Answer Key XAT 2012

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

Solutions XAT 2012

SECTION A: DECISION MAKING

1. D The rules of the Members council say that no two officers shall serve on the same committee. Ajit Singh and Chaitanya Rao have been *nominated* for officer status, they have *not been confirmed as officers* yet. Thus, the writer has overlooked this flaw mentioned in option D. Option A is incorrect as both of them can be members of the Disciplinary Committee not necessarily as officers. Options B, C and E do not affect the reasoning of the letter in any sense.

2. E All other options except E are biased for/against one the two officers. Only E suggests a reasonable and exhaustive solution. Both the officers should resign from either of the committee so that they there is only one officer in both the committees, so that the rule is not violated.

3. D The information given says that Limo captured 30% market share which was 200% of the expected share. It does not mean that the sales of Limo increased by 200%. Moreover, we don't know whose share Limo ate into to capture its share, it could well have come off other competitors. Hence we can't say that *Baft* and *Hebe* saw their market share decline by 10% due to Limo. The information doesn't in sense talk about the desirability of *Baft* and *Hebe* and about its features. So, both the conclusions can't be made. Hence the correct option is D.

4. B The best way to deal with unhappy customers is to suggest them to buy other models and offering to them discounts and gifts. This would not only make the customers happy but would also mean more business for the company. Option A is incorrect since suggesting the customers to wait will only aggravate the problem. Option C, D and E don't deal with issue of making the customers happy.

5. C Option A is unfair since Mr. Murugan is not informed about the delivery date and expected delay. Option B is incorrect for the same reason that Mr. Murugan is not informed about Ginger Automobiles and its announcements. Option D is correct as it maximizes Mr. Ahmed's cash flow as well informs Mr. Murugan of the delivery problem. The rest of the two options are incorrect since they do not maximize Mr. Ahmed's cash flow and inform Mr. Murugan about the delivery respectively.

For questions 6 to 9:

(i) If Tina plans to go by train then she has to leave her home 10 minutes before the train departure time and after arriving at Delhi she will take 30 + 5 = 35 minutes to reach the work place.

(ii) If Tina plans to go by flight then she has to leave her home 4 hours before the flight departure time and after arriving at Delhi she will take 90 minutes to reach the work place.

(iii) If Tina plans to return by train then she has to leave her work place 30 + 5 = 35 minutes before the train departure time and after arriving at Jamshedpur she will take 5 + 5 = 10 minutes to reach home.

(iv) If Tina plans to return by flight then she has to leave her work place 90 + 60 = 150 minutes before the flight departure time and after arriving at Ranchi she will take 3 hours to reach home.

Additional information:

Onward Journey:

	Departure	Leave home (latest by)	Reach work place (earliest by)	Work finished (earliest by)
Flight				
AI-9810	8:00 hrs	4:00 hrs	11.15 hrs (1)	17.15 hrs (1)
AI 810	15.25 hrs	11.25 hrs	18:40 hrs (1)	00.40 hrs (2)
IT 3348	19.20 hrs	15.20 hrs	22:35 hrs (1)	4:35 hrs (2)
Train				
12801	6:45 hrs	6:35 hrs	5:25 hrs (2)	11:25 hrs (2)
12443	15:55 hrs	15:45 hrs	11:10 hrs (2)	17:10 hrs (2)

Note : Number inside ( ) represents the day w.r.t the one on which she leaves for Delhi.

Return Journey:

	Departure	Leave work place (latest by)	Reach home (earliest by)
Flight			
AI-9809	5:50 hrs	3:20 hrs	10:35 hrs (1)
AI 809	11:00 hrs	8:30 hrs	15:45 hrs (1)
IT 3347	17:10 hrs	14:40 hrs	21:55 hrs (1)
Train			
12802	22:20 hrs	21:45 hrs	20:15 hrs (2)
12444	17:20 hrs	16:45 hrs	10:45 hrs (2)

Note: Number inside the ( ) represent the day w.r.t. the one on which she leaves for Jamshedpur.

6. B **Option A:** AI 9810 and return by IT 3347.
She will leave at 4:00 hrs on day 1 and return at 21:55 hrs on day 2.
Total time for which she is out of Jamshedpur
= 41 hrs and 55 minutes.
Option B: AI 9810 and return by train 12802.
She will leave at 4:00 hrs on day 1 and return at 20:15 hrs on day 2.
Total time for which she is out of Jamshedpur
= 40 hrs and 15 minutes.
Option C: IT 3348 and return by AI 9809.
She will leave at 15:20 hrs on day 1 and return at 10:35 hrs on day 3.
Total time for which she is out of Jamshedpur
= 43 hrs and 15 minutes.

Option D: Train 12443 and return by train 12444.
She will leave at 15:45 hrs on day 1 and return at 10:45 hrs on day 4.
Total time for which she is out of Jamshedpur = 67 hrs.
Option E: AI 9810 and return by train 12444.
She will leave at 4:00 hrs on day 1 and return at 10:45 hrs on day 3.
Total time for which she is out of Jamshedpur
= 54 hrs and 45 minutes.

Hence, best option is option B.

7. E **Option A:** Train 12443 and return by train 12444.
She will leave at 15:45 hrs on day 1, complete the work between 9:00 hrs and 17:00 hrs on day 3 and return at 10:45 hrs on day 4.
Total time for which she is out of Jamshedpur
= 67 hrs.
Option B: Train 12801 and return by train 12802.
She will leave at 6:35 hrs on day 1, complete the work between 9:00 hrs and 17:00 hrs on day 2 and return at 20:15 hrs on day 3.
Total time for which she is out of Jamshedpur
= 61 hrs and 40 minutes.

Option C: AI 9810 and return by AI 9809.
She will leave at 4:00 hrs on day 1, complete the work between 9:00 hrs and 17:00 hrs on day 2 and return at 10:35 hrs on day 3.
Total time for which she is out of Jamshedpur
= 54 hrs and 35 minutes.

Option D: AI 810 and return by AI 9809.
She will leave at 11:25 hrs on day 1, complete the work between 9:00 hrs and 17:00 hrs on day 2 and return at 10:35 hrs on day 3.
Total time for which she is out of Jamshedpur
= 47 hrs and 10 minutes.

Option E: IT 3348 and return by IT 3347.
She will leave at 15:20 hrs on day 1, complete the work between 9:00 hrs and 14:40 hrs on day 2 and return at 21:55 hrs on day 2.
Total time for which she is out of Jamshedpur = 30 hrs and 35 minutes.

Hence, option (E) is the correct answer.

8. E **Option A:** Train 12443 and return by train 12444.
She will leave at 15:45 hrs on 9th of January and return at 10:45 hrs on 12th of January.
Total time for which she is out of Jamshedpur
= 67 hrs.

Option B: Train 12443 and return by AI 9809.
She will leave at 15:45 hrs on 9th of January and return at 10:35 hrs on 11th of January.
Total time for which she is out of Jamshedpur
= 42 hrs and 50 minutes.

Option C: She cannot return by train 12801 because it does not run from Delhi to Jamshedpur.
Hence, this option is eliminated.

Option D: She cannot return by train 12801 because it does not run from Delhi to Jamshedpur.
Hence, this option is eliminated.

Option E: AI 9810 and return by AI 9809.
She will leave at 4:00 hrs on 9th of January and return at 10:35 hrs on 10th of January.
Total time for which she is out of Jamshedpur
= 30 hrs and 35 minutes.

Hence, option E is the correct answer.

9. D **Option A:** Train 12801 and return by IT 3347.
She will have to wait from 11:25 hrs to 14:40 hrs on the same day. Hence, total waiting period is 3 hrs and 15 minutes.

Option B: Train 12443 and return by train 12802.
She will have to wait from 17:10 hrs to 21:45 hrs on the same day. Hence, total waiting period is 4 hrs and 35 minutes.

Option C: AI 9810 and return by train 12802.
She will have to wait from 17:15 hrs to 21:45 hrs on the same day. Hence, total waiting period is 4 hrs and 30 minutes.

Option D: AI 810 and return by AI 9809.
She will have to wait from 00:40 hrs to 3:20 hrs on the same day.
Hence, total waiting period is 2 hrs and 40 minutes.

Option E: IT 3348 and return by AI 809.
She will have to wait from 04:35 hrs to 08:30 hrs the on same day. Hence, total waiting period is 3 hrs and 55 minutes.

Hence, option D is the correct answer.

10. E Including all the BAG members in the decision making process would make them more responsible and involved in the project. Thus, option E is a good way of dealing with the problem of rescheduling the ERP implementation. Option A only looks at a probable deadline date but doesn't deal with the core problem of how it will be met. Option B would not solve the problem since the problem is not about lack of professional advice but how other members can be made receptive to change in the plans. Option C is biased as it overlooks the older members. Option D is incorrect and not in line with the passage, it is nowhere mentioned that external consultants are slow.

11. E Unilateral decision making by Mr. Shiv is the cause for the problems faced by BAG. He did not take the other members into confidence while committing to the deadline. Hence, option E is correct. Option A is not the immediate cause of the problem. Option B is incorrect because we can't comment on the competence of the consultant, moreover he wasn't directly responsible for the problem. Options C and D are out of scope since it is not mentioned that there was any lack of information or infighting between members in the ERP project.

12. D Option A and B do not solve the problem in any way. Resigning or firing old members does not address the problem in any way. Option C is unfair since it sidelines the old members and their concern, neither does it guarantee that the same problem won't be faced with the new members. Option E is too relaxed to work out in such a crisis like situation. It would not be intelligent to arrange for out-bound programs when deadlines need to be met. Option D is correct, it addresses the problem of extra work load by hiring extra resources along with developing specialized work-routines.

13. B Ms. Teknikwali's lack of faith on older members to implement new ideas is hinted through her action of inducting freshly graduated MBAs from premier B-schools for the very purpose of developing new ideas. Mr. Shiv committing to a 6 month deadline in place of 14 months hints at his intention of impressing Ms. Teknikwali. Thus, Option A and C are both hinted at in the passage. It has also been mentioned in the passage that though Ms. Teknikwali was aware of the latest in ERP technology, she was not equally abreast with the implementation of the same. Mr. Shiv's lack of understanding regarding the sensitivities of the older members is evident from his unanimous decisions of working on weekends and reprimanding older members. This negates options D and E too. The passage does not mention or hint at any problems of getting along between the younger and the older members of BAG. Thus, option B is correct.

14. A Option A is the best way that Ms. Teknikwali could have adopted to deal with the BAG group. The members were experienced and knew about the strengths and weaknesses of the BAG group. Options B and E are negative approaches that talk about scraping the entire team and breaking it down to sub-groups respectively. This does not make use of the years of experience of the group members. Option C talks about hiring an external consultant for interacting with the BAG which meant she won't get any first-hand experience. Option D is an indirect approach for getting to know one's own company.

15. E The BAG group had a mixture of experienced as well as newly graduated employees; still it could not implement the ERP package. Thus, option A does not follow from the passage. Option B is incorrect as there is nothing in the given case that

suggests that young people from top B-schools wouldn't have faced problems or have implemented ERP successfully. Similarly, we have no information regarding efficiency of employees who are networked with stakeholders. Thus, option C is ruled out. Option D is incorrect as a team of problemsolvers and those who know the latest technology does not guarantee success in ERP. Option E is correct; people involved in operations for a long time along with those who know the latest technology would work in implementation of ERP package. This is so because along with the knowledge of technology, it is imperative to have relevant experience to overcome road blocks in the implementation of such a package.

16. C Mr. Dev would like to have Bal Singh as his driver as he is experienced, trustworthy and a stable choice. Bal Singh meets the criteria of Mr. Dev's family too who do not want a young driver. Mani is young and so doesn't meet the criteria. Sunder is experienced but not stable. Chethan is willing to work long term but his services have been offered on a temporary basis. Chintan is inexperienced and unstable.

17. A Dev's most preferred employee would be Bal Singh as he is both stable and trustworthy. His least preferred choice would be Chinthan who is being offered on a temporary basis (which makes him unstable) by a competing firm. Also, it can be a ploy on the part of the competitor to know the inside information of Mr. Dev's company. This makes him untrustworthy too and thus, Mr. Dev's least preferred choice. Family members do not want a young driver so their least preferred choice would be Mani and not Chintan. Thus, statement II is not in conformance with the given information. Statement III is also not in conformance with the information. We do not have sufficient information regarding his most preferred choice and so it can be anyone out of the other four except Bal Singh who has a very similar profile to Ram Singh which created discontent among senior employees. Hence the correct answer is statement I which is option A.

18. C Ram Singh was a cause of concern for the HR manager because he provided insider information to Mr. Dev which used to irk the senior members. Bal Singh has a profile very similar to Ram Singh and thus, the HR manager would never like to take him on board.

19. B Compensating the teachers who volunteer to work on weekends is a good solution to deal with unhappy teachers. It is fair on the part of teachers to get additional incentives for coming on a weekend. Option A doesn't deal with the problem. Option C, appointing a committee of teachers, management and parents, is too impractical. Option D is biased as a committee of staunch supporters of the current practices would not consider the grievances of the teachers. Option E is incorrect because it does not show the principal as fair and just.

20. B Statements II and IV are good recommendations that deal with the problem of unhappy teachers. They not only help them understand the issues at hand but also soothe their (teachers') discomfort. Statement I does not help calm the teachers in any way. Statement III is unrelated to the problem. Hence, option B with Statements II and IV is the correct choice.

21. E Ethics as defined in the beginning of the case states that it is an individual's code for society survival. Naresh defines his society including himself, his family members, his employees and their family members. His action of paying the bribe is aimed at the survival and well-being of *'hissociety'* and so he is being totally ethical. Thus, option E is the correct choice.

22. B Ethics is an individual's code for society survival. Naresh's society boundaries do not include his customers. Hence for him using inferior quality material was ethical as this kept prices down and customers happy (mentioned in the passage). Srikumar believed that the contractors need to stick together against any external treat. Hence Both Naresh and Srikumar are ethical in this case.

23. D Option D is correct. Morals are defined as society's code for individual survival. It is mentioned in the case that getting involved in court cases is a serious threat to an individual's business and leads to various unpredictable outcomes. By not speaking up, contractors ensured their own survival. They stopped Naresh from speaking up too and helped in his survival as well. Thus, option D is correct.

24. E Manohar would oppose the proposal because now he would be judged on three parameters instead of one and he may not be that good on the new criteria. He would have to definitely work harder to maintain his 'highest earning employee' status. Thus, option E is correct. Options B and D are ambiguous and can't be stated concretely. Option A is incorrect for the word 'favorable position'. Being highest paid does not mean he has a favorable or unfavorable position. Option C is ambiguous too because we don't know if the relative importance of the three parameters would not be specified later.

25. E The main reason for delaying the implementation of the proposal for a month is that the management would need time to think it out and get consensus from concerned employees. This makes option E correct. Options A and B give trivial reasons that the management would choose to overlook. Option C is irrelevant as it questions the competence of the GM which is certainly incorrect. Option D states that GM would require time to implement the plan, which is incorrect. It is the management in its entirety that implements the plan. Thus, the delay has nothing to do with the GM. This rules out option D.

SECTION B: ENGLISH LANGUAGE ABILITY AND LOGICAL REASONING

26. D The phrase '*on a wing and a prayer'* means being in a bad condition and just managing to do a task. Thus, it can be inferred that the Indian team was under prepared (which is option D) and hoping to sail through the matches on a prayer.

27. B Options A, C and D are in present tense while the sentence requires a past tense which is only in option B. Option E is incorrect because ever doesn't fit in after before. Thus, option B is the correct choice.

28. D Options B, C, and E are implied in the given sentence. Option A can somewhat be interpreted from the sentence, that AC Milan was successful in the sixties, though the usage of 'help' makes this option debatable. The second part of the sentence indicates that a quarter of a century (25 years) later than the sixties, which comes out to be in the eighties (as mentioned in option B) AC Milan was successful even though the libero was killed off. Option C is easily interpreted from the sentence that the libero was introduced in t`` he sixties as the Italian default and it remained so for another quarter of a century before getting killed off. Since the libero was killed in the eighties, the Italians seldom used it since late eighties. So, option E is implied as well. The sentence says that AC Milan was successful along with the libero and later without a libero too, but it never says he wasn't successful himself during those twenty five years. Thus, option D is not implied and is clearly a better choice over option A.

29. D All options except D are antonyms of each other. Study and analyse are synonyms of each other. Hence, option D is the correct choice.

30. D The argument states that the literacy rate fell between 1991 and 2001 and rose again in the period 2001-2006 concluding that India progressed in terms of literacy rate. It says that the drop in the rate from 1991 to 2001 was greater than the rise in the period 2001-2006 which does not indicate progress from 1991 to 2006 since there is a net fall in the literacy rate during this period. Thus, option D refutes the conclusion drawn in the argument.

31. B *'Embezzlement'* means fraudulent appropriation of property by a person to whom it has been entrusted. Thus, Option B is correct.

32. A The paragraph must open with option E as it introduces the topic of factors influencing forecasts. A follows E as it classifies the factors mentioned in E. C clearly has to come after A since it gives *'another way to classify'* these factors. Sentences D and B follow in that order since that is how they are mentioned in option C.

33. A Option A is true as it is mentioned in the last lines of the second paragraph. Consider these lines-*'the fact that two variables may be so related...does not imply that...value of one can be obtained from the other...'* Thus option A is the correct choice.

34. D Option D summarizes the ideas mentioned in the passage. An individual may benefit from his agency by enjoying greater well-being even though the factors which give rise to such an agency are beyond the well-being aspect. The Japanese people work hard as a result of their individual agencies. This hard work results in industrial success which ultimately contributes to their well-being. The reason for them exhibiting such behavior, of duty, loyalty and goodwill lies not in their pursuit for this well-being; rather it is a result of their agency. Hence, option D is in line with the ideas mentioned in the passage.

35. E Option E 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 E.

36. D Statement I comes directly from the first line of the second paragraph, *'To recognize the distinction between...'* Statement III is also mentioned in the passage, *'Agency may be seen as important (not just instrumentally...but also intrinsically').* Statement II is incorrect since the passage clearly states that agency and well-being are not independent of each other, each individual has a little of both and hence they can't be conceptualized in terms of either one of them alone.

37. E In all the options except E the subject pursues his agency aspects-goals, commitments, values, etc. and as a result hopes to fulfill his well-being aspect. An ascetic is one, who has renounced all material comforts of the world and leads a life of self-discipline. Here, he hopes to fulfill just his agency aspect without caring for his well being.

38. E *'Ability of'* is incorrect usage. The preposition used with ability is *'to'.* Hence, option E is grammatically incorrect.

39. D All options except D are inferred from the conversation. Alfredo talks about Argentina being a football powerhouse in the past, while Diego talks about the team being a powerhouse in the present. The two are talking about different time frames and hence it can't be inferred that either of them may completely disagree with the other.

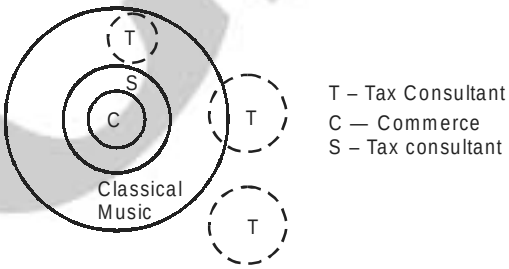
40. D The pronoun used in this sentence should be third person singular, since it refers to *'people'* who had challenged the manager earlier but now support him. *'Those'* is the correct pronoun that should be used here. Hence, option D is correct.

41. D The argument states that ethnologists divide an organism's actions as learned i.e. experience based and instinctive i.e. genotype based behavior. Some current scholars reject this distinction by saying that all animal behavior is a result of predictable interaction of experience and genotype. This means if all organisms have identical genotype and all of them undergo identical experience, they would exhibit identical behavior. Option D strengths the claim made by the current scholars by stating the same.

42. A 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.Option A is correct.

43. C Trade deficit means the negative balance of trade in which a country's imports exceed its exports. Option C is inconsistent because had the exports from China to Indonesia decreased, Indonesia's trade deficit would not have increased.

44. D The Venn diagram given below explains how each of the other options are incorrect except option D.



Since the set of tax consultants can lie anywhere outside sports i.e. completely outside the set of classical music, partly in it or completely outside it, we cannot say all tax consultants or no tax consultant enjoys classical music. This clearly negates options A, B and C. Option E is false as well since the set of commerce lies within the sports set and the sports set in turn lies within classical music. Which means the commerce set lies within classical music too. The commerce set lies within the sports set. The tax consultant set and sports set are disjoined sets. Thus, commerce and tax consultant sets are disjoined too. This makes D the correct option.

45. B Head and chief mean the same thing, so it is incorrect to say head chief. Moreover, a housefly in the soup would upset a chef. So, chef is more appropriate as compared to chief. Thus, options A and C are ruled out. Housefly is not hyphenated nor there do any space between house and fly in this context.

46. D All other options are synonyms of hypothesize which means to suppose by hypothesis. Refute means to negate or reject something which is an antonym of hypothesize.

47. B E opens the passage as it introduces the topic of warehousing in India. C gives the reason why the concept of warehousing is not new. B takes the idea of warehousing being old further by giving the examples of castes. This is followed by D which gives the other side of the story (*'However'* marks that shift). A follows D since it starts with *'in fact'* which further adds to D.

48. E* Concurrence means meeting of minds. Agreement, accord, consensus and coincidence all mean the same. Although harmony is also very close in meaning, it is the most appropriate choice because harmony is consequence of concurrence and so it is sometimes used in the same context. Out of the given options, harmony is the best choice.

49. E (ii) and (i) form a mandatory pair; since (ii) talks about a government harming its own economy and (i) states how the government can do this. (v) follows (i) as it contradicts the idea stated in (i) that government policies have impact on the economy. It says '*there is not the slightest evidence...'*. (iii) and (iv) are a mandatory pair too since 'they' in (iv) refers to 'business cycles' in (iii). Hence, option E is the correct choice.

50. C The argument can be broken down to simpler terms. It states that if A is reduced, B increases which causes an increase in C. Option C is analogous to this. It says if number of words is more, the advertisement won't be read, and if it isn't read, the product won't be sold. Thus, reducing the number of words in an advertisement would lead to an increase in readership and subsequently increase in sales.

51. E 'Conservatively' fits in the sentence perfectly. The manager doesn't want to escalate the figures too much, nor does he want to reduce them so much that they demotivate the board members. So, he wants to quote a moderate or a *'conservative'* number.

52. D The author is of the view that SEZs should be limited in number. Thus, he opposes the proliferation of SEZs in India. Option A is incorrect; it should have SEZs instead of EPZs. The passage neither talks about the advantages or disadvantages of SEZs nor does it compare between Indian EPZs and Chinese SEZs. Hence, option B and C both are incorrect. Option E is incorrect in context to the passage.

53. C The passage mentions that the governments cite fiscal responsibility laws as limiting factors in limiting investment on infrastructure. Nowhere does the author indicate that these laws actually limit the investment on infrastructure, these may well be excuses on the part of non-performing governments.

54. C The author categorically remarks about educational institutes getting SEZ status. He says that SEZs would be successful only if they are few in number and of adequate size. Thus, he opposes giving SEZ status to any and every industry like education. The author also opposes the qualifiers that beat the very purpose of SEZs. Option C is correct as the author does not have any issues with giving tax benefits to promote SEZs; in fact he says that tax benefits lure investors, which is the purpose of SEZs in the first place. The author also opposes options D and E as mentioned in the third paragraph. *'Even after three years...the states refusing to give up the monopoly of their electricity board'* and *'While swearing by growth...governments cite the fiscal responsibility laws...to improve the infrastructure.*

55. D The passage mentions that even after three years of the enactment of Electricity Act of 2003, investment is *'still'* a trickle. Thus, the passage was most likely written in 2006.

56. A Statement I can be inferred from the line *'In other words...we could understand the most precious of processes: innovation.'* Statement II can be inferred from the line *'Without evolution technologies seem to...'* Statement III is incorrect. The author is very positive about the process of technological evolution and has no doubt regarding the evolution of technology. Statement IV is incorrect because evolution is a *process* as a result of which some objects or species are related to each other by the virtue of common descent. This is very different from saying that 'evolution is a *sense* of common relatedness'.

57. E Statements III, IV and V all strengthen the author's premise that the question of technological evolution hasn't be solved yet. Statement III states that social scientists studying technology haven't studied the earlier technologies and so the question remains unanswered. Statement IV states that technologies like laser, radar etc. seem to just appear, out of the blue *unlike* biological species which are related to their earlier versions. This means that the evolution aspect in these technologies has not been looked into. The difference in the principle of radar and radio also suggests that even though radar is said to descend from radio, the underlying evolution of technology hasn't been understood properly so that radar can be traced back to a radio.

SECTION C: QUANTITATIVE ABILITY

58. C Vice Presidents of HR, Operation and Sales visit the plant after a gap of 2 days, 3 days and 5 days respectively. So, VP (HR), VP (Operation) and VP (Sales) visit the plant on every 3rd, 4th and 6th day respectively.
Therefore, CEO meets the VPs on every 12^{th} day (L.C.M. of 3, 4 and 6) i.e. on 3rd, 15th, 27th of January and 8th of February, but CEO is on leave till 28th of January.
Hence, CEO will meet all the three VPs on 8th of February.

59. A Let the salaries (in ₹ lakh) of 5 VPs (Vice presidents) be a, b, c, d and e respectively in ascending order.
Median salary is ₹5 lakh i.e. c = 5

As, mode of the salaries is ₹8 lakh, it implies that at least two VPs are getting salaries of ₹8 lakh. Also, salaries of only two VPs are greater than ₹5 lakh.
Hence, d = e = 8
Given mean of the salaries is ₹5 lakh.

$$\therefore \frac{a+b+c+d+e}{5} = 5$$

$$\Rightarrow \frac{a+b+5+8+8}{5} = 5 \Rightarrow a+b = 4$$

$\Rightarrow$ a = 2 and b = 2 or a = 1 and b = 3 (As salaries are in integer lakh).
But if a = 2 and b = 2, then ₹8 lakh will not be the only mode.
Therefore, a = 1 lakh and b = 3 lakh
Hence, required sum = 8 + 1 = ₹ 9lakh.

60. * As there is no depiction of year 2010 in the given chart, we cannot make any deduction about year 2010. Hence, the question cannot be answered on the basis of the given information.

61. E Average percentage increase in revenues of Yahoo from 4th to 6th year

$$\approx \frac{1}{2}\left[\frac{1150-250}{250}\times 100\right] \approx \frac{1}{2}\times 360 \approx 180\%$$

Average percentage increase in revenues of Facebook from 4th to 6th year

$$\approx \frac{1}{2}\left[\frac{2000-350}{350}\times 100\right] \approx \frac{471}{2} \approx 235.5\ \%$$

Required difference = 235.5 – 180 = 55.5%.
Though there is no option which is in terms of decimal and there is no mention of approximate difference in the question, the option closest to 55.5% amongst the given options is (E).

62. A Percentage growth in revenues of Google from 5th to 6th year $= \frac{3200-1500}{1500} \times 100 \approx 113.33\%$

Revenue of Facebook in 6th year in case its growth rate from 5th to 6th year had been the same as that of Google

$= 750 + \frac{750 \times 113.33}{100} = \$1599.975 \approx \$1600$ million.

63. E Let 'v' be the volume (in cubic units) of the bucket with one of the sisters and 'x' be the volume (in cubic units) of water splashed out of the bucket.

Percentage volume of the water splashed $= \left(\frac{x}{v}\right) \times 100$

For percentage volume of the water splashed to be maximum, 'v' should be minimum as 'x' is the constant.
As volume of bucket with Bina is lowest, hence Bina's bucket lost the maximum water as a percentage of its capacity.

64. E Let the volume (in cubic units) and skin thickness (in units) of the watermelon be 'V' and 't' respectively.
Then, volume (in cubic units) of watermelon after peeling = V – (t × surface area)
As the customer's objective should be to have the maximum volume of water-melon after peeling, he or she will choose the shape which is left with maximum volume after peeling.
Among all the given shapes of same volume, sphere has the minimum surface area.

65. C Amount at the end of the 1st year after repayment = 6000 × 1.05 – 1200 = ₹5,100.
Therefore, amount at the beginning of the 2nd year will be ₹5,100.

Amount at the end of the 2nd year after repayment = 5,100 × 1.05 – 1200 = ₹4,155.

Therefore, amount at the beginning of the 3rd year will be ₹4,155.

Alternate method:

Year	Amount at the beginning of the year	Interest	Repayment	Amount after repayment
1st	₹6,000	$\frac{600 \times 5 \times 1}{100} = ₹300$	₹1,200	6000 + 300 – 1200 = ₹5,100
2nd	₹5,100	$\frac{5100 \times 5 \times 1}{100} = ₹255$	₹1, 200	5100 + 255 – 1200 = ₹4,155
3rd	₹4,155			

66. E Let radius (in cm) of a smaller sphere be 'r'.
Volume of the larger sphere = Total volume of 1000 smaller spheres

$\Rightarrow \frac{4}{3}\pi(10)^3 = 1000 \times \frac{4}{3}\pi r^3 \Rightarrow r = 1$ cm

Surface area of the larger sphere

$= 4\pi(10)^2 = 400\pi$ cm^2

Total surface area of 1000 smaller spheres

$= 1000 \times 4\pi(1)^2 = 4000\pi$ cm^2

Therefore, increase in the surface area of the metal
$= 4000\pi - 400\pi = 3600\pi = 9 \times 400\pi$ cm^2
Hence, surface area of the metal is increased by 9 times.

67. D Let volume (in litres) of the jug be 'x'.
As after two replacements there is five litres of orange juice in the container,

$5 = 10 \times \left(1 - \frac{x}{10}\right)^2$

$\Rightarrow 10 - x = \sqrt{50} \Rightarrow x = 2.929$ litres.

68. A Let the number of pieces of Kajubarfi, Gulabjamun and Sandesh purchased by Nikhil be a, b and c respectively. Then,
a + b + c = 100 and 10a + 3b + 0.5c = 100
After solving, we get

$19a + 5b = 100 \Rightarrow b = \frac{100 - 19a}{5}$

As b is a positive integer, a = 5 and hence b = 1.

69. B Let the number of pots with the two sons be 'n'. Therefore the amount (in ₹) received for selling these pots will be n^2. Let number of packets of potato chips with the first son be 'x' and the price (in ₹) of a packet of banana chips be 'a'.

Son	1st son	2nd son
No. of packets of Banana Chips	1	0
No. of packets of Potato Chips	x	x + 1

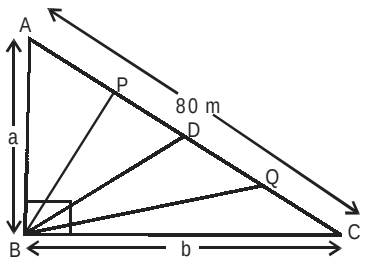
Total number of packets with 1st son = 2nd son
= x + 1

$\therefore n^2 = 10 \times [x + (x+1)] + a \Rightarrow n^2 = 10 \times (2x+1) + a$

It can be seen from the above expression that tenth digit of n^2 is an odd number.
As the division between both the sons is financially equitable, therefore n^2 i.e. n is an even number but does not end with 0 because value of 'a' is less than 10.
Hence, units digit of n can be either 4 or 6 because the tenth digit of n^2 is an odd number and in both the case units digit of n^2 will be 6.
Therefore price of a packet of banana chips will be ₹6 and total amount (in ₹) spent by the first son and the second son will be 10x + 6 and 10x + 10 respectively.
Hence, 2nd son will give ₹2 to the 1st son to make the division financially equitable.

Alternative Method: As n is even then by hit and trial when n^2 = 36, then 2nd son will give ₹2 to 1st son.

70. C



Given AC = 80 m, then AP = PD = DQ = QC = 20 m and BD = 40 m. (As D is mid-point of AC, so it is the circumcentre of ΔABC)

Applying Apollonius theorem in ΔABD,

$AB^2 + BD^2 = 2(BP^2 + PD^2)$

$\Rightarrow a^2 + 40^2 = 2(BP^2 + 20^2)$ ... (i)

Again applying Apollonius theorem in ΔBDC,

$BC^2 + BD^2 = 2(BQ^2 + DQ^2)$

$\Rightarrow b^2 + 40^2 = 2(BQ^2 + 20^2)$ ... (ii)

Adding equations (i) and (ii), we get

$a^2 + b^2 + 2\times 40^2 = 2\left(BP^2 + 20^2 + BQ^2 + 20^2\right)$

$\Rightarrow\ 80^2 + 2\times 40^2 = 2\left(BP^2 + BQ^2\right) + 40^2$

$\Rightarrow BP^2 + BQ^2 = \frac{1}{2}\left(80^2 + 40^2\right)$

$\therefore BP^2 + BQ^2 + BD^2 = \frac{1}{2}\left(80^2 + 40^2\right) + 40^2 = 5600$ m.

For questions 71 and 72:

71. A Total amount of petrol consumed during the journey
= 10 + (20 + 15 +10) – 5 = 50 liters
Total distance covered during the journey
= 800 – 400 = 400 km

Mileage of the car $= \frac{400}{50} = 8$ km/liter.

72. D Ramya's car has 5 liters of petrol before starting for Shanpur and maximum capacity of the tank of her car is 35 liters, so she can fill a maximum of 30 liters petrol at Rampur. But she would not do so as the cost of petrol at pumps on the way is ₹40/liter and ₹35/liter which is less than the cost of petrol at Rampur (₹45/liter), since the cost is to be minimized. Hence, she will purchase enough petrol at Rampur so that she can reach the first pump on the way while returning from Rampur to Shanpur. At first pump as well she will purchase enough petrol so that she can reach the second pump since the cost of petrol at the second pump is less.
Minimum money required

$= \frac{150-(5\times 8)}{8}\times 45 + \frac{50}{8}\times 40 + \frac{200}{8}\times 35$

= ₹1,743.75 ≈ ₹1,744
(Since, the mileage of the car is 8 km/liter)

73. B Required dose administered to the patient

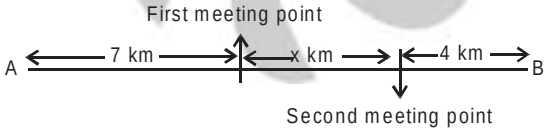
$= \frac{10}{50}\times 1 + \frac{15}{50}\times 2 + \frac{30}{50}\times 4 = 3.20$ tablets.

74. B Let the quantity of 12% solution replaced be x liters.

$\therefore (27-x)\times\frac{12}{100} + x\times\frac{39}{100} = 27\times\frac{21}{100}$

$\Rightarrow$ x = 9 liters.

75. D Let the distance (in km) between the points when the buses meet for the first and the second time be 'x'.

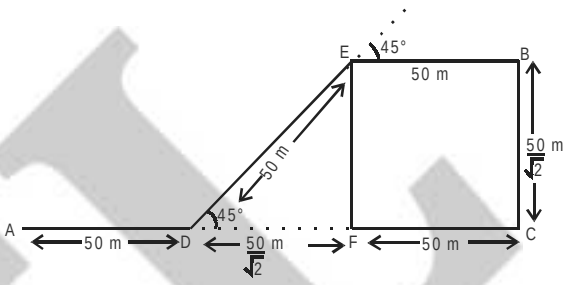


Total distance covered by both the buses together before first meet is (11 + x) km. Total distance travelled by both the buses together from first to second meeting point will be double of the net distance traveled till first meeting i.e. 2 × (11 + x) km. To cover this double distance each bus will take double the time and hence distance traveled by each bus from first to second meeting point will be double of what each of the buses travelled till first meeting.

$\therefore (x+8) = 2\times 7 \Rightarrow x = 6$ km

(∵ Bus from terminus A travels 7 km before first meeting and (x + 8) km between the first and second meeting).
Hence, total distance between terminus A and terminus B = (7 + 6 + 4) km = 17 km.
Therefore, cost of running a bus for a day
= ₹17 × 2 × 5 × 20 = ₹3,400
Hence, cost of running both the buses
= ₹3,400 × 2 = ₹6,800.

76. E According to the given information, following diagram can be drawn.



In the above diagram it can be seen that the shortest distance between villages A and B is AB.
In triangle DEF,

DF = EF $= \frac{50}{\sqrt{2}}$ (∵ It is a 45° – 45° – 90° triangle)

Therefore, AB $= \sqrt{\left(100+\frac{50}{\sqrt{2}}\right)^2 + \left(\frac{50}{\sqrt{2}}\right)^2} = 50\sqrt{5+2\sqrt{2}}$

$\Rightarrow AB = 50\sqrt{5+\sqrt{8}} = a\sqrt{b+\sqrt{c}}$

$\Rightarrow$ a = 50, b = 5 and c = 8

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

77. D Let cost (in ₹) of a roti, a tadka and a cup of tea be 'x', 'y' and 'z' respectively.
As per the given information,

$10x + 4y + z = 80$ ... (i)

$7x + 3y + z = 60$ ... (ii)

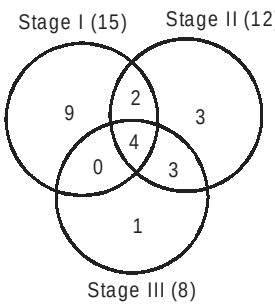
By (ii) × 3 – (i) × 2, we get

$x + y + z = 20$

Therefore, amount paid by Anthony

$= 5x + 5y + 5z = 5\times 20 =$ ₹100.

78. B Given information can be shown as follows:



Hence, number of times when software failed in a single stage only = 9 + 3 + 1 = 13.

79. E Volume of the cone of radius 'r' and height 'h' $= \frac{1}{3}\pi r^2 h$

Volume of the conical writing equipment

$= \frac{1}{3}\pi \times \left(\frac{5}{2}\times 10^{-1}\right)^2 \times 7 = \frac{11}{24}\text{cm}^3$

Hence, $\frac{11}{24}\text{cm}^3$ cream can write 330 words.

Number of words that can be written with 1cm^3 cream

$= 330 \times \frac{24}{11} = 720$

Also, $\frac{3}{5}\text{liter} = 600\ \text{cm}^3 \quad (\because 1\,\text{liter} = 1000\,\text{cm}^3)$

Therefore, number of words that can be written with three fifth of a liter of the cream = 600 × 720 = 432000.

80. E Runs made through 4's $= 306 \times \frac{43.14}{100} \approx 132$

Hence, number of 4's hit by the batsman = 33

Runs made through 6's $= 306 \times \frac{3.92}{100} \approx 12$

Hence, number of 6's hit by the batsman = 2.

81. E* Information given in question 81 is incomplete. So we cannot answer the question. If we use the total runs score(= 306) by the batsman given in question 80, then we can answer the question.

According to question, total runs scored by the batsman = $306 + 20 - 4 = 322$

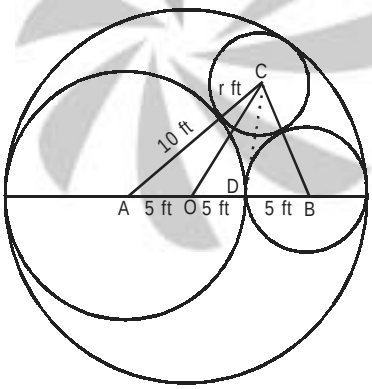
Runs made through 4's by the batsman

$= 306 \times \frac{43.14}{100} + 20 \approx 152$

Therefore, required central angle

$= 152 \times \frac{360}{322} = 169.94° \approx 170°.$

82. C Let the radius (in feet) of the largest disc that can be cut from the remaining portion of the plywood piece be 'r'.



Let DC be x feet.

Applying Apollonius theorem in triangle ACD,

$(10 + r)^2 + x^2 = 2\left(5^2 + (15 - r)^2\right)$

$\Rightarrow x^2 - r^2 + 80r = 400 \quad \ldots(i)$

Similarly applying Apollonius theorem in triangle OCB,

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

$\Rightarrow x^2 - r^2 + 10r = 100 \quad \ldots(ii)$

Subtracting (ii) from (i), we get

$70\ r = 300 \Rightarrow r = \frac{30}{7}$ feet.

Therefore, required diameter = $\frac{60}{7} \approx 8.57$ feets.

83. E From statement (i) and (ii) we can conclude that sum of ages of three sons of Jose is 13.

From statement (v) and (vi) it can be concluded that both of the younger sons are two years of age.

Therefore, age of eldest son will be 9 years.

84. D Let the profit (in ₹) for the year be x. Then,

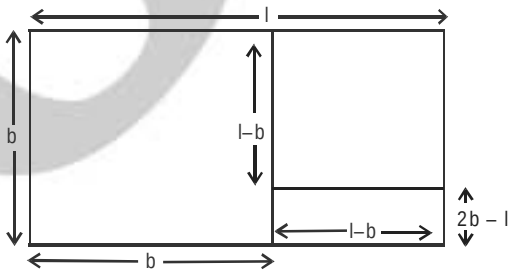
$\frac{3}{5}\times 200000 + \left(0.20 + \frac{3}{5}\times 0.8\right)\times 200000 + \left(0.35 + \frac{3}{5}\times 0.65\right)\times (x - 400000)$

$= 367000$

$\Rightarrow 256000 + 0.74 \times (x - 400000) = 367000$

$\Rightarrow x = \frac{111000}{0.74} + 400000 = ₹5,50,000.$

85. B Let the length and breadth (in units) of the original plot be 'l' and 'b' respectively. From the given information, the following diagram can be drawn.



Side of the first square plot that is cut from the original plot = b

Side of the second square plot = l – b

Length and breadth (in units) of remaining plot will be (l – b) and (2b – l) respectively. Then,

$\frac{2\times((l-b)+(2b-l))}{2\times(l+b)} = \frac{3}{8}$

$\Rightarrow l : b = 5 : 3$

Let length and breadth (in units) of original plot be '5x' and '3x' respectively.

Cost price of original plot

$= 1000 \times 5x \times 3x = ₹15000x^2$

Total selling price of the plot

$= ₹16500x^2$

Let the remaining land be sold at the price ₹p/sqft.

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

$\Rightarrow p = ₹550/\text{sqft.}$