments' works.

In late evening, the city was abuzz with the news that the supervisor's dead body was seen on the railway tracks. In the investigations that followed, no one who attended the meeting recounted the happenings in the meeting to the police. Getting involved in murder cases could lead to unpredictable outcomes such as becoming the potential suspect, or an accessory to the crime. Furthermore, cases could drag on for years, and one would have to appear in court as witnesses in response to court's summons. This, for a contractor, was a serious threat to his business due to the disruptions created. However, Naresh wanted to speak out but was pressurized by Srikumar and other contractors not to, and as a result he did not. Due to this, the case was closed unresolved with no one found guilty.

In this situation, it can be concluded that:

- (1) Srikumar is immoral, but ethical, while Naresh is not unethical.
- (2) Naresh is ethical and moral, while other contractors are immoral and unethical.
- (3) Naresh, Srikumar and other contractors are both immoral and unethical.
- (4) Other contractors are moral, and they prevented Naresh from being immoral.
- (5) Other contractors are unethical, but no conclusion can be made about Naresh.

**Answer question nos. 24 – 25 on the basis of the information given in the following case.**

Saral Co. is operating in seven north-eastern states of the country. The organization has a history of participative decision making, wherein people deliberate openly about pros and cons of every important decision, and a broad consensus is taken before taking the final decision. In Saral Co. every employee gets a salary proportional to the sales achieved. A new General Manager (GM) joined during the beginning of this month and challenged the organization's sole focus on sales to determine salaries. He urged the top management to include two more additional parameters in determining the salaries of the employees, viz. collection of information about competitors and the quality of relationship with the retailers.

**24.** Manohar, the highest earning employee for the last three years, vehemently opposes the GM's proposal. Which of the following could be most likely reason for him to oppose the proposal?

- (1) He considers the proposal as a serious threat to his favourable position in Saral Co.
- (2) He is not interested in collecting the information regarding competitors.
- (3) No clarity regarding the relative importance of the three parameters.
- (4) He is not interested in maintaining quality relationship with retailers.
- (5) He may need to work harder to earn the highest salary.

**25.** The top management of Saral Co. refused to implement the proposal of new GM from the beginning of next month, which of the following could be the most justified reason for the management's refusal?

- (1) To ensure that no manager will get credit for a major change soon after joining.
- (2) To avoid attracting criticism for their failure to implement a similar scheme.
- (3) His past experience is limited to seven north-eastern states only.
- (4) The GM is new to the organization and he would require some time to implement the new plan.
- (5) The top management would need time to deliberate and get consensus.

## Section B – English Language Ability and Logical Reasoning

26. "On a wing and a prayer the Indian team landed in Heathrow to take on their formidable opponents".

From the above sentence it can be inferred that the Indian team was

- (1) high in spirits    (2) well prepared  
(3) over confident    (4) under prepared  
(5) buoyant

27. It \_\_\_\_\_ not look like a great deal today, but back then it was a coup: no man before \_\_\_\_\_ to import tea directly into Ireland.

**The option that will best fill the blanks in the above sentences would be:**

- (1) may, has dared  
(2) may, had dared  
(3) might, have dared  
(4) might, have ever dared  
(5) may, ever dared

28. "It was AC Milan's success in Europe in the sixties that introduced the 'libero' as the Italian default and, a quarter of a century later, it was AC Milan's success in Europe that killed it off."

Which of the following was **not** implied in the above sentence?

- (1) AC Milan was successful in Europe in the sixties with the help of a 'libero'  
(2) AC Milan was successful in Europe in the late eighties without a 'libero'  
(3) The 'libero' was an Italian default for almost a quarter of a century.  
(4) AC Milan was not successful in Europe for almost a quarter of a century.  
(5) The Italians seldom used a 'libero' since late eighties.

29. Choose the odd one:

- (1) Chaos / Order    (2) Fact / Fiction  
(3) Virtue / Vice    (4) Study / Analyse  
(5) Light / Darkness

30. The 2001 census showed a sharp fall in the litereacy rate compared to 1991, but an increase in the litereacy rate by 2006 suggests that between 1991 and 2006 India progressed in terms of litereacy rate.

**Which of the following statements, if true, best refutes the above argument?**

- (1) One of the causes of more litereacy is the increased population growth rate.  
(2) Although there was no census in 2006 the information about the litereacy rate is reliable.  
(3) Many of those who were illiterate in 2001 become literate by 2006.  
(4) The rate of fall in litereacy rate between 1991 and 2001 was more than the rate of rise in litereacy rate between 2001 and 2006.  
(5) The rise in litereacy rate between 2001 and 2006 was due to persistent campaign on television and FM radio.

31. Ravindra Dubey was guilty of embezzlement. It means that Ravindra Dubey

- (1) did not pay his bills.  
(2) misappropriated assets he was entrusted with.  
(3) engaged in circulating black money in the economy.  
(4) cheated on his spouse.  
(5) misreported educational qualification.

32. Read the sentences and choose the option that best arrange them in a logical order.

- A. Some of these are tangible while others are not.  
B. The micro factors look at brand building, product development, competition, pricing, decision making within organizations etc.  
C. Another way to classify these factors is to distinguish which of them are macro in nature and which of them are micro.

- D. The macro factors comprise government policies, state of the economy, changing demographics etc.
- E. The factors influencing forecasts include social, technological, economic, political, religious, ethnic, governmental, and natural factors.

- (1) E-A-C-D-B           (2) E-C-B-D-A
- (3) A-E-C-D-B           (4) D-B-A-C-E
- (5) E-D-B-A-C

**Read the following passage and provide appropriate answers for the questions 33 – 37.**

There is an essential and irreducible ‘duality’ in the normative conceptualization of an individual person. We can see the person in terms of his or her ‘agency’, recognizing and respecting his or her ability to form goals, commitments, values, etc., and we can also see the person in terms of his or her ‘well-being’. This dichotomy is lost in a model of exclusively self-interested motivation, in which a person’s agency must be entirely geared to his or her own well-being. But once that straitjacket of self-interested motivation is removed, it becomes possible to recognize the indisputable fact that the person’s agency can well be geared to considerations not covered – or at least not fully covered – by his or her own well-being. Agency may be seen as important (not just instrumentally for the pursuit of well-being, but also intrinsically), but that still leaves open the question as to how that agency is to be evaluated and appraised. Even though the use of one’s agency is a matter for oneself to judge, the need for careful assessment of aims, objective, allegiances, etc., and the conception of the good, may be important and exacting.

To recognize the distinction between the ‘agency aspect’ and the ‘well-being aspect’ of a person does not require us to take the view that the person’s success as an agent must be independent, or completely separable from, his or her success in terms of well-being. A person may well feel happier and better off as a result of achieving what he or she

wanted to achieve – perhaps for his or her family, or community, or class, or party, or some other cause. Also it is quite possible that a person’s well-being will go down as a result of frustration if there is some failure to achieve what he or she wanted to achieve as an agent, even though those achievements are not directly concerned with his or her well-being. There is really no sound basis for demanding that the agency aspect and the well-being aspect of a person should be independent of each other, and it is, I suppose, even possible that every change in one will affect the other as well. However, the point at issue is not the plausibility of their independence, but the sustainability and relevance of the distinction. The fact that two variables may be so related that one cannot change without the other, does not imply that they are the same variable, or that they will have the same values, or that the value of one can be obtained from the other on basis of some simple transformation.

The importance of an agency achievement does not rest entirely on the enhancement of well-being that it may indirectly cause. The agency achievement and well-being achievement, both of which have some distinct importance, may be casually linked with each other, but this fact does not compromise the specific importance of either. In so far as utility – based welfare calculations concentrate only on the well-being of the person, ignoring the agency aspect, or actually fails to distinguish between the agency aspect and well-being aspect altogether, something of real importance is lost.

**33.** According to the ideas in the passage, the following are *not* true *expect*:

- (1) The value of a person’s well-being cannot be obtained from the value of her agency.
- (2) A person’s agency aspect is independent of her well-being aspect.
- (3) A person’s agency is important because her well-being must depend on her agency.
- (4) A person’s agency must be entirely geared towards her own well-being.

(5) A person's well-being will be dependent on her agency in all circumstances.

34. In the case of Japan, there is a strong empirical evidence to suggest that systematic departure from self-interested behavior, in the direction of duty, loyalty and goodwill have played a substantial part in industrial success.

Which of the following is closest to the ideas presented in the passage?

- (1) Japanese are duty bound selfless people.
- (2) The sense of well-being of the Japanese people gets consistently enhanced due to this systematic departure from the self-interested behavior.
- (3) Had there been no enhancement of their own well-being, the Japanese people would have not been dutiful.
- (4) Ability to achieve their country's objectives may have enhanced the sense of well-being of Japanese people. However the agency of the Japanese people in their industrial success is probably derived from factors beyond this sense of well-being.
- (5) Japanese people's adherence to ethos of duty, loyalty and goodwill can well be explained within the paradigm of self-interested behavior.

35. Of the options presented below, which one is the best example for the ideas propounded in the passage?

- (1) 'Change for Equality' was a campaign by women of Iran to remove discrimination against women in their country. Activities of the movement were attacked and jailed by the government, but the campaign continued.
- (2) In January 2011, the Egyptian people came out against the regime to topple it. Their grievances included police atrocities, state emergency laws, lack of free election, and lack of freedom of speech, corruption,

unemployment, food price inflation and low minimum wages.

- (3) A worker immolated himself to highlight injustice being perpetrated by the management against the employees in the company.
- (4) The factory workers carried on with the strike in demand for increased wages, even though they were not paid wages for the duration they were on strike.
- (5) A politician went on a hunger strike against corruption which not only galvanized the state government in enacting new laws, but also increased his image in the minds of the voters.

36. Read the sentences given below and choose the option that is best in accordance with the ideas in the passage.

- I. There is a need to distinguish between the agency aspect and the well-being aspect of a person.
- II. A person can be conceptualized in terms of either agency or well-being.
- III. A person is important, not just instrumentally, for the pursuit of well-being

- (1) I only                      (2) II only  
(3) III only                    (4) I and III  
(5) II and III

37. The idea of agency, as used in the passage, is implied in all the options given below, except:

- (1) A student arguing for a grade revision
- (2) A lawyer arguing the case for his rich client
- (3) A politician on *dharma* to gain publicity
- (4) A hungry child crying for food
- (5) An ascetic praying for world peace

38. Which of the following sentences is grammatically incorrect?

- (1) Bats are able to fly in the dark.

- (2) Bats can fly in the dark
- (3) Bats have the ability to fly in the dark.
- (4) Bats cannot fly in the dark if it rains.
- (5) Bats have the ability of flying in the dark, if it does not rain.

39. Alfredo, Diego and Lionel are discussing Argentinean football.

Alfredo: Argentina was a football powerhouse.

Diego: Argentina is a football powerhouse.

Lionel: Argentina will be a football powerhouse.

**Which of the following cannot be inferred from the above conversation?**

- (1) Lionel is optimistic about the future.
- (2) Alfredo, Diego and Lionel may disagree on certain things.
- (3) Diego views the present positively.
- (4) Alfredo completely disagrees with Diego.
- (5) Alfredo has positive feelings about the past.

40. Choose the grammatically correct sentence from the options given below.

- (1) Surprisingly, given the recent labour problems in the factory, the factory manager has enjoyed considerable support from they who had previously challenged his leadership.
- (2) Surprisingly, given the recent labour problems in the factory, the factory manager has enjoyed considerable support from them who had previously challenged his leadership.
- (3) Surprisingly, given the recent labour problems in the factory, the factory manager has enjoyed considerable support from he who had previously challenged his leadership.
- (4) Surprisingly, given the recent labour problems in the factory, the factory manager has enjoyed considerable support from

those who had previously challenged his leadership.

- (5) Surprisingly, given the recent labour problems in the factory, the factory manager has enjoyed considerable support from that who had previously challenged his leadership.

41. Ethologists, people who study animal behavior, have traditionally divided an organism's actions into two categories: learned behavior (based on experience) and instinctive behavior (based on genotype). Some current scholars reject this distinction, claiming that all behavior is a predictable interaction of experience and genotype.

**Which of the following, if true, most strengthens the arguments made in the sentence above?**

- (1) All organisms with identical genotypes and identical experience sometimes respond differently in different situations.
- (2) All organisms with different genotypes and identical experience always respond identically in identical situations.
- (3) All organisms with similar genotypes and similar experience always respond differently in identical situations.
- (4) All organisms with identical genotypes and identical experience always respond identically in identical situations.
- (5) All organisms with identical genotypes and different experience always respond identically in identical situations.

42. The benefits of psychotherapy result not only from the advice the therapist gives but also from the supportive relationship offered to the patient. Even though this relationship may cost large amounts of money over many years, most patients interpret the therapist's concern for them as genuine and identify this caring relationship as the primary factor in improving their mental health. However, recent studies have

found that only eight percent of therapist/patient relationships continue after the patient terminates formal paid visits.

**Which of the following is in accordance with the ideas contained in the passage? Choose the best option.**

- (1) therapists are equally concerned with moneymaking and their patients' well-being.
- (2) reading published articles of reputed psychotherapists will hardly be beneficial.
- (3) therapists can always treat mental illness without the use of prescription drugs.
- (4) therapists who terminate relationships are likely to improve mental health of their patients.
- (5) eight percent of patients will continue to improve after termination of therapy.

**43.** Most of the Asian countries have trade-deficit with China. Bangladesh's trade deficit with China this year has increased by 35%. Despite large increases in exports to China, Indonesia's trade deficit with China continues to increase. So does that of South Korea, home of Samsung Electronics, one of the world's largest manufacturers of electronic gadgets.

**Which of the following, if true, would be most inconsistent with the above passage?**

- (1) China is the largest manufacturer of parts of electronic gadgets and Samsung Electronics imports parts for their gadgets from China.
- (2) Exports to Bangladesh are insignificant in proportion of China's total exports.
- (3) Exports to Indonesia from China decreased.
- (4) Indonesia's chief exports are natural resources.
- (5) China has trade deficit with Iran.

**44.** All who studied commerce enjoy sports. No tax consultant enjoys sports. All those who enjoy sports love classical music.

**If the above sentences are true, which of the following also must be true?**

- (1) No one who enjoys classical music is a tax consultant by profession.
- (2) Every tax consultant enjoys classical music.
- (3) No tax consultant enjoys classical music.
- (4) No tax consultant studied commerce.
- (5) No one who studied commerce enjoy classical music.

**45.** The head \_\_\_\_\_ was annoyed to see a \_\_\_\_\_ in the soup.

**The option that would best fill the blanks in the above sentence would be:**

- (1) chief, house fly
- (2) chef, housefly
- (3) chief, house-fly
- (4) chef, house fly
- (5) chef, house-fly

**46.** Which word is the opposite of the word 'hypothesize'?

- (1) posit
- (2) propose
- (3) conjecture
- (4) refute
- (5) speculate

**47.** Read the sentences and choose the option that best arranges them in a logical order.

- A. In fact, it is considered as a dumping ground for unwanted people in quite a few organizations.
- B. In many parts of the country, traditional castes such as *Kothari*, *Kotwal*, *Bhandari* and *Bhandarkar* have for generations been dealing in procuring, stocking, distributing goods and merchandise.
- C. This is due to the fact that Indian traders have been trading with many parts of the world.
- D. However, though the concept of warehousing has been prevalent for over 2000 years, the warehouse has not yet obtained due recognition in modern times.

E. The concept of warehousing or stores function is not new in India.

- (1) E-A-C-D-B           (2) E-C-B-D-A  
(3) A-E-C-D-B           (4) D-B-A-C-E  
(5) E-D-B-A-C

**48. Concurrence means all of the following except:**

- (1) Agreement           (2) Accord  
(3) Consensus           (4) Coincidence  
(5) Harmony

**49. Read the sentences and choose the option that best arranges them in a logical order.**

- i. All it has to do is to drive up the inflation rate-examples are the damage Lyndon Johnson's inflationary policies did to the US economy and the damage which consistently pro-inflationary policies have done to the economy of Italy.
- ii. It is easy, the record shows, for a government to do harm to its domestic economy.
- iii. Contrary to what economists confidently promised forty years ago, business cycles have not been abolished.
- iv. They still operate pretty much the way they have been operating for the past 150 years.
- v. But there is not the slightest evidence that any government policy to stimulate the economy has impact, whether that policy be Keynesian, monetarist, supply - side or neoclassical.

- (1) (iii)-(iv)-(ii)-(i)-(v)  
(2) (iii)-(v)-(ii)-(i)-(iv)  
(3) (ii)-(iv)-(i)-(v)-(iii)  
(4) (ii)-(i)-(iii)-(iv)-(v)  
(5) (ii)-(i)-(v)-(iii)-(iv)

**50.** When income tax rates are reduced, there is an increase in taxable income, and an increase in

taxable income results in increased total income tax revenues for the government.

**Which of the following is *analogues* to the argument above in terms of its logical features?**

- (1) If the city municipal corporation increases taxes on property by 1% it will raise tax revenues, which can be used for garbage disposal management.
- (2) The Leader of the Opposition at the Parliament argued that a restriction on the import of Chinese manufacturing products will increase the sales of Indian manufacturing products.
- (3) An advertisement using more than 25 words of text will not be read, and when an advertisement is not read, the product is not sold. Therefore, the fewer words an advertisement has, the more effective it will be in promoting its product.
- (4) The balance of payment of a country will improve if the country reduces its imports and increases exports.
- (5) Citizens earning more than 15 lakh rupees per annum pay at an increased tax rate of 40% Citizens earning less than 1 lakh rupees per annum can be exempted from paying income taxes without decreasing the revenues of the Income Tax Department

**51.** Not wanting to present an unwanted optimistic picture in the board meeting, the CEO estimated the sales growth \_\_\_\_\_.

**The option that will best fill the blank in the above sentence would be:**

- (1) strictly                   (2) liberally  
(3) fancifully               (4) pessimistically  
(5) conservatively

**Read the following passage and provide appropriate answers for the questions 52 - 55.**

The idea of demarcating certain areas within the country as special economic zones to promote investment and growth is not new. A large country unable to provide the kind of facilities and environment that can attract foreign investment throughout the country often finds it feasible and attractive to carve up some of its areas where such facilities can be provided. The laws and procedures for setting up new industries are waived to make the area business-friendly with developed infrastructure and a one-window interaction with government. In addition, huge tax benefits are promised to lure investors. China's experience shows that if chalked out and implemented with care such a policy can accelerate the flow of capital and technology from abroad and thereby speed up growth.

However, SEZs may not be the best option in all situations to clear the bottlenecks in growth.

India's experience with export processing zones (EPZs) bears this out. They have failed in India for the simple reason that the factors that made the SEZs successful in China have been absent here. In India, as in China, EPZs were thought of as a way of providing an escape route from the stranglehold of control that prevailed over the Indian economy. But even while promising to ease the rigours of controls, Indian policy-makers could not give up their penchant for micromanaging from the centre and undoing the promised relaxations with all kinds of qualifications and "guidelines".

Over last two decades India has evolved into a market economy and much of governmental control has disappeared, but the flow of foreign direct investment has not reached anywhere near the levels of China. Besides, infrastructure building has fallen far short of what is required. Even after three years of the enactment of the Electricity Act (2003), private investment in electricity generation is still a trickle with the states refusing to give up the monopoly of their electricity boards in the matter of purchase of the power generated. While swearing by growth, governments at both the centre and the states cite the fiscal responsibility laws to plead their helplessness

in making the required investments to improve infrastructure.

Given the situation, the SEZs have apparently been thought of as a simple way out. In its enthusiasm for SEZs the commerce ministry forgot two critical lessons of the Chinese experience, viz., that an SEZ must be of an adequate size to provide opportunities for reaping the benefits of large-scale operations and their number should be few. Every industry or economic activity worth its name is now seeking SEZ status. Proposals are now being floated to invite foreign educational institutions to come to India with promises of SEZ treatment! The finance ministry apprehends a loss of nearly ₹ 1,75,000 crore in direct taxes, customs duties and excise duties over the next five years.

**52.** The objective of the author in writing the above passage seems to be to

- (1) highlight the failure of Indian policy makers regarding EPZs.
- (2) narrate the pros and cons of SEZs.
- (3) compare between the Indian EPZs and Chinese SEZs.
- (4) oppose the proliferation of SEZs in India.
- (5) argue that India should imitate the Chinese policies regarding SEZs.

**53.** The author's arguments suggest the following conclusions, except

- (1) SEZs may be the best option for countries unable to provide infrastructure and business environment to attract foreign direct investment.
- (2) SEZs must be large enough to house large scale operations.
- (3) fiscal responsibility laws actually limit the investment on infrastructure by the Government of India.
- (4) government of India must limit the number of SEZs.
- (5) SEZs cause loss of tax revenue for the central Government.

54. The author does not oppose

- (1) SEZ treatment of foreign educational institutes in India.
- (2) qualifiers undoing relaxation of government control.
- (3) tax benefits to strategically promote SEZs.
- (4) monopoly of state electricity boards in power purchase.
- (5) lack of Government initiative in infrastructure development.

55. The passage was most likely written in the year:

- (1) 1991
- (2) 2001
- (3) 2003
- (4) 2006
- (5) 2011

**Read the following passage and provide appropriate answers for the questions 56 – 57.**

This is one of the unanswered questions that I want to explore. I believe that this is certainly one of the deeper questions about technology. Why do I say so? Without evolution technologies seem to be born independently and improve independently. Each must come from some unexplained mental process, some form of creativity or thinking outside the box that brings it into existence and separately develops it. With evolution, new technologies would be birthed in some precise way from previous ones, albeit with considerable mid-wifing, and develop through some understood process of adaptation. In other words, if we could understand evolution, we could understand the most precious of processes: innovation. But, let me define evolution before I proceed further. The word evolution has two general meanings. One is the gradual development of something, as with the evolution of ballet or the English madrigal. The other is the process by which all objects of some class are related by ties of common descent from the collection of earlier objects. The latter is what I mean by evolution.

56. Which of the following can be inferred from the passage?

- I. The author's main concern is to develop a theory of innovation.
- II. The author is interested in putting forth a theory of technological evolution.
- III. The author believes before developing a theory of technological evolution, one needs to investigate whether technology evolves at all.
- IV. Evolution, as the author puts it, is a sense of common relatedness.

- (1) I and II
- (2) I and IV
- (3) II and IV
- (4) I, II and III
- (5) All the above statements

57.

In 1867, S. Colum Gilfillan, a sociologist traced the evolution of ships from the dugout canoe to the modern steamship of the day.

Many theories propose the existence of a technology in many forms. From these variations, some perform better and are selected for further use and development.

Till date the people who have thought hardest about the general questions of technology have only been social scientists. They have viewed technology from the outside as stand-alone objects without studying earlier technologies.

Some technologies, for example, the laser, the jet engine, the radar, the quick sort algorithm and the locomotive just appear, or at least they seem to just appear unlike novel biological species which are versions of earlier objects.

Radar descends from radio but you can vary 1930s radio circuits as radically you like but you will never get radar. Radar requires a different principle.

**Assuming the above statements are true, which option would most strengthen the author's premise that the question that he has identified has not been solved as yet?**

- (1) I and III
- (2) II and III
- (3) I, III and IV
- (4) II, V and III
- (5) IV, V and III

## Section C – Quantitative Ability

58. Three Vice Presidents (VP) regularly visit the plant on different days. Due to labour unrest, VP (HR) regularly visits the plant after a gap of 2 days. VP (Operations) regularly visits the plant after a gap of 3 days. VP (Sales) regularly visits the plant after a gap of 5 days. The VPs do not deviate from their individual schedules. CEO of the company meets the VPs when all the three VPs come to the plant together. CEO is on leave from January 5<sup>th</sup> to January 28<sup>th</sup>, 2012. Last time CEO met the VPs on January 3, 2012. When is the next time CEO will meet all the VPs?

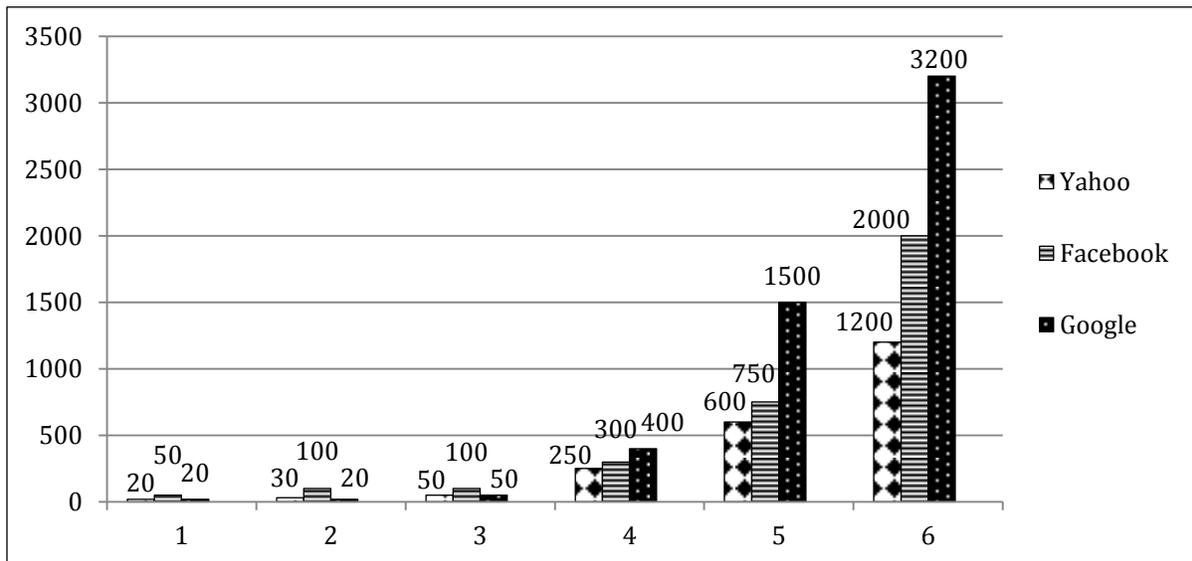
- (1) February 6, 2012
- (2) February 7, 2012
- (3) February 8, 2012
- (4) February 9, 2012
- (5) None of the above

59. Ramesh analysed the monthly salary figures of five vice presidents of his company. All the salary figures are integers. The mean and the median salary figures are ₹5 lakh, and the only mode is ₹8 lakh. Which of the options below is the sum (in ₹ lakh) of the highest and the lowest salaries?

- (1) 9
- (2) 10
- (3) 11
- (4) 12
- (5) None of the above.

**Answer question nos. 60 – 62 based on the following information**

The following graphs shows the revenue (in \$ million) of three companies in their initial six years of operations, in an economy which is characterized by a persistent inflation.



60. In 2010, which could be a valid statement about the revenues (adjusted for inflation) of these three companies?

- (1) Revenues of all three companies were equal.
- (2) Revenues of all three companies could be equal.
- (3) Revenue of Yahoo was definitely less than Facebook which was definitely less than Google.
- (4) Total of Yahoo and Facebook was definitely higher than that of Google.
- (5) None of the above.

61. The difference in the average percentage increase in revenues, from 4<sup>th</sup> to 6<sup>th</sup> year, of Yahoo and Facebook is:

- (1) 35%
- (2) 40%
- (3) 45%
- (4) 50%
- (5) 55%

62. What would have been Facebook's revenue (in \$ million) in its sixth year of operation if the company had matched Google's percentage growth in revenues from the fifth to the sixth year?

Choose the option that is nearest to the answer.

- (1) 1600
- (2) 1700
- (3) 1900
- (4) 2100
- (5) None of the above.

63. Tina, Mina, Gina, Lina and Bina are 5 sisters, aged in that order, with Tina being the eldest. Each of them had to carry a bucket of water from a well to their house. Their buckets' capacities were proportional to their ages. While returning, equal amount of water got splashed out of their buckets. Who lost maximum amount of water as a percentage of the bucket capacity?

- (1) Tina
- (2) Mina
- (3) Gina
- (4) Lina
- (5) Bina

64. Ram, a farmer, managed to grow shaped-watermelons inside glass cases of different shapes. The shapes he used were: a perfect cube, hemi-spherical, cuboid, cylindrical along with the normal spherical shaped watermelons. Thickness of the skin was same for all the shapes. Each of the glass cases was so designed that the total volume and the weight of the all the watermelons would be equal irrespective of the shape.

A customer wants to buy water-melons for making juice, for which the skin of the watermelon has to be peeled off, and therefore is a waste. Which shape should the customer buy?

- (1) Cube
- (2) Hemi-sphere
- (3) Cuboid
- (4) Cylinder
- (5) Normal spherical

65. A man borrows ₹ 6000 at 5% interest, on reducing balance, at the start of the year. If he repays ₹ 1200 at the end of each year, find the amount of loan outstanding, in ₹, at the beginning of the third year.

- (1) 3162.75
- (2) 4125.00
- (3) 4155.00
- (4) 5100.00
- (5) 5355.00

66. A spherical metal of radius 10 cm is molten and made into 1000 smaller spheres of equal sizes. In this process the surface area of the metal is increased by:

- (1) 1000 times
- (2) 100 times
- (3) 10 times
- (4) No change
- (5) None of the above

67. Gopal sells fruit juice mixture using orange juice and pineapple juice. Gopal prepares this mixture by drawing out a jug of orange juice from a 10 litre container filled with orange juice, and replacing it with pineapple juice. If Gopal draws out another jug of the resultant mixture and replaces it with pineapple juice, the container will have equal volumes of orange juice and pineapple juice. The volume of the jug in litres, is

- (1) 2                      (2)  $> 2$  and  $\leq 2.5$   
 (3) 2.5                    (4)  $> 2.5$  and  $\leq 3$   
 (5)  $\geq 3$

68. Nikhil's mother asks him to buy 100 pieces of sweets worth ₹ 100/-. The sweet shop has 3 kinds of sweets, *kajubarfi*, *gulabjamun* and *sandesh*. *Kajubarfi* costs ₹ 10/- per piece, *gulabjamun* costs ₹ 3/- per piece and *sandesh* costs 50 paise per piece. If Nikhil decides to buy at least one sweet of each type, how many *gulabjamuns* should he buy?

- (1) 1      (2) 2      (3) 3      (4) 4      (5) 5

69. A potter asked his two sons to sell some pots in the market. The amount received for each pot was same as the number of pots sold. The two brothers spent the entire amount on some packets of potato chips and one packet of banana chips. One brother had the packet of banana chips along with some packets of potato chips, while the other brother just had potato chips. Each packet of potato chips costs ₹ 10/- and the packet of banana chips costs less than ₹ 10/-. The packets of chips were divided between the two brothers so each brother received equal number of packets. How much money should one brother give to the other to make the division financially equitable?

- (1) 1      (2) 2      (3) 4      (4) 5      (5) 7

70. A city has a park shaped as a right angled triangle. The length of the longest side of this park is 80 m. The Mayor of the city wants to construct three paths from the corner point opposite to the longest side such that these three paths divide the longest side into four equal segments. Determine the sum of the squares of the lengths of the three paths.

- (1) 4000 m                      (2) 4800 m  
 (3) 5600 m                      (4) 6400 m  
 (5) 7200 m

**Answer question 71 and 72 based on the following information.**

Ramya, based in Shanpur, took her car for a 400 km trip to Rampur. She maintained a log of the odometer readings and the amount of petrol she purchased at different petrol pumps at different prices (given below). Her car already had 10 litres of petrol at the start of the journey, and she first purchased petrol at the start of the journey, as given in table below, and she had 5 litres remaining at the end of the journey.

	Odometer Reading (Km)	Petrol purchased (Litre)	Rate of Petrol (₹/litre)
Start of journey	400	20	30
	600	15	35
	650	10	40
End of journey	800		

71. What has been the mileage (in kilometers per litre) of her car over the entire trip?

- (1) 8.00                      (2) 8.50  
 (3) 9.00                      (4) 9.50  
 (5) None of the above

72. Her car's tank-capacity is 35 litres. Petrol costs ₹ 45/- litre in Rampur. What is the minimum amount of money she would need for purchasing petrol for the return trip from Rampur to Shanpur, using the same route? Assume that the mileage of the car remains unchanged throughout the route, and she did not use her car to travel around in Rampur.

- (1) 1714                      (2) 1724  
 (3) 1734                      (4) 1744  
 (5) Data insufficient to answer.

73. A medical practitioner has created different potencies of a commonly used medicine by dissolving tablets in water and using the resultant solution.

*Potency 1 solution: When 1 tablet is dissolved in 50 ml, the entire 50 ml is equivalent to one dose.*

*Potency 2 solution: When 2 tablets are dissolved in 50 ml, the entire 50 ml of this solution is equivalent to 2 doses,*

*... and so on.*

This way he can give fractions of tablets based on the intensity of infection and the age of the patient.

For particular patient, he administers 10 ml of potency 1, 15 ml of potency 2 and 30 ml of potency 4. The dosage administered to the patient is equivalent to

- (1)  $> 2$  and  $\leq 3$  tablets
- (2)  $> 3$  and  $\leq 3.25$  tablets
- (3)  $> 3.25$  and  $\leq 3.5$  tablets
- (4)  $> 3.5$  and  $\leq 3.75$  tablets
- (5)  $> 3.75$  and  $\leq 4$  tablets

74. Ram prepares solutions of alcohol in water according to customers' needs. This morning Ram has prepared 27 litres of a 12% alcohol solution and kept it ready in a 27 litre delivery container to be shipped to the customer. Just before delivery, he finds out that the customer had asked for 27 litres of 21% alcohol solution. To prepare what the customer wants, Ram replaces a portion of 12% solution by 39% solution. How many litres of 12% solution are replaced?

- (1) 5      (2) 9      (3) 10      (4) 12      (5) 15

75. City Bus Corporation runs two buses from terminus A to terminus B, each bus making 5 round trips in a day. There are no stops in between. These buses ply back and forth on the same route at different but uniform speeds. Each morning the buses start at 7 AM from the respective terminuses. They meet for the first time at a distance of 7 km from terminus A. Their next meeting is at a distance of 4 km from terminus B, while travelling in opposite directions. Assuming that the time taken by the buses at the terminuses is negligibly small, and

the cost of running a bus is ₹ 20 per km, find the daily cost of running the buses (in ₹).

- (1) 3200                      (2) 4000
- (3) 6400                      (4) 6800
- (5) None of the above

76. Shyam, a fertilizer salesman, sells directly to farmers. He visits two villages A and B. Shyam starts from A, and travels 50 meters to the East, then 50 meters North-East at exactly  $45^\circ$  to his earlier direction, and then another 50 meters East to reach village B. If the shortest distance between villages A and B is in the form of  $a\sqrt{b + \sqrt{c}}$  meters, find the value of  $a + b + c$ .

- (1) 52                          (2) 54
- (3) 58                          (4) 59
- (5) None of the above.

77. Three truck drivers, Amar, Akbar and Anthony stop at a road side eating joint. Amar orders 10 rotis, 4 plates of *tadka*, and a cup of tea. Akbar orders 7 rotis, 3 plates of *tadka*, and a cup of tea. Amar pays ₹ 80 for the meal and Akbar pays ₹ 60. Meanwhile, Anthony orders 5 rotis, 5 plates of *tadka* and 5 cups of tea. How much (in ₹) will Anthony pay?

- (1) 75                          (2) 80
- (3) 95                          (4) 100
- (5) None of the above.

78. A computer program was tested 300 times before its release. The testing was done in three stages of 100 tests each. The software failed 15 times in Stage I, 12 times in Stage II, 8 times in Stage III, 6 times in both Stage I and Stage II, 7 times in both Stage II and Stage III, 4 times in both Stage I and Stage III, and 4 times in all the three stages. How many times the software failed in a single stage only?

- (1) 10      (2) 13      (3) 15      (4) 17      (5) 35

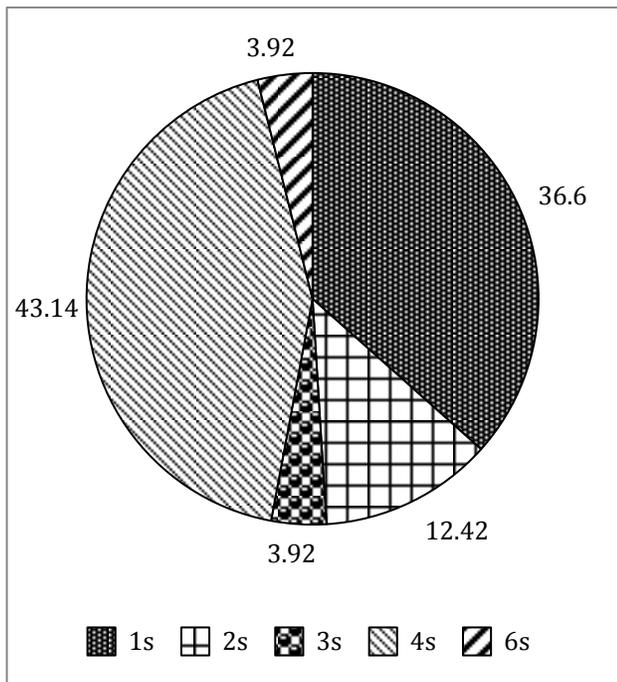
79. Suresh, who runs a bakery, uses a conical shaped equipment to write decorative labels (e.g., Happy

Birthday etc.) using cream. The height of this equipment is 7 cm and the diameter of the base is 5 mm. A full charge of the equipment will write 330 words on an average. How many words can be written using three fifth of a litre of cream?

- (1) 45090                      (2) 45100
- (3) 46000                      (4) 43200
- (5) None of the above.

**Answer question nos. 80 - 81 based on the following information.**

The following pie chart shows the percentage distribution of runs scored by a batsman in a test innings.



**80.** If the batsman has scored a total of 306 runs, how many 4s and 6s did he hit?

- (1) 31 and 3 respectively
- (2) 32 and 2 respectively
- (3) 32 and 3 respectively
- (4) 33 and 1 respectively
- (5) 33 and 2 respectively

**81.** If 5 of the dot balls had been hit for 4s, and if two of the shots for which the batsman scored 3 runs each had fetched him one run instead, what would have been the central angle of the sector corresponding to the percentage of runs scored in 4s?

- (1) 160                              (2) 163
- (3) 165                              (4) 167
- (5) 170

**82.** Carpenter Rajesh has a circular piece of plywood of diameter 30 feet. He has cut out two disks of diameter 20 feet and 10 feet. What is the diameter of the largest disk that can be cut out from the remaining portion of the plywood piece?

- (1) > 8.00 feet and ≤ 8.20 feet
- (2) > 8.21 feet and ≤ 8.40 feet
- (3) > 8.41 feet and ≤ 8.60 feet
- (4) > 8.61 feet and ≤ 8.80 feet
- (5) > 8.81 feet and ≤ 9.00 feet

**83.** Lionel and Ronaldo had a discussion on the ages of Jose’s sons. Ronaldo made following statements about Jose’s sons:

- i. Jose has three sons.
- ii. The sum of the ages of Jose’s sons is 13.
- iii. The product of the ages of the sons is the same as the age of Lionel.
- iv. Jose’s eldest son, Zizou weighs 32 kilos.
- v. The sum of the ages of the younger sons of Jose is 4.
- vi. Jose has fathered a twin.
- vii. Jose is not the father of a triplet.
- viii. The LCM of the ages of Jose’s sons is more than the sum of their ages.

Which of the following combination gives information sufficient to determine the ages of Jose’s sons?

- (1) i, ii, iii and iv              (2) i, ii, iv and vi
- (3) i, ii, iii and v                (4) i, ii, v and vii
- (5) i, ii, v and vi

84. Ram and Shyam form a partnership (with Shyam as working partner) and start a business by investing ₹ 4000 and ₹ 6000 respectively. The conditions of partnership were as follows:

- In case of profits till ₹ 200,00 per annum, profits would be shared in the ratio of the invested capital.
- Profits from ₹ 200,001 till ₹ 400,000 Shyam would take 20% out of the profit, before the division of remaining profits, which will then be based on ratio of invested capital.
- Profits in excess of ₹ 400,000, Shyam would take 35% out of the profits beyond ₹ 400,000, before the division of remaining profits, which will then be based on ratio of invested capital.

If Shyam's share in a particular year was ₹ 367000, which option indicates the total business profit (in ₹) for that year?

- (1) 520,000            (2) 530,000  
(3) 540,000            (4) 550,000  
(5) None of the above

85. A property dealer bought a rectangular piece of land at ₹ 1000/sq. ft. The length of the plot is less than twice its breadth. Due to its size, there were no buyers for the full plot. Hence he decided to sell it in smaller sized pieces as given below.

The largest square from one end was sold at ₹ 1200/sq. ft. From the remaining rectangle the largest square was sold at ₹ 1150/sq. ft.

Due to crash in the property prices, the dealer found it difficult to make profit from the sale of the remaining part of the land. If the ratio of the perimeter of the remaining land to the perimeter of the original land is 3 : 8, at what price (in ₹) the remaining part of the land is to be sold such that the dealer makes an overall profit of 10%?

- (1) 500/sq. ft.            (2) 550/sq. ft.  
(3) 600/sq. ft.            (4) 650/sq. ft.  
(5) None of the above.

# SOLUTIONS

XAT 2012

## ANSWER KEY

Q.	Ans.
1	4
2	5
3	4
4	2
5	3
6	2
7	5
8	5
9	1
10	5
11	5
12	4
13	2
14	1
15	4
16	2
17	2
18	3
19	1
20	3
21	5
22	4
23	1
24	5
25	5
26	4
27	2
28	4
29	4
30	4

Q.	Ans.
31	2
32	1
33	1
34	4
35	5
36	4
37	5
38	5
39	4
40	4
41	4
42	1
43	3
44	4
45	2
46	4
47	2
48	5
49	5
50	3
51	5
52	4
53	3
54	3
55	4
56	1
57	5
58	3
59	1
60	5

Q.	Ans.
61	1
62	1
63	5
64	5
65	3
66	5
67	4
68	1
69	2
70	3
71	1
72	4
73	2
74	2
75	4
76	5
77	4
78	2
79	5
80	5
81	5
82	3
83	5
84	4
85	2

## Detailed Solutions:

- Consider the following lines: "Chaitanya Rao and Ajit Singh.....and both have been **nominated** for officer status". They have yet to become officers.  
Hence, the correct answer is **option 4**.
- 1, 3 and 4 are biased as they mention resignation for only one of the two employees. 2 also mentions an either/or condition. Option 5 clearly mentions that both have to resign from one or the other committee.  
Hence, the correct answer is **option 5**.
- The information does not talk about Baft and Hebe and so no conclusion can be made about the two.  
Hence, the correct answer is **option 4**.
- Asking customers to wait will aggravate the problem. Options 3, 4 and 5 do not deal with the epicentre of the problem. Option B will not only help buy time, it will also calm the customers and in fact make them receptive to PAC because of the discounts and gifts  
Hence, the correct answer is **option 2**.
- A is not fair. B misses a very important point about informing the customer about Ginger Automobile and its announcements. D does not maximize Mr. Ahmed's position or cash flow in anyway. E has the same error as B. C is fair on both Mr. Ahmed and the customer get a fair deal.  
Hence, the correct answer is **option 3**.
- Here, first calculate the time taken for each journey and tabulate it so as to help calculate the requisite values.  
The timings from Jamshedpur to Delhi and from Delhi to Jamshedpur are as follows:

Jamshedpur to Delhi				
Train			Time	
12801	6:45	4:50	22 hrs 5 min	1325
12443	15:55	10:35	18 hrs 40 min	1120
Road			Time	
Jamshedpur to Ranchi by Car			3 hrs	180
Delhi airport to site			1.5 hrs	90
Delhi railway to site			0.5 hrs	30
Flight			Time	
AI 9810	8:00	9:45	1 hr 45 min	105
AI 810	15:25	17:10	1 hr 45 min	105
IT 3348	19:20	21:05	1 hr 45 min	105

Delhi to Jamshedpur				
Train			Time	
12802	22:20	20:05	21hrs 45 min	1305
12444	17:20	10:35	17hrs 15 min	1035
Road			Time	
Ranchi To Jamshedpur by car			3 hrs.	180
Site to Delhi airport			1.5 hrs.	90
Site to Delhi railway			0.5 hrs.	30
Flight			Time	
AI 9809	5:50	7:35	1 hr. 45 min	105
AI 809	11:00	12:45	1 hr. 45 min	105
IT 3347	17:10	18:55	1 hr. 45 min	105

Also, the waiting time at the airport, navigation time at the railway station and work duration are:

Waiting	Aiport		1 hr	60
Navigation	Railway			5

Work Duration		6 hrs	360
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Now, keep in mind that each flight (in either direction) takes 105 minutes.

So, the time taken from Tina's house to the work site will always remain constant. This will be:

$$\begin{aligned}
 &\text{Jamshedpur to Ranchi by car} + \text{Waiting time at airport} \\
 &+ \text{Flight time} + \text{airport to work site} \\
 &= 180 + 60 + 105 + 90 \\
 &= 435 \text{ minutes i.e. 7 hours and 15 minutes.}
 \end{aligned}$$

This will remain constant while returning from the work site to Jamshedpur as well.

Similarly, the time from Tina's house to the Jamshedpur railway station (excluding train time) will be always be 10 minutes (5 for travel and 5 for navigation). This will remain constant even when she returns from Jamshedpur railway station to her house.

Also, the time from Delhi railway station to the work site will always be 35 minutes (30 for travel and 5 for navigation). Again, this will remain constant even when she returns from the work site to Delhi railway station.

Finally, work time will always be constant at 360 minutes

Also, always Total time = Travelling Time + Work Time + Waiting Time

Now, consider each option:

**Option 1:**

Since she travels by flight in both case, total travelling time =  $435 \times 2 = 870$  minutes

Work time = 360 minutes

Now, if she goes by AI 9810, she reaches the site 90 minutes after 9:45 i.e. at 11:15 a.m. and finishes the work at 17:15. Because IT 3347 departs at 17:10 hours, she will have to wait till 14:40 hours on the next day i.e. wait time of 1285 minutes

**So, total time =  $870 + 360 + 1285 = 2515$  minutes**

**Option 3:**

Again, because she travels by flight both ways, travel time = 870 minutes

Work time = 360 minutes

Now, if she goes by IT 3348, she reaches the site 90 minutes after 21:05 i.e. at 22:35 hours and finishes the work at 04:35 hours. Because IT 3347 departs at 05:50 hours, she will have to wait till 03:20 hours on the next day i.e. wait time of 1365 minutes

**So, total time =  $870 + 360 + 1365 = 2595$  minutes**

**Hence, option 3 can be eliminated.**

**Option 2:**

She goes by flight and returns by train

Travel time = Flight time + Time from work site to Delhi railway station + Actual train travel + Time from Jamshedpur railway station to home =  $435 + 35 + 1305 + 10 = 1785$  minutes

Work Time = 360 minutes

Now, if she goes by AI 9810, she reaches the site 90 minutes after 9:45 i.e. at 11:15 a.m. and finishes the work at 17:15. Because train 12802 departs at 22:20 hours, she will have to wait till 21:45 hours on the same day i.e. wait time of 270 minutes

**So, total time =  $1785 + 360 + 270 = 2415$  minutes**

**Hence, option 1 can be eliminated.**

**Option 5:**

She goes by flight and returns by train

Travel time = Flight time + Time from work site to Delhi railway station + Actual train travel + Time from Jamshedpur railway station to home =  $435 + 35 + 1035 + 10 = 1515$  minutes

Work Time = 360 minutes

Now, if she goes by AI 9810, she reaches the site 90 minutes after 9:45 i.e. at 11:15 a.m. and finishes the work at 17:15. Because train 12444 departs at 17:20 hours, she will have to wait till 16:45 hours on the next day i.e. wait time of 1410 minutes

**So, total time =  $1515 + 360 + 1410 = 3285$  minutes**

**Hence, option 5 can be eliminated.**

**Option 4:**

She travels both ways by train

So, the journey between her house and Jamshedpur railway station will be counted twice and the journey between the workplace and Delhi railway station will be counted twice. Also, the actual train time will be counted once each for the two journeys.

Travel Time =  $(10 \times 2) + (35 \times 2) + 1120 + 1035 = 2245$  minutes

Work time = 360 minutes.

Now, observe that work time and travel time together are  $2245 + 360 = 2605$  minutes which is greater than the least time obtained for option 2. So, there is no point in calculating the waiting time which will only increase this value.

Hence, option 4 can be eliminated.

Hence, **option 2.**

7. Note that in this question, the work needs to be completed any time between 9:00 hours and 17:00 hours. It DOES NOT mean that the work has to be started and completed between the 9:00 hours and 17:00 hours.

Consider each option.

**Option 1:**

Since there are 2 train journeys,

Travel time =  $(2 \times 10) + (2 \times 35) +$  Actual travel in 12443 + Actual travel in 12444  
 $= 20 + 70 + 1120 + 1035 = 2245$  minutes

Work time = 360 minutes.

If she goes by train 12443, she will reach the work site at 11:10 hours and finish the work at 17:10 hours which violates the condition of the question.

So, she will have to wait till 03:00 hours on the next day to start the work so that she can complete the work at 09:00 hours. This is a wait of 950 minutes.

Once she finishes the work at 09:00 hours, she will have to wait till 16:45 hours on that day to catch train 12444. This is a waiting time of 465 minutes.

Total waiting time =  $950 + 465 = 1415$  minutes.

**So, total time =  $2245 + 360 + 1415 = 4020$  minutes.**

**Option 2:**

Since there are 2 train journeys,

Travel time =  $(2 \times 10) + (2 \times 35) +$  Actual travel in 12801 + Actual travel in 12802

$$= 20 + 70 + 1325 + 1305 = 2720 \text{ minutes}$$

Work time = 360 minutes.

If she goes by train 12801, she will reach the work site at 05:25 hours, start immediately and finish the work at 11:25 hours which satisfies the condition of the question.

Once she finishes the work at 11:15 hours, she will have to wait till 21:45 hours on that day to catch train 12802. This is a waiting time of 630 minutes.

**So, total time =  $2720 + 360 + 630 = 3710$  minutes.**

**Hence, option 1 can be eliminated.**

**Option 3:**

Since there are 2 flight journeys,

Travel time =  $435 \times 2 = 870$  minutes

Work Time = 360 minutes

If she goes by AI 9810, she will reach the work site at 11:15 hours and finish the work at 17:15 hours which violates the condition of the question.

So, she will have to wait till 03:00 hours on the next day to start the work so that she can complete the work at 09:00 hours. This is a wait of 945 minutes.

Once she finishes the work at 09:00 hours, she will have to wait till 03:20 hours on the next day to catch AI 9809. This is a waiting time of 1100 minutes.

Total waiting time =  $945 + 1100 = 2045$  minutes.

**So, total time =  $870 + 360 + 2045 = 3275$  minutes.**

**Hence, option 2 can be eliminated.**

**Option 4:**

Since there are 2 flight journeys,

Travel time =  $435 \times 2 = 870$  minutes

Work Time = 360 minutes

If she goes by AI 810, she will reach the work site at 18:40 hours and finish the work at 00:40 hours which violates the condition of the question.

So, she will have to wait till 03:00 hours on the next day to start the work so that she can complete the work at 09:00 hours. This is a wait of 500 minutes.

Once she finishes the work at 09:00 hours, she will have to wait till 03:20 hours on the next day to catch AI 9809. This is a waiting time of 1100 minutes.

Total waiting time =  $500 + 1100 = 1600$  minutes.

**So, total time =  $870 + 360 + 1600 = 2830$  minutes.**

**Hence, option 3 can be eliminated.**

**Option 5:**

Since there are 2 flight journeys,

Travel time =  $435 \times 2 = 870$  minutes

Work Time = 360 minutes

If she goes by IT 3348, she will reach the work site at 22:35 hours and finish the work at 04:35 hours which violates the condition of the question.

So, she will have to wait till 03:00 hours on the next day to start the work so that she can complete the work at 09:00 hours. This is a wait of 265 minutes.

Once she finishes the work at 09:00 hours, she will have to wait till 14:40 hours on the same day to catch IT 3347. This is a waiting time of 340 minutes.

Total waiting time =  $265 + 340 = 605$  minutes.

**So, total time =  $870 + 360 + 605 = 1835$  minutes.**

**Hence, option 4 can be eliminated.**

**Hence, option 5.**

8. Tina cannot leave before 16:00 hours on 8<sup>th</sup> January. So, if any of the travel modes necessitate departure before 16:00 hours, she will have to start the journey on 9<sup>th</sup> January. However, keep in mind that the "time out of Jamshedpur" is to be minimized. So, the time that she spends in Jamshedpur till her departure on 9<sup>th</sup> January cannot be considered "waiting time".

Consider each option.

**Option 1:**

Since there are 2 train journeys,

Travel time =  $(2 \times 10) + (2 \times 35) +$  Actual travel in 12443 + Actual travel in 12444

$$= 20 + 70 + 1120 + 1035 = 2245 \text{ minutes}$$

Work time = 360 minutes.

If she goes by train 12443, she will depart on 9<sup>th</sup> January, reach the work site at 11:10 hours on 10<sup>th</sup> and finish the work at 17:10 hours. Because train 12444 departs at 17:20 hours, she will miss it and will have to catch it on 11<sup>th</sup> January. This means a waiting time till 16:45 hours of 11<sup>th</sup> January i.e. 1415 minutes

**So, total time =  $2245 + 360 + 1415 = 4020$  minutes.**

**Option 2:**

She goes by train and returns by flight

Travel time = Time from home to Jamshedpur station + Actual train travel + Time from Delhi railway station to work site + Flight time =  $10 + 1120 + 35 + 435 = 1600$  minutes

Work Time = 360 minutes

If she goes by train 12443, she will depart on 9<sup>th</sup> January, reach the work site at 11:10 hours on 10<sup>th</sup> and finish the work at 17:10 hours. Flight AI 9809 departs at 05:50 hours on 11<sup>th</sup> January. So, she will have to wait till 03:20 hours of 11<sup>th</sup> January i.e. a waiting time of 610 minutes

**So, total time = 1600 + 360 + 610 = 2570 minutes.**

**Hence, option 1 can be eliminated.**

Observe that options 3 and 4 can straightaway be eliminated as the mention a return journey by train 12801, which is not possible as that train travels from Jamshedpur to Delhi and not the other way round.

**Hence, options 3 and 4 can be eliminated.**

**Option 5:**

She travels both ways by flight.

Travel time =  $435 \times 2 = 870$  minutes

Work Time = 360 minutes

If she goes by AI 9810, she departs on 9<sup>th</sup> January, reaches the work site at 11:15 hours on 9<sup>th</sup> and finishes the work at 17:15 hours. Flight AI 9809 departs at 05:50 hours on 10<sup>th</sup> January. So, she will have to wait till 03:20 hours of 11<sup>th</sup> January i.e. a waiting time of 605 minutes

**So, total time = 870 + 360 + 605 = 1835 minutes.**

**Hence, option 2 can be eliminated.**

Hence, **option 5.**

9. Note that in this case, we are not interested in the travel time and work time at all, as the objective is to minimize the waiting time. The waiting time of one hour at the airport is to be considered but the navigation time of 5 minutes at the railway station is not to be considered.

Also, the waiting time will be nothing but the difference between completion of work and time at which she needs to leave from the work site. We need to add 0, 60 or 120 minutes to this (depending on how many times she travels by flight).

Consider each option.

**Option 1:**

Since she travels by flight once, 60 minutes will be added to the waiting time.

If she goes by train 12801, she will complete the work by 11:25 hours. To catch flight IT 3347 which departs at 17:10 hours, she needs to leave at 14:40 hours i.e a wait time of 195 minutes.

**So, total wait time = 195 + 60 = 255 minutes**

**Option 2:**

Since she travels by train twice, 0 minutes will be added to the waiting time.

If she goes by train 12443, she will complete the work by 17:10 hours. To catch train 12802 which departs at 22:20 hours, she needs to leave at 21:45 hours i.e a wait time of 275 minutes.

**So, total wait time = 275 minutes**

**Hence, option 2 can be eliminated.**

**Option 3:**

Since she travels by flight once, 60 minutes will be added to the waiting time.

If she goes by flight AI 9810, she will complete the work by 17:15 hours. To catch train 12802 which departs at 22:20 hours, she needs to leave at 21:45 hours i.e a wait time of 270 minutes.

**So, total wait time = 270 + 60 = 330 minutes**

**Hence, option 3 can be eliminated.**

**Option 4:**

Since she travels by flight twice, 120 minutes will be added to the waiting time.

If she goes by flight AI 810, she will complete the work by 00:40 hours. To catch flight AI 9809 which departs at 05:50 hours, she needs to leave at 03:20 hours i.e a wait time of 160 minutes.

**So, total wait time = 160 + 120 = 280 minutes**

**Hence, option 4 can be eliminated.**

**Option 5:**

Since she travels by flight twice, 120 minutes will be added to the waiting time.

If she goes by flight IT 3348, she will complete the work by 04:35 hours. To catch flight AI 809 which departs at 11:00 hours, she needs to leave at 08:30 hours i.e a wait time of 235 minutes.

**So, total wait time = 235 + 120 = 355 minutes**

**Hence, option 5 can be eliminated.**

Hence, **option 1.**

10. A fails to address the problem well. He only looks at the new deadline option and not if and how the deadline will be achieved.

B is incorrect as the external consultant will only be able to give a professionally 'correct' solution and may not be able to address the core of the issue.

C only talks about new members. It ignores the ones already a part of BAG.

D is incorrect. A 360 degrees viewpoint is required to sort this issue which is found in option 5. Option 5, will result in brainstorming and possible solutions, it will also motivate the members by making them take some responsibility.

Hence, the correct answer is **option 5.**

11. A just goes to show that Shiv met the criteria to be selected to take up the job. B does not state the immediate cause. C is ambiguous. D mentions what is contrary in the passage. The passage states that since the older members were on the verge of retirement they decided to play along with the younger members. It is clear from the passage that in many instances, Shiv could have asked for some help, opinions and suggestions from his colleagues and put them to practice which he failed to do.

Hence, the correct answer is **option 5**.

12. A is an escape. B shows signs of confusion and anxiety on Shiv's part. C is unfair. E mentions 'take care of ad-hoc requirements'. Also, out-bound programmes seems a little too relaxed given the situation. D addresses the problem appropriately.

Hence, the correct answer is **option 4**.

13. A is mentioned in the 2<sup>nd</sup> paragraph: "She preferred that BAG....being made to report to the new members" C finds support in the last lines of the 6<sup>th</sup> paragraph: "Not willing to disagree...earlier decided 14 months".

D finds support in paragraph 4: "This was heavily influenced .....working on an already existing one".

E finds support in the last paragraph.

B has not been mentioned. Hence, the correct answer is **option 2**.

14. B is unfair. C is impersonal and would not help her understand first-hand what her father's company is all about. D suggests an indirect approach to know one's employees well which is not the best option. E is not holistic in its approach. A is the best alternative, it discusses the issue with all members together and makes each one feel 'relevant' at the work place.

Hence, the correct answer is **option 1**.

15. A and B are superficial. Nothing about stakeholders is mentioned for the efficiency of the implementation of an ERP package .C is ruled out. E is ambiguous with 'operations'. D is correct.

Neither Miss Teknikwali nor Shiv nor the external consultant was absolutely sure about the ERP technology which led to unrest in their organization.

Hence, the correct answer is **option 4**.

16. Ms Shabina is the principal which means she has power to take tough decisions single-handedly. A does not deal with the problem at hand. C seems too impractical with 'teachers, parents and management'. D is erroneous in its latter part with 'staunch supporters of the current practices'. It makes Ms

Shabina unfair. E is too dogmatic. B is fair and also achievable.

Hence, the correct answer is **option 2**.

17. The problem is that of teachers attending school on a weekend. Option I does not deal with this immediate problem. II is a very good recommendation. It will help reduce the discomfort of the unhappy teachers and ensure smooth functioning of the school. III misses the point. IV is in line with II and also the previous question.

Hence, the correct answer is **option 2**.

18. Mr. Dev wants a stable and trustworthy driver while his family wants a driver who is not young. The perspective of the HR manager is not to be considered at all.

As per Mr. Dev's criteria, Sunder and Chintan cannot be considered because they are not stable - Sunder because he keeps on changing jobs frequently and Chintan because he has become a driver only because he is out of a job.

Also, Chethan may not be suitable because his services have been offered on a temporary basis. Again, this creates an issue of stability.

From the family's point of view, Mani is not suitable as he is the youngest (23 years old).

Bal Singh is the most suitable in terms of age (40 years), experience (20 years), stability and trustworthiness (Ram Singh's cousin and has already worked for Dev Anand earlier).

Therefore, Dev Anand would like to have Bal Singh as his driver.

Hence, **option 3**.

19. Looking at the solution to the earlier question, Bal Singh would be Dev Anand's most preferred driver. Also, as explained earlier, Sunder and Chintan would not be suitable as they not stable; Mani would not be suitable as he is not trustworthy (claims to have more than one year of experience but cannot substantiate it) and Chethan would not be suitable as he is neither stable (he is coming over on a temporary basis) nor trustworthy (the competitor is offering the services which could be a ploy). So, Chethan would be the least preferred driver.

Thus, Statement I is in conformance with the given information.

The family members want a driver who is not young. Chintan who is the eldest among the candidates (44 years) has been mentioned as the least preferred

driver. Based on the given information, the least preferred driver for the family should have been Mani. Thus, Statement II is not in conformance with the given information.

The HR manager would not prefer Bal Singh as he has a profile very similar to Ram Singh and that created discontent among senior employees. The HR manager wants to avoid that. So, Bal Singh will be his least preferred choice. Among the other four drivers, there is no information available to identify the driver who would be the most preferred.

Thus, Statement III is not in conformance with the given information.

Hence, **option 1**.

**Note:** Once statement II is identified as not in conformance, the answer straightaway becomes option 1 as all the other options mention statement II as one of the statements. Also, if you are confused in statement III, note that there is no option that has only statements I and III.

20. The biggest criterion for the GM HR is that the selection of a new driver should not lead to discontent among the senior employees of the firm. The earlier driver, Ram Singh was forced to quit because the earlier employees did not like the influence of Ram on Dev Anand. This was because of his contacts, information gathering skills and proximity to Dev Anand.

Among the profile of the candidates, only that of Bal Singh is similar. It is given that his knowledge and contacts in the firm are as good as Ram Singh. It is also given that used to substitute for Ram Singh and so already has some proximity to Dev Anand. As such, he is the only candidate who would definitely create discontent among the senior employees. The other candidates may or may not do so.

So, Bal Singh is the most likely to get rejected.

Hence, **option 3**.

21. According to the passage, ethics is an individual's code for society survival. In paragraph 2, Naresh has drawn the boundaries of his society to include himself, his family, his employees and their family members. In that respect, Naresh is being totally ethical as he is paying a bribe to ensure he gets the contract which will ensure his "society's survival".

Hence, the correct answer is **option 5**.

22. Naresh is ethical for the same reasons as mentioned in the above solution. No conclusion can be made about Srikumar as his actions are not too concrete

Hence, the correct answer is **option 4**.

23. Srikumar is immoral as he not only kept mum but also stopped Naresh from doing the right thing. At the same time he is ethical, as it is stated in paragraph 2 that Srikumar's principle is to help others with an expectation that s/he will return the favour.

Naresh is not unethical as his intention was to stand up for the truth. Nothing can be said about the contractors as their 'ethics/code for survival' is not specified and there is no option saying that the contractors are immoral alone.

Hence, the correct answer is **option 1**.

24. Option A with 'favourable position' is ambiguous. B is out of context. D is not nailing the crux of the issue. C is a likely possibility but in the presence of option E, C loses out. The paragraph talks about organizational performance affecting 'salaries'.

Hence, the correct answer is **option 5**.

25. A and B are trivial points which the management wouldn't give importance to. Option C is irrelevant data. Option D places too much responsibility on the GM, and is not representative of the 'entire management'.

Option E is apt.

Hence, the correct answer is **option 5**.

26. "On a wing and a prayer" is a phrase meaning 'in poor condition, but just managing to get the job done'.

Hence, the correct answer is **option 4**.

27. Options 1, 3 and 4 use the present tense whereas the sentence clearly requires a past tense, indicated by 'but back then'. Option 5 with "ever", meaning 'at all times; always' becomes erroneous as it is placed after the word "before".

Hence, the correct answer is **option 2**.

28. All the sentences can be implied except option 4. The sentence indicates that "libero" was introduced in the 60s, as an Italian default, as a result of AC Milan's success and it was their success that killed the "libero" a quarter of a century later. Option 4 interprets this wrongly and says that AC Milan's success was killed for almost a quarter of a century.

Hence, the correct answer is **option 4**.

29. All options except option 4 are antonyms of each other or convey opposite ideas.

Hence, the correct answer is **option 4**.

30. The information talks about a rise/fall in literacy rate in and around 3 years: 1991, 2001 and 2006. It talks about, a rise in literacy rate from 1991 to 2006 with a fall in the rate according to the 2001 census. A refutable statement to this is option 4 which talks about a larger drop in literacy rate between 1991 and 2001 than a rise in the rate from 2001 to 2006 (which does not indicate progress from 1991 to 2006 as mentioned in the statement) The other options do not refute the statement as strongly as option 4. Hence, the correct answer is **option 4**.
31. The meaning of "embezzlement" is 'to take (money, for example) for one's own use in violation of a trust'. Hence, the correct answer is **option 2**.
32. The paragraph should begin with sentence E as it talks about the factors influencing forecast which sets the tone for the rest of the paragraph. Hence, options 3 and 4 are ruled out. Sentence A follows E as it categorizes these factors. C talks of 'another way' to classify these factors. D and B talk about macro and micro factors respectively. Hence, the correct order is **option 1**.
33. Option 1 is validated in the first paragraph, " We can see the person in terms of his or her 'agency' .....in terms of his or her 'well-being'" The paragraph also mentions words like 'duality' and 'dichotomy' to stress on this distinction. Also, consider the last few lines of paragraph 2, ".....does not imply that they are the same variable, or that they have the same values...." Hence, the correct answer is **option 1**.
34. Option 4 summarizes what is mentioned in the statement. The Japanese people, in the pursuit of their country's goals, have provided impetus to their sense of well-being but there is a certain 'departure from this self-interested behaviour' to achieve 'industrial success' Hence, the correct answer is **option 4**.
35. Option 5 summarizes the ideas mentioned in the passage. The politician's 'agency aspect' is seen in the fact that his fast helped in galvanizing the state government to enact new laws and his ' well-being aspect' is fulfilled as he has earned new respect in the minds of the voters. Hence, the correct answer is **option 5**.
36. Statement I is clearly stated in the first two lines of paragraph 2, "To recognize the distinction..." Statement III is mentioned in the mid-section of paragraph 1, "Agency may be seen as important.....but also intrinsically" The paragraph mentions that there is no sound basis for demanding that the agency and well-being aspects of a person should be independent of each other. Hence, the correct answer is **option 4**.
37. In all options except 5, the subject is in the pursuit of fulfilling his/her agency aspects –goals, values, needs, commitments which will affect his/her well-being. In option 5, the ascetic (person who renounces material comforts and leads a life of austere self-discipline, especially as an act of religious devotion.) is fulfilling his well-being aspect. Hence, the correct answer is **option 5**.
38. Sentence 5 uses the phrase 'ability of' which is incorrect. The correct phrase is 'ability to'. Hence, the correct answer is **option 5**.
39. Alfredo talks about Argentina being a football powerhouse in the past whereas Diego talks about the team being a powerhouse in the present. Hence, the correct answer is **option 4**.
40. The manager received support from 'people who had challenged him earlier'. The pronoun required to replace this should be third person singular. 'Those' is the correct pronoun to be used here. Hence, the correct answer is **option 4**.
41. The argument stated in the information is that all animal actions are as a result of an interaction between experiences and genotype. Hence, if all experiences and genotypes are identical, all actions will be identical. This is mentioned in option 4. Hence, the correct answer is **option 4**.
42. Therapists continue a therapeutic relationship until the patient is retained to stability and can function normally. Once this is achieved the therapist will not have sessions with the patient as (i) s/he has retained the patients' well-being (ii) each therapeutic session has to be paid for. The last line of the information mentions that very few therapist/patient relationships continue after the paid sessions are terminated. Hence, the correct answer is **option 1**.

43. Consider the second line of the information, "Despite large increases.....continues to increase". Option 3 completely contradicts this  
Hence, the correct answer is **option 3**.
44. All those who studied commerce are incorporated in the sports category and no tax consultant enjoys sports. Thus, no tax consultant studied commerce.  
Hence, the correct answer is **option 4**.
45. The sentence talks about seeing a fly in a soup. This is of major concern to a chef. Hence, options 1 and 3 are ruled out. The word housefly is not hyphenated and a space in between house and fly changes the meaning of the sentence.  
Hence, the correct answer is **option 2**.
46. "Hypothesize" means 'to speculate or anticipate; to assume by hypothesis'.  
Options 1, 2, 3 and 5 are synonyms of the word.  
"Refute" means 'To deny the accuracy or truth of'.  
Hence, the correct answer is **option 4**.
47. The paragraph must begin with E as it introduces the topic of warehouses. Options 3 and 4 are ruled out. E should be followed by C which answers the question of why the concept of warehouses is not new in India. B gives an example of the history of warehouses among Indian communities. D talks about warehouses in modern times and A with 'in fact' aptly fits in as the concluding sentence. The correct order is ECBDA.  
Hence, the correct answer is **option 2**.
48. Concurrence is synonymous with options 1, 2, 3 and 4. Harmony is a synonym of accord and consensus, however, it is not a synonym of concurrence.  
Hence, the correct answer is **option 5**.
49. The ii-i-v link is imperative. ii introduces the topic of governments influence on domestic economy. i gives an example of the same. v with 'but there is not the slightest evidence' must follow i as i gives evidence for government influence on economy.  
Only options 1 and 5 have this link. Between the two, option 5 has better construction. iii does not make for as good an introductory sentence as ii.  
Hence, the correct answer is **option 5**.
50. The logic in the given statement is that 'If A is reduced on increased, juxtaposing reaction is seen in B as well as C'.  
Option 3 exhibits the analogous relationship. If number of words is high, the text will not be read (reduction in reading) and when an advertisement text is not read, the product is not sold (production is reduced).  
Hence, the correct answer is **option 3**.
51. The CEO did not want to give a rosy picture of the sales growth nor would a strict or pessimistic picture help in motivating the team. "Conservatively" fits in well in this context. It means 'cautiously or moderately'.  
Hence, the correct answer is **option 5**.
52. Consider the last paragraph. The author mentions that SEZs have been thought of as a simple way out. In the next few lines the author says that their (SEZ) number should be few.  
Option 1 should have SEZs instead of EPZs. Options 2 and 3 are not the objectives of this passage. Option 5 is incorrect.  
Hence, the correct answer is **option 4**.
53. Consider the last lines of paragraph 3: "...governments at both the .....improve infrastructure".  
Option 3 misinterprets this.  
The passage mentions that the Government cites fiscal responsibility as a reason for being unable to improve infrastructure. The option states that fiscal responsibility laws limit the Government investment.  
Hence, the correct answer is **option 3**.
54. Paragraph 1 mentions "...huge tax benefits are promised to lure investors".  
Hence, the correct answer is **option 3**.
55. Paragraph 3 mentions "Even after 3 years of the enactment of the Electricity Act (2003)..."  
Hence, the correct answer is **option 4**.
56. Consider the following lines: "In other words, if we could understand evolution, we could understand the most precious of processes: innovation"  
The paragraph then goes to describe and define evolution. Hence, I can be inferred.  
Consider this: "Without evolution technologies seem to be born independently and improve independently.....develops it". . Hence, II can be inferred.  
III cannot be inferred. IV is very far-fetched.  
Hence, the correct answer is **option 1**.
57. Statements I and II are complete in themselves. They do not have any loopholes.  
III is present in every option. IV is incomplete. It talks about technologies appearing 'unlike novel biological species..' which has not been defined or stated. V says

'radar requires a different principle' but fails to mention what it is.

Hence, the correct answer is **option 5**.

58. VP (HR) visits on every third day, VP (Operations) visits on every fourth day and VP (Sales) visits on every sixth day.

Hence, all of them will visit together on every twelfth day.

Now, all VPs visited together on January 3, 2012.

Hence, they will visit on, 15<sup>th</sup> January, 27<sup>th</sup> January, 8<sup>th</sup> February and so on.

Hence, **option 3**.

59. Mean of the salaries of the five vice presidents is Rs. 5 lakhs. Hence, sum of the salaries of the five vice presidents = 25 lakhs.

Now, median of the salaries is Rs. 5 lakhs and 8 is the only mode.

Hence, the highest salary and second highest salaries are both 8 lakhs.

Hence, sum of two lowest salaries =  $25 - (5 + 8 + 8) = 4$  Lakhs.

As 8 is the only mode hence, the only combination of the lowest salaries is 1 lakhs and 3 lakhs.

Hence, lowest salary = Rs. 1 lakh.

Hence, the required sum =  $8 + 1 = 9$  lakhs.

Hence, **option 1**.

60. No data has been given in the question as to which year amongst the given years in the graph is 2010.

Hence this question is incorrect.

Note: By trial and error method, let us assume all the years one by one to be 2010.

Revenues of all the three companies are not equal in any of the 6 years and hence option A and B are incorrect.

Revenues of Google were less than that of Facebook and Yahoo in the first three years mentioned in the graph and hence option C is also incorrect.

Total of Yahoo and Facebook was less than Google in the fifth year shown in the graph and so option D is also wrong.

If this question needs to be compulsorily answered, then option E, none of the above would be the correct one.

However this doesn't refute the fact that this question is an incorrect one as data about the regarding which year represents 2010 is not given.

Hence, **option 5**.

61. Revenue of Yahoo in 2006 = 1200

Revenue of Yahoo in 2004 = 250

So, percentage increase =  $(950/250) \times 100 = 380$

Average percentage increase =  $380/2 = 190$

Revenue of Facebook in 2006 = 2000

Revenue of Facebook in 2004 = 350

So, percentage increase =  $(1650/350) \times 100 = 235.71$

So, percentage difference in both the values =

$[(235.71 - 190)/190] \times 100 = 24.05$

None of the options are less than 35%, so the question is incorrect.

However, "None of the above" is not one of the given options and hence we will have to take the option closest to 24.05 as the correct answer.

Hence, **option 1**.

62. percentage increase in Google's growth between 5<sup>th</sup> and 6<sup>th</sup> year =  $(3250 - 1500)/1500 \times 100 = 116.67$

So, required value of Facebook revenue after 6<sup>th</sup> year =  $750 \times 216.67 = 1625.05$

So, the closest answer is 1600.

Hence, **option 1**.

63. Let T, M, G, L and B be the capacities of Tina's, Mina's, Gina's, Lina's and Bina's bucket.

Hence,  $T > M > G > L > B$

Assume that they spill  $x$  litres of water.

Hence, the percentages of the water spilled by them are;

$(x/T) \times 100$ ,  $(x/M) \times 100$ ,  $(x/G) \times 100$ ,  $(x/L) \times 100$  and  $(x/B) \times 100$  respectively.

As,  $T > M > G > L > B$ , this implies that  $x/T < x/M < x/G < x/L < x/B$

Hence, percentage of water spilled is highest for Bina.

Hence, **option 5**.

64. Let  $V$  be the volume of water-melon,  $S$  be the total surface area and  $t$  be the thickness of the skin, then volume useable for Juice is,

$V - St$

Hence, if total surface area is minimum, then useable volume of the water-melon will be highest.

Now, for equal volume, sphere has the least surface area.

Hence, **option 5**.

65. After one year, amount due =  $6000 \times 1.05 - 1200 = 5100$

Hence, amount due after two years =  $5100 \times 1.05 - 1200 = 4155$

Hence, **option 3**.

66. Let  $r$  be the radius of the smaller sphere.  
Now, the volume of the big sphere and the 1000 small spheres is same.

Hence, we have,

$$\frac{4}{3}\pi 10^3 = 1000 \times \frac{4}{3}\pi r^3$$

Hence,  $r^3 = 1$

Hence,  $r = 1$

Now, total surface area of big sphere =  $4 \times \pi \times 10^2 = 400\pi$

Total surface area of 1000 new sphere =  $1000 \times 4\pi \times 1^2 = 4000\pi$

Hence, total surface area increases by,  $(4000\pi - 400\pi)/400\pi = 9$  times.

Hence, **option 5**.

67. Assume that the volume of the jug is  $l$  liters.

Hence, after first replacement, the juice mixture contains  $l$  liters of pineapple juice.

When the juice mixture is drawn out for the second time using the jug, the amount of pineapple juice in the jug =  $l \times (l/10)$

This is replaced by  $l$  litres of pineapple juice.

Hence, amount of pineapple juice after two replacements =  $l + (l - l \times (l/10)) = 5$

Hence, we get,

$$l^2 - 20l + 50 = 0$$

Solving the above quadratic we get,

$$l = 5(2 - \sqrt{2}) \text{ or } l = 5(2 + \sqrt{2})$$

As,  $5(2 + \sqrt{2}) > 10$ ,  $l = 5(2 - \sqrt{2}) \approx 2.92$

Hence, **option 4**.

68. Let Nikhil buy  $a$ ,  $b$  and  $c$  pieces of kajubarfi, gulabjamun and sandesh respectively.

Hence, we have,

$$a + b + c = 100, \text{ and} \quad \dots \text{ (i)}$$

$$10a + 3b + 0.5c = 100 \quad \dots \text{ (ii)}$$

By,  $2 \times \text{ii} - \text{i}$ , we get,

$$19a + 5b = 100$$

Hence,  $a = (100 - 5b)/19$

Now,  $(100 - 5b)/19$  will be positive integer only if  $b = 1$ .

In that case,  $a = 5$ .

Hence, Nikhil must buy 1 gulabjamun.

Hence, **option 1**.

69. Let the potter's sons have  $x$  pots.

Hence, they received Rs.  $x^2$  after selling these pots.

As the price of one banana wafer packet is less than Rs. 10 hence,  $x^2$  will not be a multiple of 100.

Assume that they bought  $n$  packets of potato wafers.

Hence, total number of wafers packet =  $n + 1$

Hence, each son gets  $(n + 1)/2$  packets.

Hence,  $n$  is odd.

Let  $b$  be the price of banana wafers.

Hence, they have Rs.  $(n \times 10 + b)$

As  $n$  is odd, tens place of  $(n \times 10 + b)$  is odd.

Now, each brother can have equal money if total amount earned by them is even.

Hence,  $b$  must be even.

Hence, we have the following condition,

$x^2 = 10 \times n + b$  such that  $b$  is even and  $n$  is odd.

Hence,  $x$  is an even number.

Now, if unit's digit is of  $x$  is 2 or 8, then tens place of  $x^2$  will be even.

This violates our condition that tens digit of  $x^2$  is odd and hence it is not possible.

Hence, unit's place digit of  $x$  is 4 or 6.

In either case, unit digit of  $x^2$  is 6.

Hence,  $b = 6$ .

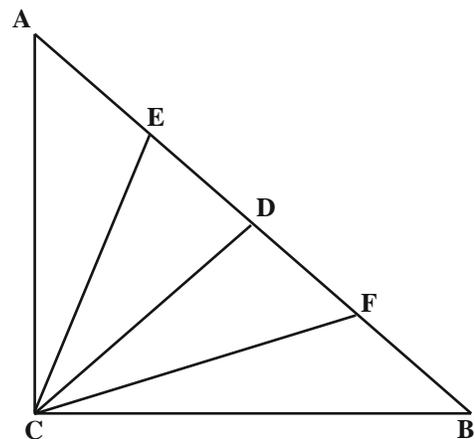
Hence, the son having banana wafers owes Rs.  $((n - 1) \times 10/2 + 6)$  and the other son owes  $((n + 1) \times 10/2)$

Hence, one of the son has Rs.  $((n + 1) \times 10/2) - ((n - 1) \times 10/2 + 6) = \text{Rs. } 4$  more than the other.

Hence, he must give Rs. 2 to the other to have financially equitable division.

Hence, **option 2**.

70. Consider the following diagram.



Here D is midpoint of AB, E is the midpoint of AD and F is the midpoint of BD.

Hence,  $AE = ED = DF = BF = 20$

Let  $AC = b$  and  $BC = a$ .

Now, applying Apollonius theorem in triangle ACD, we get,

$$CE^2 + 20^2 = 1/2 \times (b^2 + CD^2) \quad \dots \text{ (I)}$$

Similarly, applying Apollonius in CDB, we get,

$$CF^2 + 20^2 = 1/2 \times (a^2 + CD^2) \quad \dots \text{ (II)}$$

Adding I and II, we get,

$$CE^2 + CF^2 + 2 \times 20^2 = 1/2 (a^2 + b^2 + 2 \times CD^2) = 1/2 (80^2 + 2 \times 40^2) = 3 \times 40^2$$

$$\text{Hence, } CE^2 + CF^2 + CD^2 = 3 \times 40^2 + 40^2 - 2 \times 20^2 = 5600$$

Hence, **option 3**.

71. Ramya has 10 litres petrol in her car to start with. She purchased 20 litres, 15 litres and 10 litres on three occasions.

She was left with 5 litres in her car at the end of the journey.

Hence, she utilized  $(10 + 20 + 15 + 10 - 5) = 50$  litres.

She travelled  $(800 - 400) = 400$  km.

Hence, the mileage of Ramya's car  $= 400/50 = 8$  km/litre

Hence, **option 1**.

72. Ramya's car already has 5 litres in the tank.

Her car's tank capacity is 35 litres.

She can fill a maximum of 30 litres more.

The petrol cost in Rampur is Rs. 45/litre

As the cost of petrol is lower at all the succeeding petrol pumps that come on the way and hence, to minimize the cost, she will fill enough petrol to reach the first pump i.e 150 km.

She already has 5 litres using which she can travel 40 km.

Hence, to travel 110 km, she will need  $110/8 = 13.75$  litres at the rate of 45 per litre.

On reaching the first petrol pump in the reverse journey, she will fill up enough petrol to reach the second petrol pump as the cost of petrol in the second pump is less than the cost of the first pump.

This distance is 50 km.

Ramya needs  $50/8 = 6.25$  litres at the rate of Rs. 40/litre.

For the rest of the journey (200 km) she will need  $200/8 = 25$  litres at the rate of Rs. 35/litre.

Hence the total cost is  $(13.75 \times 45 + 6.25 \times 40 + 25 \times 35) = 1743.75$

Hence, **option 4**.

73. 50 ml of potency 1 solution is equivalent to 1 tablet; 50 ml of potency 2 solution is equivalent to 2 tablets and so on.

Hence, 10 ml of potency 1 solution is equivalent to  $10/50 = 1/5$  tablet.

Similarly, 15 ml of potency 2 and 30 ml of potency 4 corresponds to  $15/50 \times 2$  and  $30/50 \times 4$  tablets respectively.

Hence, the dosage administered is equivalent to  $1/5 + 3/5 + 12/5 = 16/5 = 3.2$  tablets

Hence, **option 2**.

74. Let Ram replace  $x$  litres of 12% solution with 39% solution.

Hence, amount of alcohol in new solution  $= (27 - x) \times 0.12 + x \times 0.39 = 27 \times 0.12 + x \times 0.27$

Now, new concentration of the solution is 21%, hence, volume of alcohol  $= 27 \times .21$

Hence,  $27 \times 0.12 + x \times 0.27 = 27 \times 0.21$

Hence,  $0.12 + x/100 = 0.21$

Hence,  $x = 9$ .

Hence, **option 2**.

75. Let the distance between the two terminuses be  $x$  km. Now, relative distance travel by the two buses before they meet for the first time  $= x$  km.

Similarly, relative distance travelled by the two buses after first meet and before second meet  $= 2x$ .

Now, bus originating from terminus A travels 7 km before the first meet.

Hence, it should travel  $2 \times 7 = 14$  km after first meet and before second meet.

Hence, total distance travelled by that bus before second meet  $= 7 + 14 = 21$  km.

Now, second meet occurs at 4 km from the terminus B.

Hence, total distance travelled by the bus starting from terminus A (from the beginning till they meet for the second time)  $= x + 4$  km

Hence,  $x + 4 = 21$

Hence,  $x = 17$  km

Hence, one bus travels  $34 \times 5 = 170$  km a day.

Hence, cost of running one bus  $= 170 \times 20 = \text{Rs. } 3400$

Hence, cost of running two buses  $= 3400 \times 2 = \text{Rs. } 6800$

Hence, **option 4**.

76. Total distance travelled by Shyam is;

$50 + 50 + 50/\sqrt{2}$  km towards east, and  $50/\sqrt{2}$  km towards north

Hence, smallest distance, say  $d$ , between village A and Village B is;

$$d = \sqrt{((100 + 25\sqrt{2})^2 + (25\sqrt{2})^2)}$$

$$\text{Hence, } d^2 = (100 + 25\sqrt{2})^2 + (25\sqrt{2})^2 = a^2(b + \sqrt{c})$$

$$\text{But, } (100 + 25\sqrt{2})^2 + (25\sqrt{2})^2 = 2500(5 + 2\sqrt{2})$$

$$= 2500(5 + \sqrt{8})$$

Hence,  $a^2 = 2500$ ,  $b = 5$  and  $c = 8$

Hence,  $a + b + c = 50 + 5 + 8 = 63$

Hence, **option 5**.

77. Let cost of a Roti, a plate of Tadka and a cup of tea be Rs.  $a$ ,  $b$  and  $c$  respectively.

Hence, we have,

$$10a + 4b + c = 80, \text{ and} \quad \dots \text{(I)}$$

$$7a + 3b + c = 60 \quad \dots \text{(II)}$$

Now, by II - I,

$$3a + b = 20 \quad \dots \text{(III)}$$

Hence, by, (I) - 3(III), we have,

$$a + b + c = 20$$

$$\text{Hence, } 5a + 5b + 5c = 100$$

Hence, Anthony will pay Rs. 100.

Hence, **option 4**.

78. Assume that the software fails  $a$ ,  $b$  and  $c$  times in a single stage, in two stages and in all stages respectively.

$$\text{Hence, } b + 3c = 6 + 7 + 4 = 17$$

$$\text{But } c = 4, \text{ hence, } b = 5$$

Similarly, we have,

$$a + 2b + 3c = 15 + 12 + 8$$

$$\text{Hence, } a = 13$$

Hence, **option 2**.

79. Volume of the equipment is;

$$\frac{1}{3} \times \pi \times r^2 \times h = \frac{1}{3} \times 22/7 \times 7 \times (0.5)^2 = 11/6 \text{ cm}^3$$

Now,  $11/6 \text{ cm}^3$  can write 330 words.

Hence,  $1 \text{ cm}^3$  can write,

$$330 \times 6/11 = 180$$

We know that  $1 \text{ cm}^3 = 1 \text{ ml}$

$3/5^{\text{th}}$  of a litre is 600 ml which equals  $600 \text{ cm}^3$

Hence,  $600 \text{ cm}^3$  will write,  $180 \times 600 = 10800$  words.

Hence, **option 5**.

80. Total runs scored by the batsman = 306.

$$43.14\% \text{ of } 306 = (43.14/100) \times 306 = 132 \text{ runs.}$$

This is equal to 33 fours.

$3.94\%$  of 306 is equivalent to  $4\%$  of 300 runs which is equal to 12 runs.

This is equal to 2 sixes.

Hence, **option 5**.

81. Considering the changes mentioned in the question, total runs =  $306 + 20 - 4 = 322$ .

As calculated in the previous question, runs scored in fours = 132.

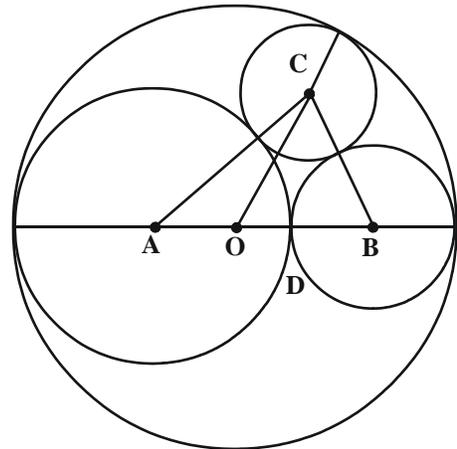
$$\text{So, runs scored in fours} = 132 + 20 = 152.$$

$$\text{So, central angle} = (152/322) \times 360 = 169.93$$

So, as per the options, the answer should be 170.

Hence, **option 5**.

82. Consider the given diagram,



Here, O is the center of the largest circle, A and B are the centers of the circle having radius 10 and 5 feet respectively.

Let C be the center of the largest circle that can be cut from the remaining portion.

The circles having radius 10 and 5 cm touch each other at point D.

Let radius of the largest circle that can be cut from the remaining portion be  $r$ .

Now, one can easily observe that  $AO = OD = BD = 5 \text{ cm}$ .

Now,  $AC = 10 + r$ , and  $BC = 5 + r$ , and  $OC = 15 - r$

Let  $DC = a$ .

Now, applying Apollonius in triangle ADC, we have,

$$(10 + r)^2 + a^2 = 2((15 - r)^2 + 5^2)$$

$$\text{I.e., } a^2 - r^2 + 80r = 400 \quad \dots \text{(I)}$$

Similarly, applying Apollonius theorem in triangle OCB, we get,

$$(15 - r)^2 + (5 + r)^2 = 2(a^2 + 5^2)$$

$$\text{I.e. } 2a^2 - 2r^2 + 20r = 200 \quad \dots \text{(II)}$$

By,  $2 \times \text{(I)} - \text{(II)}$ , we get,

$$140r = 600$$

$$\text{Hence, } r = 30/7$$

Hence, diameter of the required circle =  $60/7 \approx 8.57$

Hence, **option 3**.

83. Consider each option separately,

**Consider option A:**

In this case, we don't know the Lionel's age.

Hence, the only conclusion can be derived is;

Jose has 3 sons and sum of their age is 13.

**Consider option B:**

In this case also, we only know that Jose has 3 sons and sum of their ages is 13 and two of them are twin.

But it still doesn't provide adequate information to calculate age of each son.

**Consider option C:**

As, age of Lionel is not known, we only know that the sum of ages of Jose's three son is 13 out of which sum of the age of the younger two brother is 4.

By this we can calculate age of the Jose's eldest son, but we cannot age of the remaining two children.

**Consider option D:**

In this case, statement 7 is redundant, as by statement 2 only we can guess that Jose is not the father of a triplet.

Hence this statement doesn't provide adequate information to guess the ages of all the three children.

**Consider option E:**

By, i, ii and iii, we can conclude that the age of the Jose's eldest son is 9 and sum of the other two children is 4.

Now, by statement vi, Jose has fathered twins, we can easily conclude that the younger two children are twins.

Hence, their ages are 2 and 2 respectively.

Hence, E is sufficient to answer.

Hence, **option 5.**

84. For first Rs. 200000, Shyam gets,  $6000/(4000 + 6000) \times 100 = 60\%$  of the profit.

For next Rs. 200000, he gets 20% + plus 60% of the remaining profit.

I.e.  $20\% + 80 \times 0.6\% = 68\%$

Similarly, for a profit margin greater than Rs. 400000, he will get,  $35\% + 65 \times 0.6\% = 74\%$  of the profits beyond Rs. 400000

Now, for a profit of first Rs. 400000, Shyam will receive  $200000 \times (68 + 60)/100 = 256000$

But Shyam earns a total profit of 367000.

Let total profit earned by them be Rs.  $400000 + x$ .

Hence, Shyam received  $367000 - 256000 = \text{Rs. } 110000$  from Rs.  $x$  profit.

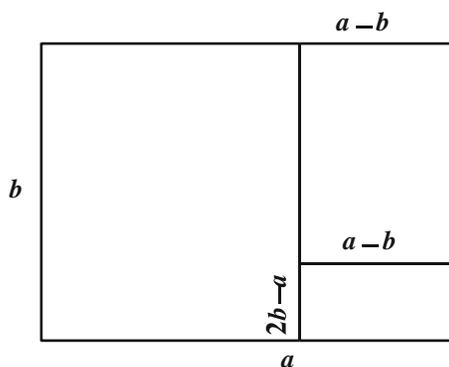
I.e. Rs. 110000 is 74% of  $x$ .

Hence,  $x = 110000/0.74 = 150000$

Hence, total profit earned by them =  $400000 + 150000 = \text{Rs. } 550000$

Hence, **option 4.**

85. Consider the following diagram.



Here,  $a$  is the length of the plot and  $b$  is the height of the plot.

Hence, from the diagram, perimeter of the remaining portion is;

$$2 \times (2b - a + a - b) = 2b$$

$$\text{Perimeter of the original land} = 2(a + b)$$

$$\text{Hence, we have, } 2b : 2(a + b) = 3 : 8$$

$$\text{Hence, } b : a = 3 : 5$$

Now, without loss of generality we can assume that  $a = 5$  and  $b = 3$

Hence, area of the land = 15 square unit.

Hence, cost of the land =  $1000 \times 15$

Now, selling price of small and big squares are,  $9 \times 1200$  and  $4 \times 1150$  respectively.

Let he sells the remaining land at Rs.  $x/\text{sq. ft.}$

Hence, we have,

$$9 \times 1200 + 4 \times 1150 + x \times 2 = 1100 \times 15$$

Hence,  $x = 550$

Hence, **option 2.**