KEY AND SOLUTIONS
IIFT 2017 PAPER SET B
Answer Key

1.	(B)	**16.**	(A)	**31.**	(C)	**46.**	(D)	**61.**	(B)	**76.**	(B)	**91.**	(C)	**106.**	(A)
2.	(C)	**17.**	(D)	**32.**	(D)	**47.**	(C)	**62.**	(A)	**77.**	(A)	**92.**	(B)	**107.**	(C)
3.	(D)	**18.**	(C)	**33.**	(B)	**48.**	(B)	**63.**	(C)	**78.**	(B)	**93.**	(A)	**108.**	(C)
4.	(D)	**19.**	(A)	**34.**	(C)	**49.**	(B)	**64.**	(A)	**79.**	(A)	**94.**	(D)	**109.**	(C)
5.	(A)	**20.**	(D)	**35.**	(C)	**50.**	(C)	**65.**	(B)	**80.**	(B)	**95.**	(C)	**110.**	(A)
6.	(A)	**21.**	(B)	**36.**	(C)	**51.**	(D)	**66.**	(D)	**81.**	(A)	**96.**	(B)	**111.**	(A)
7.	(B)	**22.**	(D)	**37.**	(A)	**52.**	(C)	**67.**	(B)	**82.**	(B)	**97.**	(D)	**112.**	(D)
8.	(A)	**23.**	(C)	**38.**	(A)	**53.**	(D)	**68.**	(C)	**83.**	(D)	**98.**	(D)	**113.**	(B)
9.	(A)	**24.**	(B)	**39.**	(C)	**54.**	(A)	**69.**	(A)	**84.**	(A)	**99.**	(A)	**114.**	(D)
10.	(B)	**25.**	(C)	**40.**	(B)	**55.**	(B)	**70.**	(B)	**85.**	(D)	**100.**	(C)		
11.	(D)	**26.**	(A)	**41.**	(A)	**56.**	(D)	**71.**	(C)	**86.**	(A)	**101.**	(D)		
12.	(A)	**27.**	(B)	**42.**	(C)	**57.**	(C)	**72.**	(C)	**87.**	(B)	**102.**	(C)		
13.	(D)	**28.**	(D)	**43.**	(D)	**58.**	(A)	**73.**	(B)	**88.**	(C)	**103.**	(A, C)		
14.	(C)	**29.**	(A)	**44.**	(D)	**59.**	(A)	**74.**	(D)	**89.**	(A)	**104.**	(D)		
15.	(B)	**30.**	(C)	**45.**	(D)	**60.**	(B)	**75.**	(A)	**90.**	(A)	**105.**	(B)		

SOLUTIONS

Solutions for questions 1 to 5:

Phrase: A phrase is a grammatical term referring to a group of words that does not include a subject and verb simultaneously i.e. though a phrase may contain either a subject or a verb; it never contains both a subject and a verb. It is a group of words that makes sense but not complete sense.

Noun phrase: A noun phrase includes a noun (a person, place, or thing) and the modifiers either before or after which distinguish it. E.g. the nice neighbor, a comfortable bed.

Adverbial phrase: Adverbial phrases are phrases that act as adverbs. They modify verbs, adverbs or adjectives. E.g. around the block (modifying where), after the meal (modifying when), in silence (modifying how).

Adjective phrase: A word group that has an adjective as its head is called an adjective phrase. Note that the adjective in this phrase may be accompanied by other words such as determiners, modifiers etc. E.g. Adjective phrases can go before a noun (attributive position). They can also go after a linking verb like be (predicative position). E.g. He was wearing a dark brown suit. (Here the adjective phrase 'a dark brown' modifies the noun suit).

The fish tasted awfully bad. (Here the adjective phrase 'awfully bad' says something about the fish. It is placed after the copular or linking verb tasted but does not explain it, instead it explains the noun 'fish".

The adjective in an adjective phrase may be modified by an adverb. When it is modified by an adverb, the adverb goes before the adjective. The adjective may also be modified by other determiners like articles, possessives and demonstratives. E.g. 'my cute little daughter' [Here the adjective phrase 'my cute little' consists of a possessive (my) and two adjectives (cute and little)].

Prepositional Phrases: These function as adjectives or adverbs. Prepositional phrases are groups of words beginning with a preposition and ending with an object of the preposition i.e. noun or pronoun that follows the preposition. E.g. The cake *with nuts* (prepositional phrase) fell *onto the floor* (prepositional phrase).

Verb Phrases: These function as verbs. Keep in mind that in order to be a verb phrase, the verb must be made up of a main verb and at least one helping verb. Verb Phrases Act as Verbs. The point here is that they are made up of multiple words and all of the words come together to act as one part of speech, a verb. E.g. She *must have* (helping verb) *jumped (main verb)* across the stream. He *has* (helping verb) *become* (main verb) a great cook.

Verbal Phrases: The following three phrases (gerunds, participles, and infinitives) are called verbals. This is because they are formed from verbs. (But be careful! They don't function as verbs).

Infinitive Phrases: An infinitive phrase begins with an infinitive [to + simple form of the verb]. It often includes objects and/or modifiers that complete the thought. The pattern looks like this: infinitive + object (s) and / or modifier (s). .E.g. 1. *To avoid* (infinitive) *another lecture from Michelle* (objects) *on the benefits of vegetarianism* (modifier) was Aaron's hope for their date at a nice restaurant. Take a note that *'To avoid another lecture from Michelle on the benefits of vegetarianism'* functions as a noun because it is the subject of the sentence. 2. Ryan decided to mow the long grass on the front lawn *to keep* infinitive*) his neighbors* (object) *from complaining to the homeowners association* (modifier). Keep in mind that *'To keep his neighbors from complaining to the*

homeowners association' functions as an adverb because it explains why Ryan mowed the lawn.

Participle Phrase: A participle phrase will begin with a present or past participle. If the participle is present, it will dependably end in 'ing'. Likewise, a regular past participle will end in a consistent 'ed'. Irregular past participles, unfortunately, conclude in all kinds of ways. Since all phrases require two or more words, a participle phrase will often include objects and/or modifiers that complete the thought. The pattern looks like this: participle + object (s) and / or modifier (s). E.g. *Flexing* (participle) *his muscles* (object) in front of the bathroom mirror (modifier), *Ripped* (participle) *from a spiral-ring notebook* (object).

Remember that 'Participle phrases' always function as adjectives, adding description to the sentence. E.g.: The stock clerk *lining up* (participle) *cartons of orange juice* (object) made sure the expiration date faced the back of the cooler. 'Lining up cartons of orange juice' modifies the noun 'clerk'.

Gerund Phrase: A gerund phrase will begin with a gerund, an 'ing' word, and will often include other modifiers and/or objects. The pattern looks like this: gerund + object (s) and / or modifier (s). Gerund phrases look exactly like present participle phrases. How can we find the difference? We must determine the function of the phrase. Gerund phrases always function as nouns, so they will be subjects, subject complements, or objects in the sentence. E.g. 1. *Washing* (gerund) *our dog* (object) *Gizmo* (modifier) requires strong arms to keep the squirming, unhappy puppy in the tub. 'Washing our dog Gizmo' is the subject of the verb requires. 2. Susie tried *holding* (gerund) *the slippery trout* (object), but the fish flipped out of her hands and splashed back into the stream. 'Holding the slippery trout' is direct object of the verb tried.

Absolute Phrase: An absolute phrase combines a noun and a participle with any accompanying modifiers or objects. The pattern looks like this: noun + participle + optional object (s) and / or modifier (s).
Example 1. His *brow* (noun) *knitted* (participle) *in frustration* (modifiers).
Example 2. Her fingers (noun) flying (participle) over the piano keys (modifiers

Clause: A clause is a group of words which forms a part of a sentence and contains a subject and a predicate. Actually, it contains a verb along with its subject and modifiers. If a clause provides a complete thought on its own, then it is an independent (super-ordinate) clause; otherwise, it is a dependent (subordinate) clause)

Principal Clause: This Clause is the main part of sentence. As it contains the subject as well as the finite verb and the object, it can make complete sense itself. It does not have to depend upon any other Clause. E.g. *She wrote a letter* (principal clause) which was brief but beautiful.

Subordinate Clause: A Subordinate Clause depends on a Main Clause for its complete meaning. E.g. *Though I am poor* (subordinate clause), I am happy.

A subordinate (dependent) clause may function as a noun, an adjective or an adverb in sentence. On the basis of their function in a sentence, subordinate clauses can be divided in to following types.

1. Noun Clause
2. Adjective Clause.
3. Adverb Clause

Noun Clause A dependent clause that functions as a noun in a sentence is called noun clause. A noun clause performs same function like a noun in a sentence. E.g. *What he did* made a problem for his family. In the given sentence the clause 'what he did' functions as a noun, hence it is a noun clause. A noun clause works as a noun that acts as a subject, object, or predicate in a sentence. A noun clause starts with words *"that, what, whatever, who, whom, whoever, whomever"*.

Examples:

Whatever you learn will help you in future.

(noun clause as a subject)

What you said made me laugh.

(noun clause as a subject)

He knows *that he will pass the test.*

(noun clause as an object)

Now I realize *what he would have thought.*

(noun clause as an object)

Adjective Clause: A dependent clause that functions as an adjective in a sentence is called adjective clause. An adjective clause works like adjective in a sentence. The function of an adjective is to modify (describe) a noun or a pronoun. Similarly a noun clause modifies a noun or a pronoun. E.g. He wears a shirt *which looks nice.*

The clause "which looks nice" in above sentence is an adjective clause because it modifies noun "shirt" in the sentence. An adjective clause always precedes the noun it modifies. E.g.

- I met the boy who had helped me.
- An apple that smells bad is rotten.
- The book which I like is helpful in preparation for test.
- The house where I live consists of four rooms.
- The person who was shouting needed help.

Adjective clause begins with relative pronoun (that, who, whom, whose, which, or whose) and is also relative clause.

Adjective (relative) clauses can be restrictive clause or nonrestrictive clause

Adverb Clause: Adverb clauses are clauses that function as adverbs. Since they are dependent clauses, they must have a subordinating conjunction to connect them to the other clause. This will help you recognize an adverb clause. Adverb clauses can modify by telling the place, time, cause, and purpose of an action. They can also show concession and condition.

An adverb clause like an adverb modifies a verb, adjective clause or other adverb clause in a sentence. It modifies (describes) the situation in main clause in terms of "time, frequency (how often), cause and effect, contrast, condition, intensity (to what extent)."

The subordinating conjunctions used for adverb clauses are as follows.

Time: when, whenever, since, until, before, after, while, as, by the time, as soon as

Cause and effect: because, since, now that, as long as, so, so that,

Contrast: although, even, whereas, while, though

Condition: if, unless, only if, whether or not, even if, providing or provided that, in case

Basically they answer the questions: where?, when?, why?, and under what conditions? E.g. *wherever there is music* (adverbial clause), people will often dance. She passed the course *because she worked hard* (adverb clause).

Phrases vs. Clauses: A phrase is any group of words that does not contain a subject completing an action.

When a group of words contains a subject doing an action (subject-verb), it becomes a clause.

Relative Clause: A relative clause begins with a relative pronoun [such as who, whom, whose, which, or that] or a relative adverb [when, where, or why]. The patterns look like these: Relative Pronoun or Adverb + Subject + Verb = Incomplete Thought or Relative Pronoun as Subject + Verb = Incomplete Thought. E.g. *Whom* (relative pronoun) *Mrs. Russell* (subject) *hit* (verb) in the head with a chalk eraser.

Where (relative adverb) *he* (subject) *chews and drools* (verbs) with great enthusiasm.

Like subordinate clauses, relative clauses cannot stand alone as complete sentences. We must connect them to main clauses to finish the thought. E.g. Anthony ran to get paper towels for the cola *that had spilled over the glass and splashed onto the counter.*

1. **Choice (B)**
2. Infinitive noun (subject) phrase **Choice (C)**
3. **Choice (D)**
4. Infinitive noun (object) phrase **Choice (C)**
5. **Choice (A)**

Rules for using commas

Contrary to popular belief, commas don't just signify pauses in a sentence.

In fact, precise rules govern when to use this punctuation mark. When followed, they lay the groundwork for clear written communication.

- **1. Use a comma before any coordinating conjunction (and, but, for, or, nor, so, yet) that links two independent clauses.**
- Example: "I went running, and I saw a duck."
- If we were to eliminate the second "I" from that example, the second clause would lack a subject, making it not a clause at all. In that case, it would no longer need a comma: "I went running and saw a duck."
- **Use a comma after a dependent clause that starts a sentence.** Example: "When I went running, I saw a duck."
- **Use commas to offset appositives from the rest of the sentence.**
- Appositives act as synonyms for a juxtaposed word or phrase. For example, "While running, I saw a mallard, a kind of duck." "A kind of duck" is the appositive, which gives more information about "a mallard."
- If the appositive occurs in the middle of the sentence, both sides of the phrase need a comma. As in, "A mallard, a kind of duck, attacked me."
- Don't let the length of an appositive confuse you. As long as the phrase somehow gives more information about its predecessor, you usually need a comma.
- "A mallard, the kind of duck I saw when I went running, attacked me."
- **Use commas to separate items in a series (Oxford comma).** For example, "I saw a duck, a magician, and a liquor store when I went running."
- For example: The sentence, "We invited the cooks, JFK, and Stalin," means the speaker sent three separate invitations: one to some cooks, one to JFK, and one to Stalin. The version without the Oxford comma, however, takes on an entirely different meaning, potentially suggesting that only one invitation was sent - to two cooks named JFK and Stalin.
- **Use a comma after introductory adverbs.**
- For Example: "Finally, I went running." "Unsurprisingly, I saw a duck when I went running."
- Adverbs that don't end in "ly," such as "when" or "while," usually introduce a dependent clause, is covered in rule number two.
- Also insert a comma when "however" starts a sentence, too. Phrases like "on the other hand" and "furthermore" also fall into this category.
- **Use a comma when attributing quotes.**
- The rule for where the comma goes, however, depends on where attribution comes.
- If attribution comes before the quote, place the comma outside the quotations marks. For Example: The runner said, "I saw a duck."
- If attribution comes after the quote, put the comma inside the quotation marks. "I saw a duck," said the runner.
- **Use a comma to separate each element in an address. Also use a comma after a city-state combination within a sentence.**
- For Example: "I work at 257 Park Ave. South, New York, N.Y., 10010." "Cleveland, Ohio, is a great city."
- **Also use a comma to separate the elements in a full date (weekday, month and day, and year). Also separate a combination of those elements from the rest of the sentence with commas.**
- For Example: " March 15, 2013, was a strange day."
- "Friday, March 15, 2013, was a strange day."
- "Friday, March 15, was a strange day."
- You don't need to add a comma when the sentence mentions only the month and year. For example: "March 2013 was a strange month."

- **Use a comma when the first word of the sentence is "yes" or "no."**
- "Yes, I saw a duck when I went running."
- "No, the duck didn't bite me."
- **Use a comma when directly addressing someone or something in a sentence. For example:** My boss often asks, "Shirniwas, is that article up yet?"
- **Use a comma between two adjectives that modify the same noun.** For example: "I saw the big, mean duck when I went running."
- Only coordinate adjectives require a comma between them. Two adjectives are coordinate if you can answer yes to both these questions: 1. Does the sentence still make sense if you reverse the order of the words?
- 2. Does the sentence still make sense if you insert "and" between the words?
- Since "I saw the mean, big duck " and "I saw the big and mean duck" both sound fine, you need the comma.
- Sentences with non-coordinate adjectives, however, don't require a comma. For example, "I lay under the powerful summer sun." "Powerful" describes "summer sun" as a whole phrase. This often occurs with adjunct nouns, a phrase where a noun acts as an adjective describing another noun - like "chicken soup" or "dance club."
- **Use a comma to offset negation in a sentence.**
- For example: "I saw a duck, not a baby seal, when I went running."
- **Use commas before every sequence of three numbers when writing a number larger than 999. (Two exceptions are writing years and house numbers.)** For example, 10,000 or 1,304,687.

6. Choice (A)

7. Choice (B)

8. Choice (A)

9.

Prefix/suffix	Meaning
a) ation	i) state or process of
b) trans	ii) across
c) ship	iii) position held
d) ambi	iv) both
e) ose	v) both

Choice (A)

10. Fret (v): be constantly or visibly anxious. For example: "She fretted about the cost of groceries"

Disquietude (N): a state of uneasiness or anxiety.

For Example: "Such passages reflect a sense of disquietude, of alienation even"

Thus, disquietude is result of fretting, In the same manner inspirit (encourage or enliven) will gives rise to confidence. **Choice (B)**

11. In a coffer one would find valuables. In the same manner in a sanctuary animals and plants would find shelter in a sanctuary. **Choice (D)**

12. Anything 'apocryphal' i.e. 'from a doubtful origin or source' would require 'corroboration' i.e. 'confirmation'. In the same manner sacrilegious (violating or misusing of what is regarded as sacred. "a sacrilegious act") would require piety the quality of being religious or reverent. "acts of piety and charity") in order to get corrected. **Choice (A)**

13. The word is 'hermetic' i.e. completely sealed, airtight or isolated. **Choice (D)**

14. To 'elucidate' is to make (something) clear; explain , in other words to throw light on something that is not clearly understood. **Choice (C)**

15. 'Piquant' is 1. Having a pleasantly sharp taste or appetizing flavour. ("a piquant tartare sauce") or 2. Pleasantly stimulating or exciting to the mind. ("a particularly piquant story.") **Choice (B)**

16. The underlined expression contains an error of redundancy i.e. 'are' has been used unnecessarily. **Choice (A)**

17. The underlined expression wants to draw our attention to 'unusual new look' of the old paintings. This can be termed as 'striking'. **Choice (D)**

18. The first para of the passage deals with a scene at an art museum , the second with the unusual newness of old paintings and the third with art restorers and art restoration. **Choice (C)**

19. The underlined expression wants to convey 'what apparently appears to be correct' **Choice (A)**

20. The underlined expression is an appropriate way of expressing the given idea. **Choice (D)**

21. Refer to the last paragraph of the given passage. **Choice (B)**

22. Refer to the first few lines of the first para of the passage. **Choice (D)**

23. Refer to the lines 'how many of us……formulaically.' **Choice (C)**

24. Refer to the last few lines of the last para of the passage. **Choice (B)**

25. Refer to the 'when you close read….Particular historical references' in the 2nd para of the passage. **Choice (C)**

26. Refer to the lines 'The second step….. data add up to'in the 2nd para of the passage. **Choice (A)**

27. Refer to the lines 'This is the first step…..for its deeper meaning' in para 3rd of the passage. **Choice (B)**

28. Refer to the paragraph and the last few lines of the 3rd paragraph of the passage. **Choice (D)**

29. The given passage deals with dealing with economic crisis. The author shares his experience in handling as the head of the Reserve Bank of India. During this

process he has mentioned the year 2008 a number of times. This clearly hints at the financial crisis.

Choice (A)

30. Refer to the lines 'This is not as obvious down the line" in the first para of the passage. **Choice (C)**

31. Refer to the UK example the author has cited in the 3rd and the last paragraph of the passage. The author discusses in detail how emulating 'the UK model' of 'deposit insurance across the board' would have probably been a real disaster in the Indian context.

Choice (C)

32. Refer to the lines 'During crisis times, though…yield great synergies' in the last paragraph of the passage.

Choice (D)

33. Refer to the lines Procter & Gamble, for example …….. to its most pressing issue in the 4th paragraph of the passage. **Choice (B)**

34. After reading these lines in the 4th paragraph of the passage it becomes evident that –more the number of spreadsheets floats around a company –higher the chances of committing errors. **Choice (C)**

35. Refer to the last sentence of the 5th paragraph and the whole of the last paragraph of the passage. It has been clearly indicated that an analytics minded leader must strike a fine balance between data analysis and instincts (gut feeling). **Choice (C)**

36. Refer to the first few lines of the first paragraph of the passage. It has been clearly mentioned that although any company can generate simple descriptive statistics, analytics competitors look well beyond these simple statistics and use productive models to identify the most profitable options. **Choice (C)**

Solutions of questions 37 to 41: From the information given in the question, we can tabulate the following information:

Name	Company	City	Book
Aman	Dabur	Chennai	Historical Fiction
Manish	ITC	Patna	Business and Management
Rohit	Hindustan Unilever	Mumbai	Mystery Fiction
Sandeep	L'Oreal	Delhi	Non-Fiction
Vinay	Asian Paints	Bhopal	Classic Fiction

37. Aman got placed in Dabur. **Choice (A)**

38. Manish likes reading books on Business and Management. **Choice (A)**

39. The person who got placed in Mumbai is Rohit and he likes reading books on Mystery Fiction. **Choice (C)**

40. If Sandeep is transferred to Rohit's city and Rohit is transferred to Sandeep's city then the student who likes Mystery Fiction is Rohit and he will work in Delhi. **Choice (B)**

41. Manish is posted in Patna. **Choice (A)**

Solutions for questions 42 to 43: There are eight football teams Atletico De Kolkata (AK), Chennaiyan FC (CF), Delhi Dynamos (DD), FC Goa (FG), FC Pune City (PC), Kerala Blasters (KB), Mumbai City FC (MF) and North-East United FC (NEU). Every team played exactly one match against each other thus, every team will play 7 matches. Further it is given that Chennaiyan FC (CF) won 5 matches and played a draw with two teams. We can tabulate the rest of the information as follows:

Note: Win (W), Lost (L) and Draw (D).

Teams	(AK)	(CF)	(DD)	(FG)	(PC)	(KB)	(MF)	(NEU)
(AK)	×	D		D	D			
(CF)	D	×			W			
(DD)			×		W			
(FG)	D			×	L			
(PC)	D	L	L	W	×	W		
(KB)					L	×		
(MF)							×	
(NEU)								×

42. If Chennaiyan FC (CF) won the match against FC Goa (FG), out of the total number of matches played by FC Goa (FG), they lost two and one match ended in a draw. Now out of remaining 4 matches in order to *maximize* the score let us assume that the won all the 4 matches than, the maximum points FC Goa (FG) will be 4 (W)× 3 = 12 and 1 (D) = 1 i.e. 12 + 1 = 13 points.

Choice (C)

43. Since it is already mentioned that Chennaiyan FC (CF) won 5 matches and 2 matches ended in a draw thus, the total points scored by them will be 5 (W) × 3 = 15 and 2 (D) × 1 = 2 i.e. 15 + 2 = 17 points. Now to *minimize* the absolute difference between the scores of FC Pune City (PC) and Chennaiyan FC (CF) we need to *maximize* the number of matches won by FC Pune City (PC) which can be 4 thus the total points scored by FC Pune City (PC) will be 4 (W) × 3 = 12 and 1 (D) × 1 = 1 i.e. 12 + 1 = 13 points and the minimum absolute difference will be 17 – 13 = 4. **Choice (D)**

Solutions for questions 44 to 45: According to the information given in the question we can make the following diagram:

44: D is to the left of B and the player to the north east of B is E. **Choice (D)**

45: The total distance walked by the player will be 45 + 75 + 95 + 95 + 15 = 325 meters. **Choice (D)**

Solutions for questions 46 to 49: In these type of questions first we need to understand the processing. We can clearly see that the words are not changed but they are shuffled according to a particular rule. If we compare the first step with the input, the fifth word of the input becomes the first word of the step 1, the first word becomes the second, the sit word becomes the third, and the second word becomes the fourth and so on.

Now if we compare the second step with the first step we can see that the fourth word becomes the first word, fifth word becomes the second, third word remains the third, sixth word becomes fourth, the second word becomes fifth and seventh

becomes sixth and so on. The same patterns are applied in third and the fourth step in the same order.
To further understand the pattern we can number the words of Input as 1, 2, 3, 4, 5, 6, 7, 8. Now the first step will be 5, 1, 6, 2, 7, 3, 8, 4 and the second step will be 2, 7, 6, 3, 1, 8, 5, 4. By following the same two patterns in the same order we can find the third and the fourth step.
Further, it is given that the first batch timing is 9.30 AM and each batch is of one hour's duration. There is a rest period of one hour after the work for the fourth batch is over, so the batch timings will be 9.30 to 10.30, 10.30 to 11.30, 11.30 to 12.30, and 12.30 to 1.30 and then 1.30 to 2.30 will be break.

46. The passcode for second batch means the timings are 10.30 to 11.30. Now according to the rule the passcode for the batch staring from 2.30 will be 'if winter behind far spring be can comes'. **Choice (D)**

47. Rahul was to begin the work in the batch at 10.30 AM i.e. the second batch but he joined the next batch so according to the rule the passcode will be 'biscuit I but like not tea together and'. **Choice (C)**

48. The batch before the rest hour means the fourth batch. The pass code for the fourth batch is 'bah bah black sheep have you any wool' then the input will be 'any have wool you bah sheep bah black'. **Choice (B)**

49. If the passcode for second batch is 'India's core strength lies in unity in diversity' then the input will be 'unity core strength in diversity lies India's in'. **Choice (B)**

50. Choice (C)

Solutions for questions 51 and 52: Since these questions are of data sufficiency first we need to look at the statements individually and then find the correct combination needed to answer the question.

51.

Statement 1: Mohit is 5 ranks below Rashmi from the top: This statement simply states the position of Mohit w.r.t Rashmi, using this information alone we cannot calculate the rank of Mohit from top in the over all ranking.

Statement 2: Rashmi's rank from bottom is 44: This statement states the rank of Rashmi from bottom and thus we can calculate the rank of Rashmi from top as 70 – 44 + 1 = 27 but, there is no reference of Mohit in this statement thus, this statement is also insufficient.

Statement 3: Mohit is 5 ranks above Rashmi from the bottom: This statement alone is insufficient to find the rank of Mohit as it only states the position of Mohit with respect to Rashmi.

Now we can clearly see that in order to calculate the rank of Mohit in the overall ranking we need Statement 2 along with either Statement 1 or Statement 3:

Case 1: If we use statement 2 along with statement 1: Rashmi's rank is 27 and Mohit is 5 ranks below Rashmi so Mohit's rank will be 27 + 5 = 32.

Case 2: If we use statement 2 along with statement 3: Rashmi's rank is 27 and Mohit is 5 ranks above Rashmi from the bottom thus, Mohit's rank will be 27 – 5 = 22. **Choice (D)**

52.

Since the concept is of Coding and Decoding we know that any statement individually is insufficient to find the code of the word 'Orange' as for each word there will be three possibilities.

Further, there is no common code between the first two statements but if we look at the first and the third statement together we can clearly see that there is one code common between the two i.e. 'pa' and the common word is 'Orange'. Thus, the code for 'Orange' is 'pa'. Hence we need statement 1 and statement 3 together to answer the question.

Choice (C)

Solutions for questions 53 to 54: According to the information given in the question we can initially tabulate the following results:

Friends	Coaches	Game
A	A1	Tennis
B	A2/A3	
C	A1	
D	A2	
E	A3	Tennis
F	A2	Cricket
G	A2/A3	Volleyball

Now, it is known that none of the husband wife couple love playing the same game and no two people in the same coach play the same game. Thus C will not play Tennis. Further, we can make two cases:

Case 1: When B is in A2: If B is in A2 then, G must be in A3, the results are tabulated as follows:

Friends	Coaches	Game
A	A1	Tennis
B	A2	Volleyball
C	A1	Volleyball / Cricket
D	A2	Tennis
E	A3	Tennis
F	A2	Cricket
G	A3	Volleyball

Case 2: When B is in A3: If B is in A3 then G must be in A2, the results are tabulated as follows:

Friends	Coaches	Game
A	A1	Tennis
B	A3	Cricket
C	A1	Volleyball / Cricket
D	A2	Tennis
E	A3	Tennis
F	A2	Cricket
G	A2	Volleyball

53. C plays either Cricket of Volleyball. **Choice (D)**

54. There are two friends seated in coach A1. **Choice (A)**

Solutions for questions 55 to 56: From the given information we can tabulate the following results:

Sport	Day	Channel
Cricket	Friday	Star Sports 1
Tennis	Monday	Ten Sports 2
Kabaddi	Tuesday	Sony Six
Football	Thursday	Neo Sports

55. From the above table, the correct combination will be Neo Sports – Thursday. **Choice (B)**

56. Tennis was telecasted on Ten Sports 2 and on Monday. **Choice (D)**

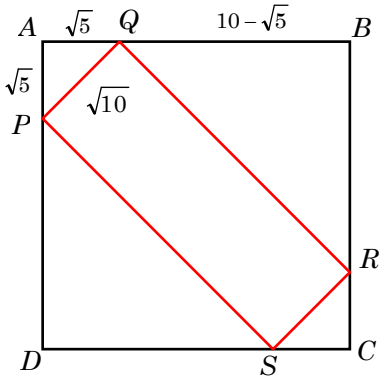
57. Suppose the loan taken is p and it is taken for t years, then total amount paid for the loans will be

$p+\frac{p\times10\times(t-1/2)}{100}$ and $p+\frac{p\times8\times t}{100}$

Since both these amounts are same, hence $t = 5/2$.

Also $p+\frac{p\times8\times t}{100}=62100\Rightarrow p=51750$. **Choice (C)**

58. Given that $PQ=\sqrt{10}$, thus $AQ=\frac{\sqrt{10}}{\sqrt{2}}=\sqrt{5}$

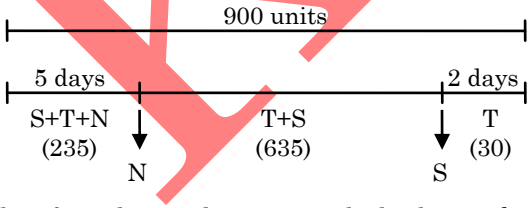


Also $QB=10-\sqrt{5}$ and $QR=QB\times\sqrt{2}=10\sqrt{2}-\sqrt{10}$

Area of $PQRS=\sqrt{10}(10\sqrt{2}-\sqrt{10})=10(\sqrt{20}-1)$.

Choice (A)

59. Let the total work be of 900 units, thus Somesh does 20 units per day, Tarun does 15 units per day and Nikhil does 12 units per day. Since all three started the work together, the number of units completed in first 5 days = (20+15+12)×5 = 235 units. The remaining work will be 900 – 235 = 665 units. Further, it is menioned that Nikhil left after 5 days and Somesh left 2 days before completion thus, for last two days Tarun was working alone and the work completed by him in last two days will be 15×2 = 30 units. The remining work 665 – 30 = 635 units will be completed by Taun and Somesh.



Therefore the total time in which the work will be completed will be $\frac{635}{35}+7=25\frac{1}{7}$ days. **Choice (A)**

60. Assume $\log_e 3 = x$, then the series can be written as

$$\left(x+\frac{x^2}{2!}+\frac{x^3}{3!}+\frac{x^4}{4!}+...\right)+\left(5x+\frac{(5x)^2}{2!}+\frac{(5x)^3}{3!}+.....\right)$$

$= e^x-1+e^{5x}-1=e^{\log_e 3}-1+e^{5\log_e 3}-1$

$= 3-1+3^5-1=244$. **Choice (B)**

61. Using the given function

$f(5)=1/6$

$f(f(5))=\frac{1}{1+1/6}=6/7$

$f(f(f(5)))=\frac{1}{1+6/7}=\frac{7}{13}$ **Choice (B)**

62. Suppose the quantities of chemicals X and Y are $100x$ and $100y$ gms respectively, then quantities of salt A and salt B in these chemicals will be $5x + 10y$ and $10x + 6y$.

Given that $5x + 10y \geq 7$ and $10x + 6y \geq 7$. Solving these in-equations we get, $x \geq \frac{2}{5}$ and $y \geq \frac{1}{2}$.

Taking minimum values of x and y, quantities of chemical X and Y can be calculated as $40g$ and $50\ g$ respectively and total cost is 40×10.5 + 50×7.8 = 810.

Choice (A)

63. Suppose number of units is n, then total variable cost is Rs 6 per unit.

Total cost = $6n$ + 50400.

Total revenue = $12n$, hence $12n = 6n$ + 50400

or n = 8400. **Choice (C)**

64. $x_2=5x_1-\frac{3}{4}x_0=5\times2-\frac{3}{4}\times4=7$

$\Rightarrow x_3=5x_2-\frac{3}{4}x_1=5\times7-\frac{3}{4}\times2=\frac{67}{2}$ **Choice (A)**

65. Let the revenues of ACN-I and ACN-II mobile phones sold in 2015 be $100x$ and $100y$ respectively. Now in 2016 the revenue from ACN-I decreases by 12 % thus the revenue from ACN-I will be $88x$ and the revenue from ACN-II increses by 9% thus the revenue from ACN-II will be $109y$. Further the overall increase in the cobined revenue is 3% thus,

$\frac{(88x+109y)-(100x+100y)}{100x+100y}=\frac{3}{100}$

$\Rightarrow \frac{x}{y}=\frac{2}{5}$. **Choice (B)**

66. Let us write expanded form of the number

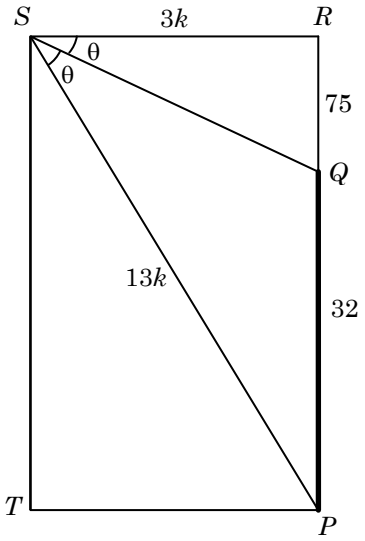
$10^{67}-87=10^{67}-1-86=\underbrace{999...999999}_{67\text{ times}}-86$

$=\underbrace{999...999913}_{65\text{ times}}$

Sum of the digits = 9×65 + 1 + 3 = 589.

Alternate solution: $10^{67}-87$ when divided by 9, leaves a remainder 4. Thus sum of the digits of the number $10^{67}-87$ is also of the form of $9k$ + 4. Only Choice (D) fits in this criterion. **Choice (D)**

67. The flag pole and mall buildings are shown in the following diagram.



Since SQ is the angle bisector, hence $\frac{SR}{SP}=\frac{75}{325}=\frac{3}{13}$

Now $ST^2=(13k)^2-(3k)^2$

$\Rightarrow 160k^2=400^2$ or $k=\frac{100}{\sqrt{10}}=10\sqrt{10}$

Hence PT = $3k = 30\sqrt{10}$. **Choice (B)**

68. Required probability = $\frac{\frac{1}{9}\times\frac{3}{5}}{\frac{2}{9}\times\frac{2}{5}+\frac{1}{9}\times\frac{3}{5}+\frac{4}{9}\times\frac{4}{5}+\frac{2}{9}\times\frac{1}{5}}$

$=\frac{3}{25}$. **Choice (C)**

69. Speed of the pest control person = $\frac{2\times\frac{22}{7}\times 49}{148}=\frac{77}{37}$

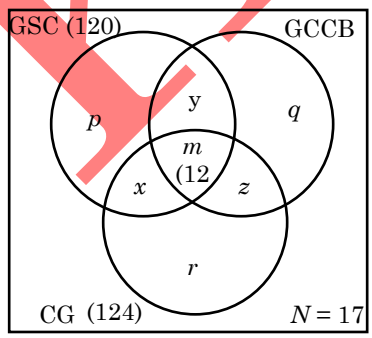
Time taken to move around a hexagon

$=\frac{54\times 6}{77/37}=155.69$

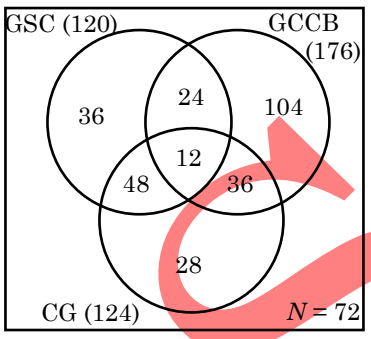
Extra time required = 155.69 – 148 = 7.69.

Choice (A)

70. We can primirarily make the venn diagram for the three courses as



Now let y = a then x = 2a and z = $\frac{2a}{4}$. Since we know that z = 12 so a = 24 now we can complete the above venn diagram as :



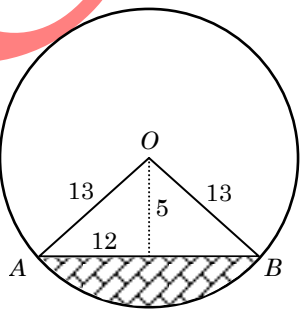
Choice (B)

71. Distance traveled by Ramesh and Sohan in 90 minutes are 4.5 km and 6 km. Since they are moving at an angle of 120°, hence distance between them is

$\sqrt{4.5^2+6^2-2\times 4.5\times 6\times\cos 120}=\sqrt{83.25}=9.12$.

Choice (C)

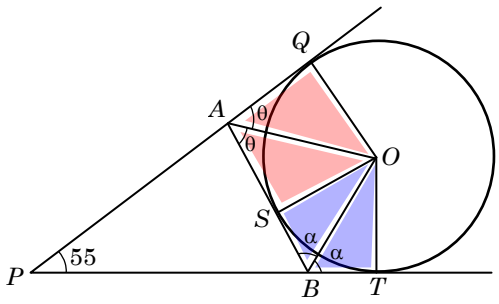
72. Height of the triangle OAB = $\sqrt{13^2-12^2}=5$



Required area will be
area of the sector – area of triangle *OAB*

$=\frac{x}{360}\times\pi(13^2)-\frac{24\times 5}{2}=\frac{169\pi x}{360}-60$ **Choice (C)**

73. Since AQ and AS are tangents, hence AQ = AS and Δ AOQ is congruent to Δ AOS.



Similarly Δ BSO is congruent to Δ BTO

Hence ∠ AOB = 180 – θ – α

In the Δ PAB, 55 + 180 – 2θ + 180 – 2α = 180

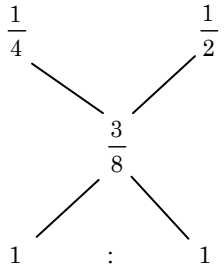
$\Rightarrow$ ∠ AOB = 180 – θ – α = 62.5°. **Choice (B)**

74. The point D is $\left(-1, -\frac{1}{2}\right)$

Equation of the line AD is $y-5=\frac{-\frac{1}{2}-5}{-2}(x-1)$

Or $11x - 4y + 9 = 0$. **Choice (D)**

75. The ratio of water and fruit pulp in first can is 1 : 3 and the same in second can is 1 : 1. Now after mixing the ratio of water and pulp is 3 : 5, applying the rule of allegation for water



The juices should be mixed in the ratio of 1 : 1 i.e. 6, 6 liters from both the cans. **Choice (A)**

76. Let the time taken by first bore well be x hours, then the time taken by second bore well will be $x - 10$ and the time taken by the third bore well will be $x - 18$. Now since first two bore wells operating together take same time as taken by the third bore well we can say

$\frac{1}{x}+\frac{1}{x-10}=\frac{1}{x-18} \Rightarrow x^2-36x+180=0$

$\Rightarrow x = 30$ or $x = 6$. Now x cannot be 6 otherwise the time taken by the second and third bore well will be negative. Thus, $x = 30$. Therefore the time required by the third bore well to fill the tank alone will be $x - 18 = 30 - 18 =$ 12 hours.

Choice (B)

Solution for questions 77 to 81: In Exhibit 1 bar graph provides the data of India's merchandize imports and different line charts provide the percentage of food, fuel, manufactures and ores & metal imports with respect to merchandize imports. In the similar way in Exhibit 2 bar graph provides India's merchandize exports and the percentage of food, fuel, manufactures and ores & metal with respect to merchandize export.

77. In 2016 manufacture exports is 75% of merchandize exports. Average merchandize exports from 2012 to 2016 is $=\frac{275+350+325+275+250}{5}=295$

Therefore, manufactures exports of India in year 2016 based on average exports is $=\frac{75}{100}\times 295 \approx 221$ Billion US Dollar. **Choice (A)**

78. Manufacture Trade Balance = Manufacture Imports – Manufacture Exports

Year	2012	2013	2014	2015	2016
Manufactures Import	175	190	202.5	187.5	192.5
Manufactures Export	178.75	210	178.75	192.5	187.5
Trade Balance	–ve	–ve	+ve	–ve	+ve

So, the proportion of positive and negative manufacture Trade Balance is 2 : 3 **Choice (B)**

79. Trade deficit in fuel will be if fuel imports are more than the exports.

Year	2012	2013	2014	2015	2016
Fuel Import	200	201.87	180	112.5	87.5
Fuel Export	55	87.5	65	27.5	25
Trade Deficit of Fuel	145	114.37	115	85	62.5

It is clear from above table that the trade deficit of fuel in 2015 has been the second lowest. **Choice (A)**

80. Import and export of fuel in 2016 is 350 and 250 Billion Us Dollar respectively, and it is grown by 10% in 2017. So, import and export in 2017 will be 385 and 275 Billion US Dollar respectively. Total share of fuel in both import and export in 2017 is 30% and 15% respectively (5% more than 2016).

Import of fuel in 2017 is $=\frac{30}{100}\times 385=115.5$

Export of fuel in 2017 is $=\frac{15}{100}\times 275=41.25$

Trade deficit of fuel in year 2017 = 115.5 – 41.25 ≈ 74 Billion Fuel Trade Deficit **Choice (B)**

81. Given that trade deficit grows by 54 billion US Dollar so, trade deficit of 2017 is 100 + 54 = 154 Billion US Dollar.

Export in 2017 = 324 Billion US Dollar

Import in 2017 = 324 + 154 = 478 Billion US Dollar

Import of food in 2017 is $=\frac{7.5}{100}\times 478=36$ Billion US Dollar. Import of fuel in 2017 is $=\frac{25}{100}\times 478=119.5$ Billion US Dollar **Choice (A)**

82. In the given table price of wheat increases four times in Jan – 17, Feb – 17, May – 17 and June – 17 and percentage increase are 11.38%, 7.29%, 5.8% and 7.53% respectively. So, the third highest percentage growth is in February – 2017. **Choice (B)**

83. Double digit growth in monthly prices is three times in wheat and one time in sorghum prices. Therefore, there are total four times double-digit growth. **Choice (D)**

84.

Ports	2011-12	2012-13	2013-14	2014-15	2015-16	Total
Kolkata	43248	39928	41386	46293	50195	221050
Paradip	54254	56552	68003	71011	76386	326206
Vizag	67420	59038	58504	58004	57033	299999
Kamarajar	14956	17885	27337	30251	32206	122635
Chennai	55707	53404	51105	52541	50058	262815
Chidambaranar	28105	28260	28642	32414	36849	154270
Cochin	20090	19845	20886	21595	22099	104515
New Mangalore	32941	37036	39365	36566	35582	181490
Mormugao	39049	17738	11739	14711	20776	104013
Mumbai	56186	58038	59184	61660	61110	296178
J.N.PX	65730	64488	62333	63801	64027	320379
Kandla	82501	93619	87005	92497	100051	455673
Total	560187	545831	555489	581344	606372	2849223
Growth		**–14356**	**9658**	**25855**	**25028**	

So, Growth is highest in 2014-15 i.e. 25855.

Choice (A)

85.

Ports	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**Growth**
Kolkata	43248	39928	41386	46293	50195	**6947**
Paradip	54254	56552	68003	71011	76386	**22132**
Vizag	67420	59038	58504	58004	57033	**–10387**
Kamarajar	14956	17885	27337	30251	32206	**17250**
Chennai	55707	53404	51105	52541	50058	**–5649**
Chidambaranar	28105	28260	28642	32414	36849	**8744**
Cochin	20090	19845	20886	21595	22099	**2009**
New Mangalore	32941	37036	39365	36566	35582	**2641**
Mormugao	39049	17738	11739	14711	20776	**–18273**
Mumbai	56186	58038	59184	61660	61110	**4924**
J.N.PX	65730	64488	62333	63801	64027	**–1703**
Kandla	82501	93619	87005	92497	100051	**17550**

3rd highest growth is for Kamarajar. **Choice (D)**

86. Total traffic ('000) of Kolkata Vizag and Cochin in 2015 –16 is = 50195 + 57033 + 22099 = 129327 and it increases successively by 10%. So, approximate traffic ('000) in 2017 – 18 is = 129327 × 1.1 × 1.1 = 156500

Choice (A)

87. Wholesale price index (WPI) of F & P in 2001 – 02 is 226.7. Wholesale price index (WPI) of F & P in 2015 – 16 is 179.8, when base of WPI is taken as 100 in 2005 – 05. So actual value of WPI in year 2015 – 16 if WPI of year 2003 – 04 is taken as 280.2 will be $\frac{179.8}{100}\times 280.2=503.8$

Therefore, the percentage change in WPI of F & P between 2001 – 02 and 2015 – 16 is $\frac{503.8-226.7}{226.7}\times 100$

= 122.2% **Choice (B)**

88.

	PA	AC	F & P	MP
WPI in 2001 – 02	168.4	161.3	226.7	144.3
WPI in 2015 – 16 Base of 2003 – 04 is 100	249.6	176.7	179.8	153.4
WPI in 2015 – 16 On Original Base	469.5	330.96	503.8	255.1
Percentage increase in WPI	178.8%	105.18%	122.2%	76.78%

Second highest percentage increase in WPI is 122.2%.

Choice (C)

89. It is clear from observation that smallest percentage increase in WPI on FA is in 2003 – 04 i.e. $\frac{181.5-179.2}{179.2}\times 100\approx 1.28\%$ **Choice (A)**

90. Let the weightage given to F & P and MP in WPI base inflation calculation in 2005 – 06 be x% and y% respectively.

Now, $104.3\times 0.4+113.6x+102.4y=104.5$

$113.6x + 102.4y = 62.78$

$x + y = 0.6$

Solving both the relations we will get $x = 0.12$ and $y = 0.48$. Therefore, the percentage weight age for F & P and MP will be 12% and 48% respectively. **Choice (A)**

91. It is clear from simple observation of F & P that WPI has registered decline more then once between two consecutive years from 2013 – 14 to 2014 – 15 and 2014 – 15 to 2015 – 16. **Choice (C)**

92.

Deviation of Output from its trend				
1998			–4.38	–0.38
1999	5.12	–1.5	–2.5	1.75
2000	6.12	–2.12	–2	–4.25
2001	4.88	–0.25		

It is clear from above table that in 1999, Quarter 1 output has the highest positive deviation from its trend.

Choice (B)

93. The average will be highest for the quarter, which has highest negative sum i.e. Quarter 3 = – 8.88.

Choice (A)

94.

Year	Initial	Final	Compound growth
1998	65	61	$\left[\left(\frac{61}{65}\right)^{\frac{1}{3}}-1\right]\times 100=-2.09\%$
1999	68	67	$\left[\left(\frac{67}{68}\right)^{\frac{1}{3}}-1\right]\times 100=-0.49\%$
2000	70	52	$\left[\left(\frac{52}{70}\right)^{\frac{1}{3}}-1\right]\times 100=-9.43\%$
2001	60	58	$\left[\left(\frac{58}{60}\right)^{\frac{1}{3}}-1\right]\times 100=-1.12\%$

Therefore, the second lowest quarterly compounded growth rate is in year 1998. **Choice (D)**

95. Annual output of year 1999 and 2000 is 261 and 237 respectively. So, the percentage change in the output growth is $\frac{237-261}{261}\times 100=-9.19\%$ **Choice (C)**

96. **Choice (B)**