



## NMAT Previous Paper 2

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## Language Skills

1. The statements A-D when arranged in the correct order form a coherent passage starting with statement 1 and ending in statement 2. Find the correct ordering.

- 1) Henry James is an example of a writer who enjoyed immense fame but little popularity.  
A) He was, above all novelists, an esoteric author.  
B) Some of his best books, I believe, never passed into second editions.  
C) His disciples had the pleasure of feeling like persons initiated into mysteries.  
D) He was subject, like a religious teacher, to all kinds of conflicting interpretations  
2) He puzzled and exasperated even intelligent people.

- A BACD  
B BCAD  
C DACB  
D DBCA  
E ACDB



### Instructions [2]

Choose the word which is most nearly the same in meaning.

2. Abandoned

- A Gave up  
B Escaped from  
C Accepted  
D Took away  
E Enabled

3. Seeing his neighbour's brand new car, Santosh turned green with \_\_\_\_\_.

- A misery  
B hatred  
C envy  
D pride  
E honesty

### Instructions [4 - 7]

Read the passage carefully and answer the questions that follow:

We often hear that we are in danger of running out of non-renewable resources. But, what exactly is a non-renewable resource?

Stated simply it is a resource which cannot be **replenished** at a rate equal to or greater than it is consumed. For example, oil is a non-renewable resource. There is only so much oil in the ground. Every year the world **consumes** thirty-one billion barrels of oil. At some point, if we continue to use oil at the same rate, we will be using more than we are extracting from the ground.

On the other hand, if we were able to produce cars that run 100% on solar power, we would be using a renewable resource - the sun. It would be renewable because the sun produces so much energy that we would be in no danger of depleting it.

Non renewable energy resources primarily come from fossil fuels. These are fuels that had their **genesis** millions of years ago as buried organisms decomposed to form the oil, coal, and natural gas that we are able to take advantage of today. These fossil fuels basically provide the energy that drives the economy of the world.

Currently, at least eighty percent of all the energy that we, as a nation, use comes from fossil fuels. Our military experts have long been aware of how our reliance on this form of energy is putting our country at risk. And just recently, they have released documents that warn of the effects that global warming will have on our national security.

The biggest reason that they are concerned is that these fossil based fuels that we depend on so heavily is the cause for the huge amounts of greenhouse gas emissions that are polluted into the air each year. The most dangerous of these greenhouse gases is carbon dioxide, mainly because there is so much of it produced each day.

If you talk to scientists, it is beyond **dispute** that greenhouse gases are responsible for global warming. The polar ice caps that have existed since man has been keeping records have begun to melt. And the result has already begun to cause the sea levels to rise in areas around the world. Already millions have been displaced from their homelands with many millions more to be displaced in the future.

At some point the tipping point will be reached and it will be too late to make effective corrections to the problems that man has caused. No one knows exactly when this **tipping point** will occur. But nearly all climate scientists agree that it is not that far away.

John Kuzniar

4. Why, according to the passage, is carbon dioxide the most dangerous green house gas?

- A Because it is twice as poisonous as carbon monoxide
- B Because of the massive quantities in which it is produced on a daily basis
- C Because it is poisonous for humans and animals
- D Because it reacts with ozone in the ozone layer to form a dangerous compound
- E Because it cannot be taken out of the earth's atmosphere



5. What is the main point of the passage?

- A Due to the excessive usage of non-renewable energy sources, man is causing more and more damage to the environment, which might soon be impossible to contain
- B Due to green house gases, the health of the planet is worsening by the day and man is to be held responsible for this
- C All usage of non-renewable resources of energy should be banned with immediate effect

D In his quest to dominate nature, man is causing more and more damage to the environment

E The difference between renewable and non-renewable resources of energy is that renewable resources can be replenished whereas non-renewable resources cannot

6. Which of the following would most appropriately replace the word “consumes” as used in the passage?

A eats

B digests

C uses

D wastes

E makes

7. Which of the following is opposite in meaning to the word “dispute”?

A row

B accord

C squabble

D quarrel

E brawl

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### Instructions [8 - 11]

Read the passage carefully and answer the questions that follow:

Most people who run their own business will tell you it's the best decision they've ever made. They get to set their own hours, be their own boss, and do things their own way. They'll also tell you that advertising is crucial to business success, both long term and short term. If you run your own business and are interested in different ways of advertising, then this article is for you. You'll learn how to advertise, and bring in more customers, which will make you more money.

Print publications continue to be the most popular and most widely used form of advertising. This is anything from magazines, newspapers, trade journals or small newsletters published by clubs and organizations.

Depending on what size your potential market is, and how much your advertising budget, you can choose any or all of these methods of advertising. Of course, with print advertising, it can take a while to see any fruits of your effort, so if you are just starting out, it pays to get started slowly.

Another way that is a really effective means of advertising is direct mail. This is simply mail you send out on a regular basis to your target market, usually the neighborhood around your shop. This can be anything from full color brochures, to simple postcards announcing sales and store events. If you send out simple postcards every month or so, the name of your shop and your service will always be in the forefront of the minds of your customers.

Being a member of, and participating in regular chamber of commerce meetings can be a big plus. You can network with other business owners in your area, and come up with some **sybiotic** relationships. You can refer customers to each other's stores, which can easily increase your sales and your profits.

Google adwords can be a very **lucrative** way to get more customers, even if you are a local shop. When people type in the name of your service, along with your city, your ad will come up right along the search engine results. This can be of great benefit, as you get plenty of data regarding who is clicking on your ads and so forth.

Having a web page these days is absolutely **essential**. Having a web presence makes you stand out above the rest, and allows you to do several things. One of them is that you can collect emails, which you can then put on your list. If you collect emails from clients as you interact with them, they can also go on your list. Then you can simply send emails to your list on a regular basis, reminding them of your products and services.

Just one or two of these ideas is enough to significantly grow your business. Some find that by applying all of these **consistently**, their income skyrockets, as their base of customers significantly expands. If you are just getting started, the best way is to try one or two of these at a time, and see which works best for you.

George Hutton

8. What, according to the author, is the best decision that business people say they made?

- A Starting their own business
- B Starting their own online business
- C Starting their own offline business
- D Deciding to have a webpage for their website
- E None of the above

9. Which of the following is opposite in meaning to the word "lucrative"?

- A worthwhile
- B fruitful
- C advantageous
- D unprofitable
- E cost effective

10. Which of the following statements is true according to the passage?

- A For a small business to grow well, no stone should be left unturned in pursuing all the marketing strategies
- B For a small business to grow well, it is prudent to start with just one or two marketing techniques
- C For a small business to grow well, it is more important to have a good product but not necessarily a good marketing strategy
- D For a small business to grow well, it is important to have a very good marketing strategy. The quality of the product does not matter much
- E None of the above

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11. According to the passage, which of the following is a benefit of attending chamber of commerce meetings?

- A You can improve your brand recall in customer minds
- B You can improve your search engine rankings
- C You can learn how to effectively advertise
- D You can strike up mutually beneficial relationships with other business owners
- E None of the above

12. While the mother was not watching, the child ran \_\_\_\_ the street.

- A to
- B from
- C after
- D across
- E by

### Instructions [13 - 16]

Read the passage carefully and answer the questions that follow:

In search of an effective method to prevent muscle wasting that comes with illness and aging, researchers have located a natural compound that is very promising.

The findings reported in the June issue of Cell Metabolism (a Cell Press publication), identify a natural component of apple peels known as Ursolic Acid as a promising new nutritional therapy for the widespread and **debilitating** condition that affects nearly everyone at one time or another.

"Muscle wasting is a frequent companion of illness and aging," explained researchers from The University of Iowa, Iowa City. "It **prolongs** hospitalization, delays recoveries and in some cases prevents people going back home. It isn't well understood and there is no medicine for it."

The research team first looked at what happens to gene activity in muscles under conditions that promote weakening. Those studies turned up 63 genes that change in response to fasting in both people and mice and another 29 that shift their expression in the muscles of both people who are fasting and those with spinal cord injury. Comparison of those gene expression signatures to the signatures of cells treated with more than 1300 bio-active small molecules led them to ursolic acid as a compound with effects that might **counteract** those of atrophy.

"Ursolic Acid is an interesting natural compound," they said. "It's part of a normal diet as a component of apple peels. They always say that an apple a day keeps the doctor away..."

The researchers next gave Ursolic Acid to fasted laboratory subjects. Those experiments showed that ursolic acid could protect against muscle weakening as predicted. When ursolic acid was added to the food of normal subjects for a period of weeks, their muscles grew. Those effects were traced back to **enhanced** insulin signaling in muscle and to corrections in the gene signatures linked to atrophy.

The subjects given ursolic acid also became leaner and had lower blood levels of glucose, cholesterol and triglycerides. The findings therefore suggest that ursolic acid may be responsible for some of the overall benefits of healthy eating.

"We know if you eat a balanced diet like mom told us to eat you get this material," the researchers explained "People who eat junk food don't get this."

It is not yet clear whether the findings will translate to human patients, but the goal now is to "figure out if this can help people." If so, they don't yet know whether Ursolic Acid at levels that might be **consumed** as part of a normal diet might or might not be enough.

Michael Clonts

13. According to the passage, which of the following is one of the reasons why people do not have good health?

- A Lack of a balanced diet
- B Lack of exercise
- C Lack of good food
- D Lack of nutrients in food
- E None of the above

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14. Which of the following is one of the uses of Ursolic acid?

- A It increases cognitive abilities
- B It strengthens the heart
- C It strengthens muscles
- D It helps perform better on memory tests
- E None of the above

15. Which of the following is similar in meaning to the word "enhance"?

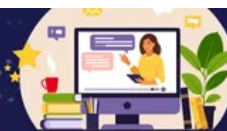
- A decrease
- B augment
- C diminish
- D reduce
- E demote

16. Ursolic acid contains which of the following substances?

- A insulin
- B cholesterol
- C triglycerides
- D glucose
- E Data insufficient

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**17. Summarize the following paragraph:**

Rochefoucauld says that love may be compared to a ghost since it is something we talk about but have never seen, and Lichtenberg, in his essay "Ueber die Macht der Liebe", disputes and denies its reality and naturalness--but both are in the wrong. For if it were foreign to and contradicted human nature - in other words, if it were merely an imaginary caricature, it would not have been depicted with such zeal by the poets of all ages, or accepted by mankind with an unaltered interest; for anything artistically beautiful cannot exist without truth.

- A** Contrary to what Rochefoucauld and Lichtenberg think, Love is a real concept that has inspired great poems and contradicted human nature of barbarism
- B** Love cannot be imaginary because an idea that contradicts human nature the way love does would not have survived centuries had it not been a real emotion
- C** Art reflects what is true in life and the fact that it reflects love confirms that love is not merely hypothetical but a real concept
- D** Love cannot be imaginary as something that is purely artificial would not have been able to sustain interest of human beings nor could it have inspired so much beautiful poetry
- E** Love is similar to ghosts as both are not real and are imaginary.

**18. From the options given below, pick the one that best completes the sequence:**

PAINTER : CANVAS : : SCULPTOR : ?

- A** Words
- B** Chisel
- C** Hammer
- D** Marble
- E** Tool

**Instructions [19]**

Instructions: Each question below has two blanks, each blank indicating that something has been omitted. Choose the set of words for each blank that best fits the meaning of the sentence as a whole.

**19. In an effort to provide \_\_\_\_\_ for higher education to all, most of the universities have been providing education without adequate infrastructure, thus churning out \_\_\_\_\_ graduates every year.**

- A** Chances, fresh
- B** Platform, capable
- C** Opportunities, unemployable
- D** Prospects, eligible
- E** Policy, incompetent



**Instructions [20]**



Choose the grammatically correct option for the part highlighted in bold:

20. He will take some time to **warm up by** you.

- A warm up to
- B warm by
- C warm on to
- D warm by to
- E No change required

**Instructions [21]**

For each of the questions given below, fill in the blanks with the most suitable idiom or phrase.

21. The travel business is one of the businesses that has been left \_\_\_\_\_ during the pandemic.

- A At crossroads
- B Insult to injury
- C High and Dry
- D On the ball
- E None of the above

22. Choose the option which is most opposite in meaning to the word given below.  
Obstinate

- A Dishonesty
- B Punishment
- C Compliant
- D Thoughtful
- E Stubborn

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**Instructions [23]**

Pick out the most effective pair of words from the given pair of words make the sentences meaningfully complete.

23. Education is an essential means of \_\_\_\_ women with the knowledge, skills and self-confidence necessary to fully \_\_\_\_ in the development process.

- A empower - include
- B empowering - participate
- C empowered - participating

D empowerment - participate

E strengthening - participating

24. The following statements when arranged in the correct order form a coherent paragraph. Find the correct ordering.

A) In the garden the voice of the insect soothes; in the bedroom it irritates

B) In the garden it is the hum of spring; in the bedroom it seems to belong to the same school of music as the bizz of the dentist's drill or the saw-mill

C) It makes all the difference whether you hear an insect in the bedroom or in the garden

D) Even in the garden we wave away a mosquito

E) It may be that it is not the right sort of insect that invades the bedroom

A CABED

B CADBE

C ACBED

D ABCED

E BECAD

#### Instructions [25 - 26 ]

In each of the following questions a short passage is given with one of the lines in the passage missing and represented by a blank. Select the best out of the five answer choices given, to make the passage complete and coherent (coherent means logically complete and sound).

25. He was a youth that would have attracted attention anywhere. \_\_\_\_\_, he was also of good proportions, and walked with an ease and stride which suggested reserved strength and muscular development; but it was the boy's face that was most noticeable. Frank, open, of singular beauty in feature and outline, there was also upon it unmistakable evidences of intelligence, resoluteness and honesty of purpose. A close observer might also have detected traces of suffering or of sorrow—possibly of some great burden hard to bear?

A He, moreover, looked eagerly ahead, like one who was watching for some signs of his destination.

B To the west of him he saw the twinkling lights of several villages.

C Tall for his age, which could not have been far from eighteen years.

D The boy was none too warmly clad for the chilly air and piercing wind.

E None of the above.

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26. It follows therefore that only you can ever know you and only I can ever know I in any first-hand and immediate way. Between your consciousness and mine there exists a wide gap that cannot be bridged. Each of us lives apart. \_\_\_\_\_. We may work together, live together, come to love or hate each other, and yet our inmost selves forever stand alone. They must live their own lives, think their own thoughts, and arrive at their own destiny.?

- A What, then, is mind? What is the thing that we call consciousness?
- B There is no psychology in the text, but only in your living, flowing stream of thought and mine.
- C Introspection is something of an art; it has to be learned.
- D We are like ships that pass and hail each other in passing but do not touch.
- E All that is left us then is to view the mental object while it is still fresh in the memory.

27. Choose the grammatically correct option for the underlined portion

Ecstatic about getting into the prestigious MBA program at Stanford, Amit visited his school and personally thanked all of his teachers.

- A Amit visited his school and personally thanked all of his teachers
- B Amit had visited his school and personally thanked all of his teachers
- C Amit visited his school and personally thanked all of its teachers
- D Amit had visited his school and personally thanked all of its teachers
- E Amit has visited his school and personally thanked all of its teachers

28. What is the synonym for the following word : APPARENT

- A Misfortune
- B Neglect
- C Obvious
- D Support
- E Angry

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29. The statements A-D when arranged in the correct order form a coherent passage starting with statement 1 and ending in statement 2. Find the correct ordering.

1) Man recoils from trouble—from suffering; and yet he is condemned by nature to the suffering of privation, if he does not take the trouble to work.

A) What means can he adopt to avoid both?

B) Such a course of conduct prevents the trouble and the satisfaction from preserving their natural proportion, and causes all the trouble to become the lot of one set of persons, and all the satisfaction that of another.

C) He has to choose, then, between these two evils.

D) There remains now, and there will remain, only one way, which is, “to enjoy the labour of others”.

2) This is the origin of slavery and of plunder, whatever its form may be—whether that of wars, impositions, violence, restrictions, frauds and monstrous abuses, but consistent with the thought which has given them birth

- A CBAD

- B DBAC
- C BDAC
- D CADB
- E ADBC

30. The following statements when arranged in the correct order form a coherent paragraph. Find the correct ordering
- A) Demosthenes, again, was an orator frustrated by many defects.
  - B) Homer, they say, was blind, and the legend seems to suggest that his blindness, far from injuring, abetted his genius.
  - C) The biographies of famous men are prolific of examples that support the theory of frustration.
  - D) Tyrtaeus, being physically unable to fight, became the poet of fighting, and achieved more with his words than did most men with their weapons.
  - E) Everyone knows the story of his wretched articulation and how he shut himself up and practised speaking with pebbles in his mouth in order to overcome it.

- A CBDAE
- B CBADE
- C CDBEA
- D BDAEC
- E BEADC

31. Select the grammatically correct alternative for the underlined portion

Robin Singh and Venkatapathy Raju are examples of the kind of cricketer who receives popular acclaim while playing, often goes into decline after retirement, and never regains popularity again.

- A often goes into decline after retirement, and never regains popularity again
- B whose reputation declines after retirement and never regains its status again
- C but whose reputation declines after retirement and never regains its former status
- D who declines in reputation after retirement and who never regained popularity again
- E who often goes into decline after retirement, and never regains popularity again

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32. Choose the option which is most opposite in meaning to the word given below.

Tepid

- A perfunctory
- B lukewarm
- C brave

- D passionate
- E uninterested

**Instructions [33]**

From the options, select the one that best replaces the part of the sentence in bold.

**33. When the family sold of its furniture,** the house looked empty and bare.

- A When the family sold away its furniture
- B When the family decided to sell off its furniture
- C When the family decided to sell its furniture
- D When the family sold off its furniture
- E No correction required

**Instructions [34]**

The given question has a statement with an idiom in it, which has been mentioned in bold. The statement is followed by five options; pick the option that best explains the meaning of the idiom, as used in the statement.

**34. The client was up in arms** with the firm due to their inefficiency.

- A raised his hands
- B raised a complaint
- C extremely angry
- D irritated
- E very happy



**Instructions [35]**

Choose the option that would fit both the given blanks.

**35. The jury failed to grasp the full \_\_\_\_ of her testimony.**

You have to pay duties on goods that you \_\_\_\_ into the country.

- A extent
- B meaning
- C import
- D bring
- E sign

**36. From the options given below, pick the one that best completes the sequence:**

DESCRIBE : INEFFABLE :: SEE : ?

- A Unfriendly
- B invisible
- C behold
- D insulate
- E acrimony



## Logical Reasoning

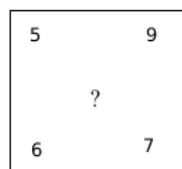
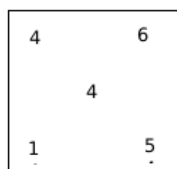
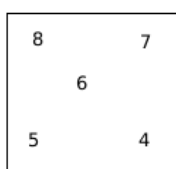
37. According to Feni, a crystal gazer, she is better in predicting rainfall than Komal, a meteorologist. Komal replied by saying that no one is above science.

Which of the following actions will best resolve the debate?

- A Ask Komal to mathematically disprove the crystal gazing methodology.
- B Use the past results of both in judging who predicted the rainfall better.
- C All citizens must participate in a survey to judge which method better forecasts the rainfall.
- D Series of experiments or tests must be conducted where both of them are asked to predict the rainfall and the results must be noted down.
- E None of the above.



38. Find the missing value in the following figure



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

39. Statements:

All cats are dogs.

All dogs are tigers.

No tiger is a lion.

Conclusions:

1. No dog is a lion.
2. Some cats being lions is a possibility.

- A only conclusion 1 follows
- B only conclusion 2 follows
- C either 1 or 2 follows
- D neither 1 nor 2 follows
- E both 1 and 2 follow

**Instructions [40]**

**Find the missing number in the given series from the options provided.**

**40.** 2, 12, 36, 80, ?, 252

- A 220
- B 225
- C 144
- D 150
- E 100

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**41.** Security experts in the National Intelligence Agency (NIA) have long been worried that the new encryption algorithms that are being developed by some private companies will put a check on their surveillance mechanisms. Recently, they concluded that these sophisticated algorithms made by private companies will be the greatest challenge after techies in NIA were unable to decode an encryption algorithm that started appearing in many email throughout the country.

Which of the following, if true, most weakens the conclusion of the NIA?

- A Recently, a private company claimed to have made the world's most sophisticated encryption algorithm
- B There is an open-source algorithm which some people use to encrypt.
- C There is a wide-spread rumour that the NIA has been heavily infiltrated in the last few years
- D Many private firms are ready to give detailed information about their encryption algorithms when demanded by the government
- E The new encryption algorithms help protect the privacy of the public.

**42.** In the following question a statement is given followed by two arguments choose the correct option.

Statement : Cricket is the most followed sport in the country because Sachin is the best sportsman from India.

Argument I : Yes, the longevity and records of Sachin probably will never be surpassed or matched by any

sportsman in India.

Argument II :No, Sachin is not the reason for cricket being the most followed sport in India, as people did watch cricket before and after Sachin in large numbers.

- A Only I is strong
- B Only II is strong
- C Both I and II are strong.
- D Neither I nor II is strong.
- E Either I or II is strong.

#### Instructions [43 - 44 ]

In each of the following questions a statement is given and it is followed by two conclusions. Identify the conclusions which logically follow from the given statement and accordingly choose the appropriate option.

43. Statement: The prime minister of India recently visited Israel.

Conclusion I: India wants to have friendly relations with Israel

Conclusion II: Israel and India have common enemies

- A Only conclusion I follows
- B Only conclusion II follows
- C Either conclusion I or conclusion II follow
- D Both conclusion I and conclusion II follow
- E None of the conclusions follow

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44. Statement: The RBI report said that 99 percent of the demonetized notes have returned to the system.

Conclusion I: Demonetization move was a failure

Conclusion II: RBI expected 100 percent of the notes to return to the system

- A Only conclusion I follows
- B Only conclusion II follows
- C Either conclusion I or conclusion II follow
- D Both conclusion I and conclusion II follow
- E None of the conclusions follow

#### Instructions [45 - 48 ]

Read the passage carefully and answer the questions that follow:

Thirty cricketers are sitting in a row. Raina is sitting eleventh from the left end. There are only 3 cricketers between Raina and Sachin. Nehra is standing exactly between Sachin and Raina. Sehwaag is sitting sixth to the right of Nehra. Dhoni is sitting ninth from the right end. There are more than four cricketers between Raina and Sehwaag.

45. What is Dhoni's position from the left?



- A 20
- B 21
- C 22
- D 23
- E 24

46. What is Sehwag's position from the left?

- A 17
- B 18
- C 19
- D 20
- E None of the above

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47. What is Nehra's position from the left?

- A 10
- B 11
- C 12
- D 13
- E None of the above

48. Where is Sachin wrt Dhoni?

- A fifth on the left
- B sixth on the left
- C seventh on the left
- D eighth on the left
- E None of the above

49. As Keerthi was pregnant, she was not allowed to board the Liteair flight. She further requested the director of Liteair services to allow her to board the flight; the director didn't accept her request and said "We are more concerned about our passenger's safety". Which of the following statements can be inferred?

- A Pregnant women are dangerous.

- B Liteair services are the best services.
- C The director is a female.
- D Travelling in flight is not safe for pregnant women.
- E None of these



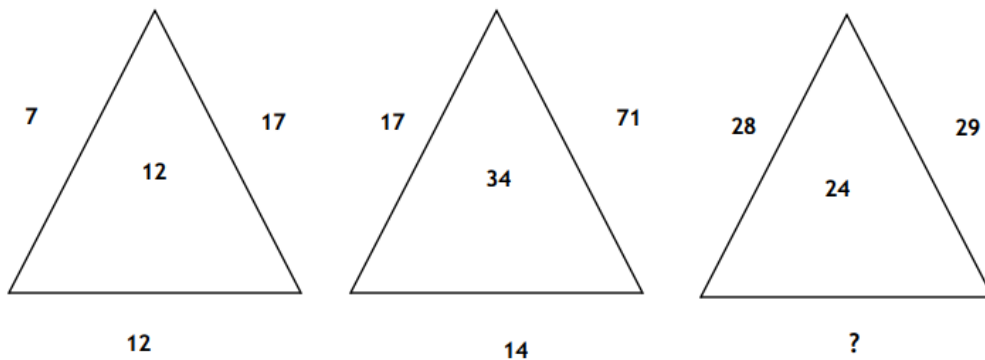
50. Read the following information carefully and answer the question that the given question.

The growth and advancements of business colleges and schools in the country causes for shortage of faculty with Ph. D qualification. In addition, the higher pay and generous fringe benefits given by industry has encouraged qualified people do not seek academic positions.

Which of the following statements, if true, would tend to strengthen the agreement?

- A The average salary for industry position in urban areas is more than the average salary of faculty position in some business schools in rural by 20%
  - B The average salary for industry position in urban areas is less than the average salary of faculty position in some business school in rural areas by 25%
  - C The average salary of recent Ph. D graduates in the industry is 20% higher than that in academics.
  - D The rate of growth of salaries for the industry positions has been higher than the rate of growth of salaries for academic positions for the past three years.
  - E None of these.
51. P is the only daughter of Q. R is the brother of Q who is the only daughter of S. What is S's relation with respect to P?
- A Grandmother
  - B Aunt
  - C Uncle
  - D Grandfather
  - E Cannot be determined
52. Rohan, Lohan, Tohan and Johan compare their heights. Tohan is taller than only Lohan. Rohan is not as tall as Johan is. Who is the tallest among them?
- A Rohan
  - B Lohan
  - C Tohan
  - D Johan
  - E Can't be determined.

53. Which number should replace the question mark?



- A 12
- B 15
- C 18
- D 21
- E 24

### Instructions [54]

In each of the next five questions, a statement is followed by two assumptions. An assumption is something supposed or taken for granted. You have to consider the statement to be true even though it may seem untrue in the real life and decide which of the assumptions is implied in the statement.

54. Statement: You have to work 6 days a week if you want to show progress.

Assumption 1: The only way to show progress is to work 6 days a week.

2: You can't show progress if you don't work 6 days a week.

- A Only assumption 1 is implicit
- B Only assumption 2 is implicit
- C Either assumption 1 or assumption 2 is implicit
- D Neither assumption 1 nor assumption 2 is implicit
- E Both assumptions 1 and 2 are implicit.

55. Arun says, "Radha's father Suresh is the only son of my father-in-law Ramesh". How is Priya, who is the sister of Radha, related to Ramesh?

- A granddaughter
- B daughter-in-law
- C daughter
- D niece

E None of the above



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## Instructions [56 - 59]

Study the following informations carefully and answer the given questions:

A word and number arrangement machine when given an input line of words and number arranges them following a particular rule in each step. The following is an illustration of input and rearrangement. (All the numbers are two digit numbers).

Input: tent 13 wheat 21 ask 63 steal 49 hand 54 vast 85

Step I: 85 wheat tent 13 21 ask 63 steal 49 hand 54 vast

Step II: 63 vast 85 wheat tent 13 21 ask steal 49 hand 54

Step III: 54 tent 63 vast 85 wheat 13 21 ask steal 49 hand

Step IV: 49 steal 54 tent 63 vast 85 wheat 13 21 ask hand

Step V: 21 hand 49 steal 54 tent 63 vast 85 wheat 13 ask

Step VI: 13 ask 21 hand 49 steal 54 tent 63 vast 85 wheat

And Step VI is the last step of the above input, as the desired arrangement is obtained. As per the rules followed in the above steps, find out in each of the following questions the appropriate step for the given input.

Input: Store 95 clean 56 tape 15 break 28 feet 35 wait 69 ice 71

56. Which step number is the following output?

35 feet 56 ice 69 store 71 tape 95 wait clean 15 break 28

- A Step V
- B Step III
- C Step VI
- D Step IV
- E There is no such step

57. Which word / number would be at sixth position from the right in step IV ?

- A 15
- B wait
- C clean
- D 95
- E 28

58. How many elements (Words/numbers) are there between 'feet' and '15' as they appear on the second last step of the output?

- A Six
- B Seven

- C Five
- D Eight
- E Nine

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59. Which of the following represents the position of 'wait' in the third step?

- A Ninth from the left
- B Sixth from the left
- C Eighth from the right
- D Seventh from the right
- E Tenth from the right

### Instructions [60]

In each question below are statements followed by two conclusions numbered I and II. You have to take the two given statements to be true even if they seem to be at variance from commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Give answer

- (a) If only Conclusion I follows
- (b) If only Conclusion II follows
- (c) If either Conclusion I or II follows
- (d) If neither Conclusion I nor II follows
- (e) If both Conclusions I and II follow

60. Some gates are entrances.

All doors are entrances.

- I) Some gates are definitely not doors
- II) At least some gates are doors

- A If only Conclusion I follows
- B If only Conclusion II follows
- C If either Conclusion I or II follows
- D If neither Conclusion I nor II follows
- E If both Conclusions I and II follow

61. Due to poor monsoons, the harvest of sugarcane crop has been unusually meager this year. As a result, the price of sugar has seen a steep increase in the last few months. So, retail prices of sweets are expected to grow steeply in the coming months.

Which of the following, if true, most severely weakens the above argument?

- A The effect of a lackluster monsoon is more on North India, which has the biggest market for sweets compared to other parts of India

- B Meteorologists have predicted good monsoons for the next couple of years
- C Most sweets found in retail stores are made from sugar that was produced a couple of years ago
- D Consumers will purchase chocolates if prices of sweets go up
- E The per capita income of people has increased. So, they can afford higher prices.

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### Instructions [62]

Given is a statement followed by two arguments numbered I and II. Consider the statement and the arguments and decide which of the arguments is strong.

**62.** Statement : In the list of most polluted cities in the world, most of the top ranks are held by Indian cities. Is only the government responsible for such a failure ?

Arguments :

I : No, the people are also equally responsible for not holding the government accountable for its failures as well as not keeping a healthy attitude towards general cleanliness.

II : No, the government cannot be the only one to blame as even the educated people do not think before dirtying public places.

- A Only argument I is strong
- B Only argument II is strong
- C Both I and II are strong
- D Neither I and II are strong
- E Either I or II is strong.

**63.** Statements:

All cats are dogs.

All dogs are tigers.

No tiger is a lion.

Conclusions:

1. Some cats are definitely not tigers.

2. No lion is a cat.

- A only conclusion 1 follows
- B only conclusion 2 follows
- C either 1 or 2 follows
- D neither 1 nor 2 follows
- E both 1 and 2 follow

**64.** It is seen that managers in big organizations are paid very well when compared to managers from small organizations in the same industry. This is unfair as the pay must depend on the performance and the nature of work done by the candidate irrespective of the size of the organization.  
Which of the following option strengthens the author's argument?

- A** Managers in the bigger firms are from better educational institutes when compared to smaller organizations.
- B** The complexity of the organization is sometimes more in the smaller sized firms as compared to the bigger firms.
- C** It is unfair to consider moral responsibilities, which are more in big firms, in deciding the pay of managers.
- D** Amount of time and energy required by managers and their responsibilities remain the same across the industry.
- E** Managers in the big family business are mostly part of the family, and thus they are paid more.

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**65.** Statements:

Some kings are emperors.

No king is a ruler.

Some emperors are rulers.

Conclusions:

1. Some kings are not rulers.

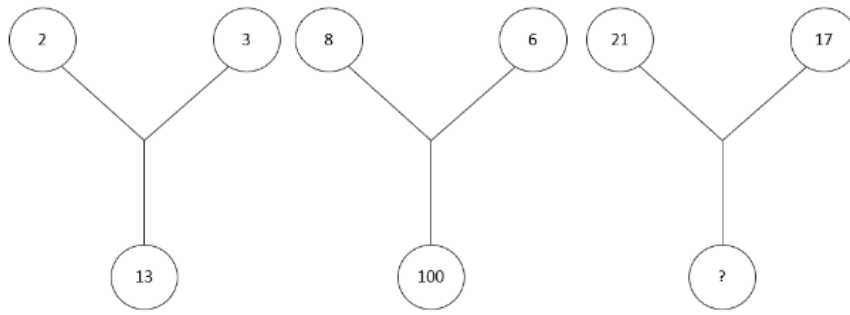
2. All emperors being rulers is a possibility.

- A** only conclusion 1 follows
- B** only conclusion 2 follows
- C** either 1 or 2 follows
- D** neither 1 nor 2 follows
- E** both 1 and 2 follow

**66.** In a certain code, "TOWEL" is coded as "ELOWT" and "RANDOM" is coded as "OMNDRA". The code "ENSTLI" stands for what word?

- A** SILENT
- B** LISTEN
- C** ENLIST
- D** TINSEL
- E** Cannot be determined

**67.** In the figure below, which number should replace the question mark (?)



- A 260
- B 93
- C 730
- D 48
- E 91



68. Statement: Air conditioning causes hair fall in summers.  
Which of the following assumptions is implicit?
- A Air conditioning is only required in summers.
  - B Hair fall doesn't occur in winters.
  - C Air conditioning causes hair fall in all seasons.
  - D Air conditioning does not cause hair fall in winters.
  - E None of the above.
69. **Cause:** Government has recently decided to hike the procurement price of paddy for the rabi crops  
Which of the following will be a possible effect of the above cause?
- A The farmers may be encouraged to cultivate paddy for the rabi season
  - B The farmers may switch over to other cash crops in their paddy fields.
  - C There was a drop in production of paddy during kharif season.
  - D Government may not increase the procurement price of paddy during the next kharif season.
  - E Government will buy paddy from the open market during the next few months.
70. Aman started from his home at the time of sunset and walked 6 km in a direction such that his shadow was casted exactly behind him. Then he took a right and walked another 3 km. Finally he took a left turn and walked for another 2 km and stopped. What was the direction he was finally facing?
- A South
  - B North
  - C West



- D East
- E None of these



71. Many soap manufacturing companies advertise by saying that using one particular brand of soap for a long time leaves a residue on one's skin, which is not good for health.

From the argument, it can be inferred that the advertisers hope that customers will respond to the advertisements and do which of the following?

- A The advertisers hope that the customers will not use the same brand of soap for more than a couple of days
- B The advertisers hope that customers will pressure soap manufacturers to make soaps that will not leave a residue
- C The advertisers hope that customers will switch to their brand of soap
- D The advertisers hope that customers will at least periodically use their brand of soap, if not permanently
- E The advertisers hope that customers will stop using soap altogether.

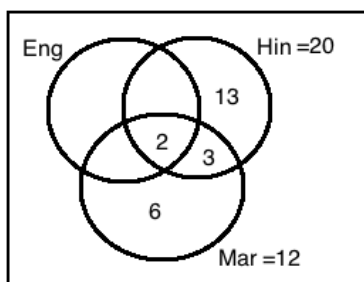
72. Raghav finished eighth from the front and ninth from the back in a marathon race among successful finishers. Four students from his class did not participate in the race and two students dropped out of the race midway. What is the total number of students in Raghav's class?

- A 21
- B 19
- C 23
- D 22
- E 24



## Quantitative Skills

73. ABX India Ltd has 50 employees, each of whom speak at least one language out of English, Hindi and Marathi. The Venn diagram below gives the number of people speaking each language. If there are 20 people who can speak Hindi and 12 who can speak Marathi, how many employees can speak only in English?



- A 16
- B 21
- C 23
- D 25
- E 27

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74. Is triangle ABC an equilateral triangle?

Statement 1: The perpendicular bisector of AB passes through C

Statement 2: The perpendicular bisector of BC passes through A

- A The question can be answered using statement 1 alone and not by using statement 2 alone.
- B The question can be answered using either of the statements alone.
- C The question can't be answered by either of the statements alone, but can be answered by using both
- D The question can't be answered by using both the statements together.
- E The question can be answered using statement 2 alone and not by using statement 1 alone.

75. At 5:00 pm, Buckets A and B contained 10 litres and 2 litres of water respectively. Water from Bucket A trickles into Bucket B. If at 5:30 pm, Bucket A has thrice the amount of water as Bucket B. When will Bucket A become empty?

- A 8:30 pm
- B 9:00 pm
- C 10:00 pm
- D 11:00 pm
- E None of these

76. The ratio of petrol to diesel in two solutions is 5:9 and 3:7 respectively. In what ratio should the two solutions be mixed so that the resultant solution has petrol and diesel in the ratio 1:2?

- A 5:7

- B 7:5
- C 2:1
- D 9:4
- E 4:9

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77. A person bought two articles for a total price of Rs. 1000. He sold the first one at a profit of 20% and the second one at a loss of 80% and made no profit/loss in the end. What is the cost price of the articles?

- A 840, 160
- B 960, 40
- C 900, 100
- D 750, 250
- E 800, 200

78. Rajdhani Express is a 100m long train running from Mumbai to Delhi. What is the speed of Rajdhani Express?

Statement 1: Shatabdi Express, running at 15m/s in the opposite direction, takes 20 seconds to completely cross Rajdhani

Statement 2: Rajdhani Express takes 20 seconds to completely cross a person standing still next to the tracks

- A The question can be answered using statement 1 alone and not by using statement 2 alone.
- B The question can be answered using either of the statements alone.
- C The question can't be answered by either of the statements alone, but can be answered by using both
- D The question can't be answered by using both the statements together.
- E The question can be answered using statement 2 alone and not by using statement 1 alone.

### Instructions [79 - 82]

Five people are interviewed for a technical manager post by the H.R department of the company AVM technologies. The following are the scores awarded by interview panel on each of the parameters.

Person/Parameter	Technical knowledge	Aptitude	Comprehension skills	Leadership skills	General Knowledge
A	50	40	85	60	70
B	30	70	60	65	60
C	50	35	60	80	45
D	45	45	55	65	80
E	75	60	55	70	55

The maximum score possible for any parameter is 100.

Weightages given to the parameters to calculate the composite score.

Parameter	Weightage
Technical Knowledge	25%
Aptitude	20%
Comprehension Skills	15%
Leadership skills	15%
General Knowledge	25%

The person with the highest composite score is ranked first and the person with the second highest composite score is ranked second and so on.

79. Who among the following is ranked first?

- A E
- B A
- C D
- D C
- E B

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80. Which candidate ranked third from the last?

- A A
- B E
- C D
- D C
- E B

81. With all the scores remaining the same, what should have been the score of D in aptitude, to get a composite score equal to the highest composite score?

- A 60
- B 100
- C 90
- D 80
- E 70

82. If A gets maximum marks in comprehension skills, what would be the rank of A?

- A 1
- B 2
- C 3

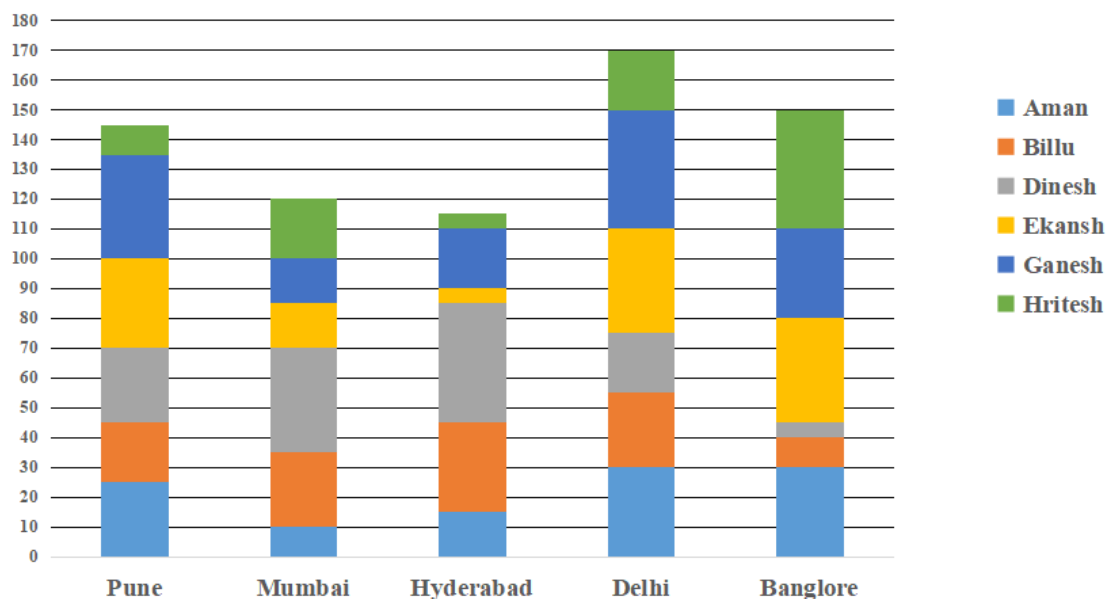
D 4

E 5



**Instructions [83 - 86 ]**

Six friends- Aman, Billu, Dinesh, Ekansh, Ganesh and Hritesh went for a trip together across 5 different cities- Pune, Mumbai, Hyderabad, Delhi and Bangalore in that order. Each of the six friends made certain expenses in each of the five cities . It is known that the total amount remaining with each of the six friends before visiting Delhi was the same. The following graph shows the amount of money spent (in thousands ) in each city by the six friends:



Note : All values are either multiples of 5 or 10 (in thousands )

**83.** Which friend had the least amount with him before the start of the tour?

- A Aman
- B Billu
- C Dinesh
- D Hritesh
- E Ganesh

**84.** Which friend had the highest amount left with him after the tour to Bangalore?

- A Dinesh
- B Ganesh
- C Ekansh
- D Aman

E Billu

85. If Ganesh was left with Rs. 30,000 at the end of the entire trip, what is the amount of money left with Billu after his trip to Mumbai?

A Rs. 120,000

B Rs. 115,000

C Rs. 135,000

D Rs. 125,000

E Rs. 130,000



86. If Ganesh was left with Rs. 35,000 at the end of the entire trip, what is the amount of money left with Dinesh after his trip to Pune?

A Rs. 175,000

B Rs. 165,000

C Rs. 180,000

D Rs. 185,000

E Rs. 190,000

87. A and B start walking at same time from P and Q towards each other respectively. The ratio of their speed before meeting is 4:15. After meeting, A's speed is 3 times that of his previous speed. What fraction of her original speed should B walk at so as to reach P at the same time as A reaches Q?

A  $4/15$

B  $16/75$

C  $16/225$

D  $4/75$

E can't say

88. What is the remainder when X is divided by 38?

Statement 1: When X is divided by 19 the remainder is 11

Statement 2: When X is divided by 2 the remainder is 0

A The question can be answered using statement 1 alone and not by using statement 2 alone.

B The question can be answered using either of the statements alone.

C The question can't be answered by either of the statements alone, but can be answered by using both

- D The question can't be answered by using both the statements together.
- E The question can be answered using statement 2 alone and not by using statement 1 alone.



89. The letters of the word 'SECTION' are arranged in all possible ways, without repetition. The list is sorted in alphabetical order. What is the rank of the word 'SECTION'?
- A 3620
- B 3722
- C 3739
- D 3740
- E 3721
90. 8 men and 12 women can complete a piece of work in 12 days. If a woman is at least half and at most twice as efficient as a man, what is the range of the number of days taken by 10 women to complete the work?
- A 18.8 days to 30.6 days
- B 19 days to 33 days
- C 19.4 days to 32.6 days
- D 19.2 days to 33.6 days
- E 19 days to 32 days
91. At a wedding, each word of the phrase 'Aditya weds Sagarika' is individually flashed after 2, 3 and 4 seconds respectively. Each word flashes for a second and is put off. What is the total time all three words are flashed together in an hour?
- A 2 minutes
- B 3 minutes
- C 4 minutes
- D 6 minutes
- E 1 minute



92. The number of students in a school is a prime number less than 500. Which of the following can be a possible ratio of the number of boys to girls?

- A 212:217
- B 221:252
- C 18:13
- D 18:31
- E 171:172

93. The sum of the first three terms of a geometric progression is 73 and their product is 512. Find the fourth term of the geometric progression.

- A 512
- B 256
- C 64
- D 125
- E Can't be determined

94.  ${}^nP_r = 181440$  and  ${}^nC_r = 36$  then find the value of  $r$  ?

- A 4
- B 5
- C 6
- D 7
- E 8

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95. Ram's salary increased by 10%, 12% and 15% in year 1, year 2 and year 3 respectively. Find the simple average yearly increase in Ram's salary (round to 1 decimal)

- A 12.7%
- B 13.3%
- C 13.9%
- D 12.3 %
- E 14.3%

96. A shopkeeper mixes some tiny white stones (available freely) with 40 kg of rice and sells the mixture at 20% lesser price than the cost price of rice but still manages to make a profit of 10%. How much quantity of stones did he mix?

- A 20 kg



- B 10 kg
- C 12 kg
- D 9 kg
- E 15 g

97. When the constant term of a quadratic equation is taken wrongly, the roots obtained are 17 and -2. When the coefficient of  $x$  is taken wrongly, the roots obtained are 25 and 2. What actual roots of the quadratic equation?

- A 5, 10
- B 25, -2
- C 17, 2
- D 15, 7
- E None of the above

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98. Consider the following statements:

A. Sachin received  $\frac{2}{9}$  of what Saurav and Viru together received. B. Saurav received  $\frac{3}{11}$  of what Sachin and Viru together received.

Among Sachin, Saurav and Viru, who received the minimum amount?

- A Statement A alone is sufficient to answer the question, but not B
- B Statement B alone is sufficient to answer the question, but not A
- C Both statements together are sufficient to answer the question but not independently
- D Both statements together are not sufficient to answer the question.
- E Each of the statement alone is sufficient

99. A frame has 13 horizontal and 17 vertical bars. What is the total number of rectangles formed by the bars in the frame?

- A  ${}^{30}C_4$
- B 10608
- C 5304
- D  ${}^{30}P_4$
- E 18145

100. Is  $(X - Y)(X + Y) > 0$ ?

Statement 1:  $X^2 - 7x + 12 < 0$

Statement 2:  $|Y| > 5$

- A The question can be answered using statement 1 alone and not by using statement 2 alone.
- B The question can be answered using either of the statements alone.
- C The question can't be answered by either of the statements alone, but can be answered by using both
- D The question can't be answered by using both the statements together.
- E The question can be answered using statement 2 alone and not by using statement 1 alone.



101. In how many ways can the letters of the word GULLIBLE be arranged such that no 2 vowels are adjacent to each other?

- A 14400
- B 1200
- C 2400
- D 1440
- E 7200

102. If three coins are tossed, what is the probability that atleast 2 heads occur?

- A 0.5
- B 0.25
- C 0.2
- D 0.1
- E 0.33

103. A random 3 digit number is chosen from the set of all three digit numbers. What is the probability that at least one of the digits is a natural number and perfect square?

- A  $2/3$
- B  $101/150$
- C  $11/15$
- D  $3/10$
- E  $51/75$

**104.** A trader sells oil at a loss of 1% but weighs 900 grams in place of a kg. What is his net loss/gain?

- A 10% gain
- B 9% gain
- C 8.88% gain
- D 9.09% gain
- E None of these

**105.** If  $\log_3 A = x$  and  $\log_{12} A = y$ , what is  $\log_A 6$ ?

- A  $(x+y)/2xy$
- B  $(x+y)/x$
- C  $(y+2x)/xy$
- D  $(x+y)/y$
- E None of these

**106.** What would be the rank of the word ALARM in a dictionary made up of all the possible permutations of the letters of the word?

- A 8
- B 16
- C 55
- D 12
- E None of these

**107.** Suppose the volume of a football is 700% more than the volume of a cricket ball. By how much percent is the surface area of the football greater than the cricket ball?

- A 350%
- B 500%
- C 400%
- D 450%
- E 300%

108. The average height of girls in a school is A cm and the average height of boys in a school is B cm. If the average height of all students is C cm, what is the % of girls in the class?

A  $\frac{C-A}{A-B}$

B  $\frac{C-A}{B-A}$

C  $\frac{C-B}{A-B}$

D  $\frac{C-B}{B-A}$

E  $\frac{A-B}{C-B}$

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# Answers

## Language Skills

1.A	2.A	3.C	4.B	5.A	6.C	7.B	8.A
9.D	10.B	11.D	12.D	13.A	14.C	15.B	16.E
17.D	18.D	19.C	20.A	21.C	22.C	23.B	24.A
25.C	26.D	27.A	28.C	29.D	30.A	31.C	32.D
33.D	34.C	35.C	36.B				

## Logical Reasoning

37.D	38.A	39.A	40.D	41.D	42.B	43.A	44.E
45.C	46.C	47.D	48.C	49.D	50.D	51.E	52.D
53.B	54.E	55.A	56.A	57.C	58.D	59.B	60.C
61.C	62.C	63.B	64.D	65.A	66.B	67.C	68.E
69.A	70.C	71.D	72.D				

## Quantitative Skills

73.C	74.C	75.C	76.B	77.E	78.E	79.A	80.C
81.E	82.B	83.D	84.A	85.E	86.C	87.B	88.C
89.D	90.D	91.E	92.C	93.E	94.D	95.C	96.E
97.A	98.C	99.B	100.C	101.C	102.A	103.B	104.A
105.A	106.A	107.E	108.C				

# Explanations

## Language Skills

1. **A**

We see a link between 1 and B where the author says that Mr James did not enjoy a lot of popularity as evidenced by the fact that even some of his best books did not have second editions. Hence we can eliminate options c and d. Also, there is a link between A-C where A calls Mr James an esoteric author and C elaborates on that. Hence the correct ordering is BACD.

2. **A**

Abandoned means ceasing to support.

Gave up also means the same.

Hence, option A is the answer.

3. **C**

The correct answer is option c) envy. '

4. **B**

Refer to the following sentence in the sixth paragraph: "The most dangerous of these greenhouse gases is carbon dioxide, mainly because there is so much of it produced each day". From this, we can conclude that option b) is the answer.

5. **A**

In the passage, the author is trying to convey the idea that there is an excessive usage of non-renewable resources of energy and this has several side-effects, mainly the deterioration of the environment. If preventive action is not taken, the situation might soon go out of hand. Option a) captures this idea perfectly.

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6. **C**

In the passage, the word is used in the sentence "Every year the world consumes thirty-one billion barrels of oil". The best replacement of this word is 'uses'. Option c) is the correct answer.

7. **B**

The meaning of the word 'dispute' is 'quarrel'. The opposite of this word is 'agreement' or 'concord'. The synonym of this is 'accord'. Option b) is the correct answer.

8. **A**

From the first sentence of the passage, we can say that option a) is the correct answer.

9. **D**

The meaning of the word 'lucrative' is 'profitable'. The word that is opposite in meaning to this word is 'unprofitable'. Option d) is the correct answer.

10. **B**

In the last sentence of the passage, the author mentions that for a small business that is just starting out, it is better to try one or two techniques initially. So, option b) is the correct answer.

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11. **D**

According to the passage, attending chamber of commerce meetings can help you come up with symbiotic relationships with other business owners. Hence, option D.

12. **D**

The sentence is supposed to mean that the child ran from one side of the street to the other side. So, 'across' is the correct preposition in this sentence.

13. **A**

The author quotes doctors who say that lack of a balanced diet has led to people not having good health. Option a) is the correct answer.

14. **C**

We can understand from the passage that Ursolic acid helps strengthen the muscles. So, option c) is the correct answer.

15. **B**

To enhance is to increase. All the words given in the options, except 'augment' are opposites of this word. Option b) is the correct answer.



16. **E**

The subjects given Ursolic acid had lower levels of glucose, cholesterol etc. But, we cannot infer whether these compounds are present in Ursolic acid or not. So, option e) is the correct answer.

17. **D**

The main assertion of the author is that love cannot be imaginary. He reasons that "if it were merely an imaginary caricature, it would not have been depicted with such zeal by the poets of all ages, or accepted by mankind with an unaltered interest". Hence, option D which mentions both the assertion and the two reasons is the most appropriate option

18. **D**

Let's use the first two words in a sentence: The painter paints on a canvas. Hence, the canvas is a raw material used to make a painting. Unlike brushes, which are tools for a painter, the canvas forms the base of the end product. Hence, unlike chisel and hammer that are tools for a sculptor, the appropriate option would be Marble as it is the raw material.

19. **C**

Opportunities and unemployable best fit the meaning of the sentence as a whole.

20. **A**

The correct phrasal verb is "warm up to" which means to begin to like somebody.



21. **C**

Here High and dry fits the best.  
High and dry means Being in a difficult and abandoned position.

22. **C**

Obstinate means to stubbornly refusing to change one's opinion. So, compliant is most opposite in meaning to obstinate.  
Hence, option C is the correct choice.

23. **B**

The first blank needs to be filled with a word ending with -ing. Strengthening means making women stronger, which is not the right context. Hence, option (b) empowering needs to be selected.

24. **A**

We see a link between E and D where D logically follows D. Hence ED is one link. Also, A-B are linked. Hence, we can eliminate b and c. Statement C precedes A-B in the logical order and hence the correct ordering is CABED.

25. **C**

The opening sentence says that the boy was very attractive and the sentence "he was also of good proportions, and walked with an ease and stride which suggested reserved strength and muscular development" continuing the blank says that the boy was strong and muscular. Hence, the blank should have something describing the physique of the boy.

In option C, "Tall for his age, which could not have been far from eighteen years." describes the physical personality of the boy.

Hence, option C is the correct answer as it describes the height of the boy.



26. **D**

Throughout the paragraph, each and every sentence describes the differences between two individuals and how their lives are different.

Hence, the sentence that comes in the blank must be in line with the sentence preceding it and succeeding it.

The sentence should also describe the difference between the lives of two individuals.

Hence, "We are like ships that pass and hail each other in passing but do not touch" will be the correct fit as it also describes about how they can never completely know about the other person.

27. **A**

As the event occurred at some point in the past, the correct tense would be simple past. Hence, we can eliminate options B and D. Amit would thank "his" teachers and not "its" teachers. Hence, option A.

28. **C**

Apparent means evident. Which also stands for Obvious

29. **D**

Statement C follows from 1 where 1 states that a man must either work or suffer from privation and C states that a person must choose between these two evils. We see a link between C-A-D where A asks if there was some way where a man could avoid both and D provides the answer to the same. Hence, correct option is d.

30. **A**

Statement C introduces us to the idea of the passage and should be the first line of the paragraph. A, B and D give examples of the theory mentioned in C. As E elaborates on the difficulties experienced by an orator it should follow A. Hence there is a link between A-E. Also, as the word "again" is mentioned in A, the example of Demosthenes should come after the example of Homer and Tyrtaeus. Hence, option A.



31. **C**

a) is wrong because it tends to talk about the player and not about the reputation. b) is wrong because it doesn't use a conjunction to connect the statements. Also, the word again is redundant. c) is the correct option. d) is wrong because, like a) it talks about the player and not about the reputation. Also, grammar is inconsistent. Hence, option c) is the correct choice.

32. **D**

'Tepid' means showing no enthusiasm. 'Passionate' is the antonym of tepid.

33. **D**

The correct usage should be 'sold off', which means sale at a slightly less price to encourage someone to buy it. Option d) is the correct answer.



34. **C**

The idiom, up in arms means to be extremely angry with someone.  
Hence the correct answer is Option C.

35. **C**

From the first blank, we can infer that the missing word means significance. From the second blank, we can infer that the missing word is either import or bring. Only the word import fits both the blanks.

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36. **B**

Ineffable means something that is indescribable. Hence, we need a word that means something that cannot be seen. Hence, the correct word is invisible.

### Logical Reasoning

37. **D**

Option A will only theoretically solve the problem, but the debate would be best resolved if practical results are seen. Hence, option A can be eliminated.

Usage of past results would not be an accurate method. Hence, option B can be eliminated.

Option C will only lead to more debate.

Option D states the correct approach to solve the debate as one can practically judge which method works. Hence, option D is the correct choice.

38. **A**

$$6 = (8+7) - (5+4)$$

$$4 = (4+6) - (1+5)$$

$$\text{Therefore, } ? = (5+9) - (6+7) = 14-13 = 1$$

39. **A**

Since dogs is a subset of tigers and no tiger is a lion, it follows that no dog is a lion. So, conclusion 1 is true. Also, since cats is a subset of tigers and no tiger is a lion, so it follows that no cat is a lion. So, conclusion 2 need not be true.

40. **D**

$$\text{First term} = 1^2 + 1^3 = 2$$

$$\text{Second term} = 2^2 + 2^3 = 12$$

$$\text{Third term} = 3^2 + 3^3 = 36$$

$$\text{Fourth term} = 4^2 + 4^3 = 80$$

$$\text{Sixth term} = 6^2 + 6^3 = 252$$

We observe that  $n$ th term of the series is given by the sum of the square and cube of  $n$ .

$$\text{So, Fifth term} = 5^2 + 5^3 = 150$$

Hence, option D is the correct answer.

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41. **D**

If the companies are willing to share info on encryption algorithms with the NIA, they may be able to suitably adapt their surveillance systems to work alongside (or perhaps even bypass) the encryption algorithms and thus, would weaken the current conclusion of the NIA to the largest extent.

42. **B**

Only argument II is strong. This is because argument I never addresses the primary point of the statement, which is that cricket is the most followed sport in the country.

43. **A**

Only conclusion I logically follows from the given statement. The prime minister of country visiting another country shows that the country wants friendly relations. Thus, I follows.

II does not follow from the given statement.

Option A is the correct answer.

44. **E**

We do not know the motive of demonetization move. Hence, we cannot say whether it was a success or a failure. Thus, I does not follow.

II is very vague and does not relate to the given statement. Hence, none of the conclusions follow. Thus, option E is the correct answer.

**Explanation [45 - 48]:**

Raina is 11th from the left end. Thus, he must be in 11th seat. Now, 3 people sit between Raina and Sachin. So, Sachin can be either in 7th or 15th seat.

Case 1: Sachin in 7th seat

Thus, Nehra must be in 9th seat which means Sehwag is in 15th seat. But in this case, there are not more than 4 cricketers between Raina and Sehwag. So, this case can be eliminated.

Case 2: Sachin is in 15th seat

This means Nehra must be in 13th seat which means Sehwag is in 19th seat. Since Dhoni is sitting 9th from the right end, he must be in 22th seat.

Based on the info in the instructions, the positions of the group are as mentioned in the picture. This explains the answer.

45. **C**

RAINA	NEHRA	SACHIN	SEHWAG	DHONI
11	13	15	19	22



46. **C**

<b>RAINA</b>	<b>NEHRA</b>	<b>SACHIN</b>	<b>SEHWAG</b>	<b>DHONI</b>
<b>11</b>	<b>13</b>	<b>15</b>	<b>19</b>	<b>22</b>

47.D

<b>RAINA</b>	<b>NEHRA</b>	<b>SACHIN</b>	<b>SEHWAG</b>	<b>DHONI</b>
<b>11</b>	<b>13</b>	<b>15</b>	<b>19</b>	<b>22</b>

48.C

RAINA	NEHRA	SACHIN	SEHWAG	DHONI
11	13	15	19	22

49. **D**

The reason why Keerthi was not allowed to board the flight is she was pregnant, and the director pointed out that Liteair services are more concerned about safety. This implies it is unsafe for pregnant women to travel in flights.

So the correct option is D.

50. **D**

The rate of growth of salaries for the industry positions has been higher than the growth of salaries for academic positions for the past three years which strengthens the given argument.



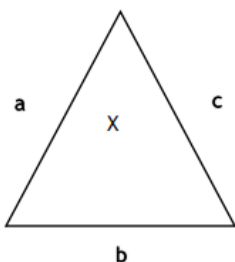
51. **E**

As the gender of S is not known S may be the grandmother or grandfather of P.

52. **D**

Tohan and Lohan are the shortest. Rohan is second tallest and hence Johan is the tallest.

53. **B**



For the above sample figure,

$$X = \frac{(a+b+c)}{3}$$

This can be validated from the figures in the question.

For fig (i),

$$\frac{(17+7+12)}{3} = 12$$

For fig (ii),

$$\frac{(17+71+14)}{3} = 34$$

Let the value of the unknown digit be Y.

$$\text{Thus, } 24 = \frac{(28+29+Y)}{3}$$

$$Y = 72 - 57 = 15$$

$$Y = 15$$

Thus, the correct option is B.

54. **E**

Both the assumptions are implicit. They are just the original statement rephrased.

55. **A**

Arun is the son-in-law of Ramesh. Suresh is the son of Ramesh. Radha is the daughter of Suresh. Suresh is also the father of Priya. So, Priya is the granddaughter of Ramesh.



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### Explanation [56 - 59]:

After careful analysis of the given input and various steps of re-arrangement it is evident that in each step one number and one word are rearranged. In the first step the highest number and the word that comes in the last in alphabetical order move to the extreme left position. In the next step the second highest number and the word that comes last but one in alphabetical order move to the extreme left position. The same procedure is continued till all the numbers get arranged in ascending order and all the words in alphabetical order.

Input : Store 95 clean 56 tape 15 break 28 feet 35 wait 69 ice 71  
 Step I : 95 wait store clean 56 tape 15 break 28 feet 35 69 ice 71  
 Step II : 71 tape 95 wait store clean 56 15 break 28 feet 35 69 ice  
 Step III : 69 store 71 tape 95 wait clean 56 15 break 28 feet 35 ice  
 Step IV : 56 ice 69 store 71 tape 95 wait clean 15 break 28 feet 35  
 Step V : 35 feet 56 ice 69 store 71 tape 95 wait clean 15 break 28  
 Step VI : 28 clean 35 feet 56 ice 69 store 71 tape 95 wait 15 break  
 Step VII : 15 break 28 clean 35 feet 56 ice 69 store 71 tape 95 wait

And, step VII is the last step of the above input.

56. **A**

The given output is the step V.

57. **C**

'Clean' is at the sixth position from the right in step IV.

58. **D**

And, step VII is the last step of the above input. There are eight elements.

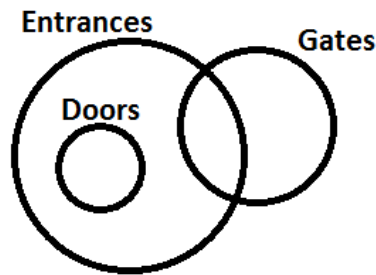
59. **B**

'wait' is the sixth from the left in the third step.

60. **C**

All gates can be entrance in such a way that all gates are all doors as well. Hence, we can say that conclusion I may follow.

for some gates to be doors we can say that atleast some gates can be door we can say that conclusion II may also follow.



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61. **C**

The production of sugar has gone down this year. However, if most sweets are made from sugar that was produced a couple of years ago, then the argument is weakened. Option c) is the correct answer.

62. **C**

Argument I is strong as a government cannot be very incompetent for a long period of time unless the people did not do their bit. Argument II is strong as the government can exercise their power only upto a certain extent, beyond which it is the citizens' prerogative to take care. Thus, both the arguments are strong.

63. **B**

Since all cats are dogs and all dogs are tigers, it follows that all cats are definitely tigers. So, 1 doesn't follow. Also, since no tiger is a lion and cats is a subset of tigers, it follows that no cat is a lion or no lion is a cat. So, conclusion 2 follows.

64. **D**

According to the author, the performance and nature of the work done must decide the pay of the manager. Thus, the option which would strengthen the author's argument the most would point out that the managers in both smaller and bigger firm have similar nature of work. Option D perfectly captures this. Hence, option D is the correct choice.

65. **A**

No king is a ruler. So, the conclusion "Some kings are not rulers" is true. Also, some emperors are kings and no king is a ruler. So, if all emperors are rulers, then it follows that some kings are rulers, which is not the case. So, conclusion 2 is not true.

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66. **B**

In this code, the letters are placed in groups of two starting from the end. Hence, the coded word is LISTEN.

67. **C**

In the given figure, the number in the tail of the Y-figure is the sum of squares of the other two numbers.

$$13 = 2^2 + 3^2$$

$$100 = 8^2 + 6^2$$

Thus, in the third figure,

$$(?) = 21^2 + 17^2 = 441 + 289 = 730$$

Hence, the answer is option C.

68. **E**

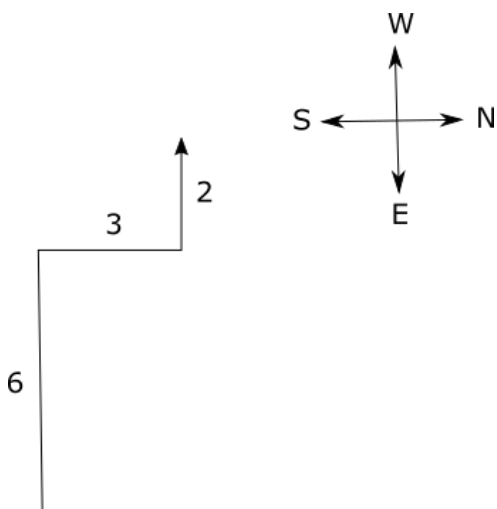
None of the given options is an implicit assumption.

69. **A**

Govt. has recently decided to increase / like the price of paddy for rabi crops due to this cause, the effect is the farmers may get encouraged to cultivate paddy for the rabi season

70. **C**

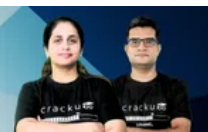
Since his shadow was cast behind him during sunset, he must be walking in West direction. The following figure shows his complete trajectory:



We can see that he is finally facing the west direction.

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71. **D**

Because using a single brand of soap for a long time leaves a residue on the skin, the advertisers are hoping that customers will not stick to a single brand for a long time and periodically use their brand. Option d) is the correct answer.

72. **D**

The number of successful finishers of the marathon are  $8+9-1=16$ . As four students did not participate and two students did not complete the race, the total number of students in Raghav's class is  $16+6=22$

## Quantitative Skills

73. **C**

Let E, H, M be the sets of people speaking English, Hindi and Marathi. Hence  $n(M)=12 = n(E \text{ and } M)+2+3+6$ . Hence,  $n(E \text{ and } M)=1$ . Similarly,  $n(H)=n(H \text{ and } M)+13+2+3=20$ . Hence,  $n(H \text{ and } M)=2$ . As all employees speak at least one of these languages, the sum of all numbers=50. Hence  $n(E \text{ and } H' \text{ and } M')+1+2+3+6+2+13=50$ . Hence  $n(E \text{ and } H' \text{ and } M')+27=50$ . Hence the number of employees speaking only English is 23.

74. **C**

Assuming only statement 1:

The triangle ABC is an isosceles triangle with angle A = angle B.

From this alone we cannot determine if the triangle is equilateral.

Using Statement 2: The triangle ABC is an isosceles triangle with angle C = angle B.

From this alone we cannot determine if the triangle is equilateral.

Combining 1 and 2, we get angle A=angle B=angle C.

Hence triangle is equilateral. Hence option C.



75. C

Let x be the amount of water transferred in 30 mins.

Hence,  $(10-x)=3(2+x)=6+3x$ .

So,  $x=1$  litre.

So to remove 10 litres it will take 5 hrs.

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76. B

Let the two solutions be mixed in the ratio 1:k.

petrol:diesel in the resultant solution =  $[(5/14)*1 + (3/10)*k]/[(9/14)*1+(7/10)*k] = 1/2$

$\Rightarrow k = 5/7$ , therefore the required ratio = 7:5

77. E

$X + Y = 1000$   $1.2X + 0.2Y = 1000$   $X = 800$ ,  $Y = 200$

78. E

Using Statement 1: As length of Shatabdi is not given we cannot estimate the speed of Rajdhani. Using Statement 2: Let the speed be S.

$100/S = 20$  secs or  $S=5\text{m/s}$ .

So, the question can be answered using Statement 2, but not by using Statement 1.

**Explanation [79 - 82]:**

The composite scores of different persons are as follows

A  $\rightarrow (50/100)*25 + (40/100)*20 + (85/100)*15 + (60/100)*15 + (70/100)*25 = 12.5+8+12.75+9+17.5 = 59.75$

B  $\rightarrow (30/100)*25 + (70/100)*20 + (60/100)*15 + (65/100)*15 + (60/100)*25 = 7.5+14+9+9.75+15 = 55.25$

C  $\rightarrow (50/100)*25 + (35/100)*20 + (60/100)*15 + (80/100)*15 + (45/100)*25 = 12.5 + 7 + 9 + 12 + 11.25 = 51.75$

D  $\rightarrow (45/100)*25 + (45/100)*20 + (55/100)*15 + (65/100)*15 + (80/100)*25 = 11.25 + 9 + 8.25 + 9.75 + 20 = 58.25$

E  $\rightarrow (75/100)*25 + (60/100)*20 + (55/100)*15 + (70/100)*15 + (55/100)*25 = 18.75+12+8.25+10.5+13.75 = 63.25$

79. A

Since E scored the highest marks, the correct option to choose is A.

80. C

So, the correct option to choose is C.

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81. E

D is in short of  $63.25-58.25 = 5$  points.

The number of additional points D has to get in aptitude to get the highest composite score =  $(5/20\%) = 5/0.2 = 25$ .

Therefore the total score of D in aptitude must be  $45+25 = 70$ .

82. B

Given A gets maximum marks in comprehension skills, i.e 100 marks, that implies A gets 15 more marks in comprehension skills.

In this scenario, the composite score of A =  $59.75 + (15/100)*0.15 = 59.75 + 2.25 = 62$ .

Therefore, the rank of A would be 2.

83. D

The amount of money (in thousands) spent by each of the friends in six cities as per the chart provided is:



	Pune	Mumbai	Hyderabad	Delhi	Bangalore
Aman	25	10	15	30	30
Billu	20	25	30	25	10
Dinesh	25	35	40	20	5
Ekansh	30	15	5	35	35
Ganesh	35	15	20	40	30
Hritesh	10	20	5	20	40

After spending in Hyderabad, each of the six friends are left with same amount of money, say 'x'.

By then Aman, Billu, Dinesh, Ekansh, Ganesh and Hritesh have spent a total of 50, 75, 100, 50, 70 and 35 thousand respectively.

Since, they are left with the same amount after this, all of the six friends must have started the tour with  $(x+50)$ ,  $(x+75)$ ,  $(x+100)$ ,  $(x+50)$ ,  $(x+70)$  and  $(x+35)$  thousand respectively.

The following table shows the amount left with each of the friends after visiting the particular cities:

	Beginning	Pune	Mumbai	Hyderabad	Delhi	Bangalore
Aman	$x+50$	$x+25$	$x+15$	x	$x-30$	$x-60$
Billu	$x+75$	$x+55$	$x+30$	x	$x-25$	$x-35$
Dinesh	$x+100$	$x+75$	$x+40$	x	$x-20$	$x-25$
Ekansh	$x+50$	$x+20$	$x+5$	x	$x-35$	$x-70$
Ganesh	$x+70$	$x+35$	$x+20$	x	$x-40$	$x-70$
Hritesh	$x+35$	$x+25$	$x+5$	x	$x-20$	$x-60$

Hritesh had the least amount before the start of the tour.

**84. A**

The amount of money (in thousands) spent by each of the friends in six cities as per the chart provided is:

	Pune	Mumbai	Hyderabad	Delhi	Bangalore
Aman	25	10	15	30	30
Billu	20	25	30	25	10
Dinesh	25	35	40	20	5
Ekansh	30	15	5	35	35
Ganesh	35	15	20	40	30
Hritesh	10	20	5	20	40

After spending in Hyderabad, each of the six friends are left with same amount of money, say 'x'.

By then Aman, Billu, Dinesh, Ekansh, Ganesh and Hritesh have spent a total of 50, 75, 100, 50, 70 and 35 thousand respectively.

Since, they are left with the same amount after this, all of the six friends must have started the tour with  $(x+50)$ ,  $(x+75)$ ,  $(x+100)$ ,  $(x+50)$ ,  $(x+70)$  and  $(x+35)$  thousand respectively.

The following table shows the amount left with each of the friends after visiting the particular cities:

	Beginning	Pune	Mumbai	Hyderabad	Delhi	Bangalore
Aman	$x+50$	$x+25$	$x+15$	x	$x-30$	$x-60$
Billu	$x+75$	$x+55$	$x+30$	x	$x-25$	$x-35$
Dinesh	$x+100$	$x+75$	$x+40$	x	$x-20$	$x-25$
Ekansh	$x+50$	$x+20$	$x+5$	x	$x-35$	$x-70$
Ganesh	$x+70$	$x+35$	$x+20$	x	$x-40$	$x-70$
Hritesh	$x+35$	$x+25$	$x+5$	x	$x-20$	$x-60$

After Bangalore's trip, Dinesh is left with the highest amount.

**85. E**

The amount of money (in thousands) spent by each of the friends in six cities as per the chart provided is:

	Pune	Mumbai	Hyderabad	Delhi	Bangalore
Aman	25	10	15	30	30
Billu	20	25	30	25	10
Dinesh	25	35	40	20	5
Ekansh	30	15	5	35	35
Ganesh	35	15	20	40	30
Hritesh	10	20	5	20	40

After spending in Hyderabad, each of the six friends are left with same amount of money, say 'x'.

By then Aman, Billu, Dinesh, Ekansh, Ganesh and Hritesh have spent a total of 50, 75, 100, 50, 70 and 35 thousand respectively.

Since, they are left with the same amount after this, all of the six friends must have started the tour with (x+50), (x+75), (x+100), (x+50), (x+70) and (x+35) thousand respectively.

The following table shows the amount left with each of the friends after visiting the particular cities:

	Beginning	Pune	Mumbai	Hyderabad	Delhi	Bangalore
Aman	x+50	x+25	x+15	x	x-30	x-60
Billu	x+75	x+55	x+30	x	x-25	x-35
Dinesh	x+100	x+75	x+40	x	x-20	x-25
Ekansh	x+50	x+20	x+5	x	x-35	x-70
Ganesh	x+70	x+35	x+20	x	x-40	x-70
Hritesh	x+35	x+25	x+5	x	x-20	x-60

Ganesh is left with Rs. (x-70) thousand after the trip ends.

So, x=Rs. 100,000

Amount left with Billu after his trip to Mumbai= Rs. (x+30) thousand= Rs. 130,000



#### 86. C

The amount of money (in thousands) spent by each of the friends in six cities as per the chart provided is:

	Pune	Mumbai	Hyderabad	Delhi	Bangalore
Aman	25	10	15	30	30
Billu	20	25	30	25	10
Dinesh	25	35	40	20	5
Ekansh	30	15	5	35	35
Ganesh	35	15	20	40	30
Hritesh	10	20	5	20	40

After spending in Hyderabad, each of the six friends are left with same amount of money, say 'x'.

By then Aman, Billu, Dinesh, Ekansh, Ganesh and Hritesh have spent a total of 50, 75, 100, 50, 70 and 35 thousand respectively.

Since, they are left with the same amount after this, all of the six friends must have started the tour with (x+50), (x+75), (x+100), (x+50), (x+70) and (x+35) thousand respectively.

The following table shows the amount left with each of the friends after visiting the particular cities:

	Beginning	Pune	Mumbai	Hyderabad	Delhi	Bangalore
Aman	x+50	x+25	x+15	x	x-30	x-60
Billu	x+75	x+55	x+30	x	x-25	x-35
Dinesh	x+100	x+75	x+40	x	x-20	x-25
Ekansh	x+50	x+20	x+5	x	x-35	x-70
Ganesh	x+70	x+35	x+20	x	x-40	x-70
Hritesh	x+35	x+25	x+5	x	x-20	x-60

Ganesh is left with Rs. (x-70) thousand after the trip ends.

So, x=Rs. 105,000

Amount left with Dinesh after his trip to Pune= Rs. (x+75) thousand= Rs. 180,000

#### 87. B

Let the final speed of b be p and x be the total distance.

After meeting, the distance covered by A is  $\frac{4}{19}$  of the total distance and distance covered by B is  $\frac{15}{19}$  of the total distance. Assuming both meet at R,  $PR = \frac{4x}{19}$ ,  $QR = \frac{15x}{19}$

Speed after meet is in the ratio 12 : 15.

Now since both reach the same time, the time taken must be the same.

$$QR/12 = PR/p$$

$$\Rightarrow \frac{15x/19}{12} = \frac{4x/19}{p}$$

$$\Rightarrow p = 3.2$$

$$\Rightarrow \text{Fraction of original speed} = \frac{3.2}{15} = \frac{16}{75}$$

88. **C**

Using Statement 1, let  $X=19p+11$ .

$X$  can be of two forms  $X=38q+11$  or  $X=38q+30$ .

Using Statement 2, we get that  $X$  is even.

Hence  $X=38q+30$  and the remainder is 30.

So, we can answer the question using both the Statements together, but not by using any of the two statements individually

89. **D**

In the given letters S, E, C, T, I, O, N The number of words starting with C is 6!

The number of words starting with E is 6!

The number of words starting with I is 6!

The number of words starting with N is 6!

The number of words starting with O is 6!

The number of words starting with SC is 5!

The number of words starting with SECI is 3!

The number of words starting with SECN is 3!

The number of words starting with SECO is 3!

The number of words starting with SECTINO 1

The number of words starting with SECTION is 1

The rank of word is  $5(6!) + 5! + 3(3!) + 2 = 3740$

90. **D**

Case 1: Let a woman be half as efficient as a man.

So, work done by 12 women = Work done by 6 men

So,  $8 + 6 = 14$  men can complete a piece of work in 12 days.

Work done by 10 women = Work done by 5 men

5 men can do the work in  $14 \times 12 / 5$  days = 33.6 days

Case 2: Let a woman be twice as efficient as a man.

So, work done by 12 women = Work done by 24 men

So,  $8 + 24 = 32$  men can complete a piece of work in 12 days.

Work done by 10 women = Work done by 20 men

20 men can do the same work in 19.2 days

So, the required range is 19.2 days to 33.6 days

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91. **E**

Every 60 seconds, the three words beam together for a second. So, total time they beam together in an hour is 1 minute

92. **C**

The total number of students in the school is a multiple of the sum of the ratios of boys and girls.

As the total number of students is a prime, it equals the sum of the ratios of boys and girls.

Among the options given, only 18:13 is valid as  $18+13=31$  is a prime.

The other sums,  $212+217 = 429$ ,  $221+252=473$ ,  $171+172=343$  and  $18+31=49$  are all composite.

93. E

$$a + ar + ar^2 = 73 \text{ and } a^3 r^3 = 512$$

So, the three terms are (1, 8, 64) or (64, 8, 1).

Without knowing the order, we can't determine the fourth term, it can be either 512 or 0.125

94. D

$$\frac{{}^nP_r}{{}^nC_r} = r!$$

$$r! = \frac{181440}{36} = 5040$$

So,  $r = 7$

95. C

$1.1 \times 1.12 \times 1.15 = 1.4168$ . So, average yearly increase is  $0.4168/3 = 13.89\%$

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96. E

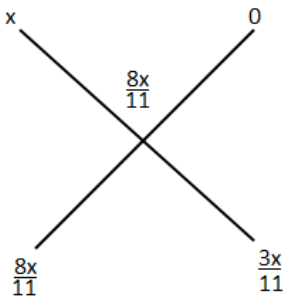
Let the cost price of rice be  $x$

$$\text{SP of mixture} = \frac{4x}{5}$$

Profit = 10%

$$\text{So, CP of mixture} = \frac{8x}{11}$$

Using alligation method we can determine ratio of rice and stones



Since, the ratio is 8:3, for 40 kg rice, 15 kg of stones will be required.

Hence, option E is correct.

97. A

From the first equation, the sum of the roots is 15 and from the second equation, the product of the roots is 50.

Therefore the quadratic equation is  $x^2 - 15x + 50 = 0$ .

The roots are 5, 10.

98. C

From statement 1 alone, we do not know if Saurav or Viru has got less than Sachin, from statement 2 alone we cannot know if Sachin or Viru got less than Saurav. Let the total number of quantities be  $9 \times 11 \times 14 = 1386$ . From statement 1, we know that Sachin received 252 quantities. From 2, we know that Saurav received 287 quantities. Therefore, from both the statements, we know that Sachin received the least amount (though we do not know the absolute value of the quantity received, we can still answer the question).

99. B

A rectangle can be formed using two horizontal bars and two vertical bars. This can be done in  ${}^{13}C_2$  and  ${}^{17}C_2$  ways respectively and both together can be done in  ${}^{13}C_2 \times {}^{17}C_2$  ways =  $78 \times 136 = 10608$

100. C

Using Statement 1, we know that  $X$  lies in  $(3,4)$ .

So  $X^2$  lies in  $(9,16)$ .

Using Statement 2, we know that  $Y^2$  is greater than 25.

So,  $X^2 - Y^2 < 0$

Hence, the question can be answered using both the statements together.

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101. **C**

GULLIBLE contains 8 letters.

There are 5 consonants. Therefore, 6 spaces will be created around these consonants.

The consonants can be arranged in  $5!/3! = 20$  ways.

The 3 vowels can be put in any 3 of these 6 spaces.

The 3 spaces can be selected in  ${}^6C_3 = 20$  ways.

The 3 vowels can be arranged in  $3! = 6$  ways.

Therefore, the total number of ways in which the letters of the word GULLIBLE can be arranged such that no 2 vowels are together is  $20 \times 20 \times 6 = 2400$ .

Therefore, option C is the right answer.

102. **A**

The total number of possibilities are TTT, TTH, THT, HTT, THH, HTH, HHT and HHH.

We need to select those cases in which there are at least 2 Hs.

There are 4 such cases out of 8.

=> Probability =  $4/8 = 0.5$

103. **B**

The no. of 3 digit numbers are 900. Natural numbers which are perfect squares are 1, 4 and 9. The no. of numbers that can be formed without 1, 4 and 9 =  $6 \times 7 \times 7$ . Hence  $p = 1 - 6 \times 7 \times 7 / 900 = 101/150$ .

104. **A**

Let the cost price of 1 kilo gram oil be Rs. 1000.

As, the trader sells 900 grams oil for Rs. 990, the profit percentage is  $(990-900)/900 = 10\%$

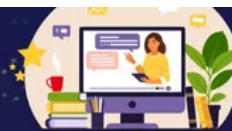
105. **A**

If  $\log_3 A = x$  then  $\log_A 3 = 1/x$ . If  $\log_{12} A = y$  then  $\log_A 12 = 1/y$   $\log_A 3 + \log_A 12 = \log_A 36$

$\frac{1}{x} + \frac{1}{y} = 2 \log_A 6$ ,  $\log_A 6 = (x+y)/2xy$

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106. **A**

The alphabetical order of the letters is AALMR.

Number of words beginning with AA =  $3! = 6$

Next would come ALAMR and then ALARM.

Hence, rank would be 8.

107. **E**

The volume of the football is 8 times the volume of the cricket ball. So, the radius of the football is twice the radius of the cricket ball. Hence the surface area of the football is 4 times (300% more) that of the cricket ball.

108. **C**

Let the ratio of number girls to the number of boys in the school be  $n:1$ .

$$\text{Hence, Average height}(C) = \frac{\text{Total Height}}{\text{Total Students}}$$

$$\longrightarrow C = \frac{n \cdot A + 1 \cdot B}{n + 1}$$

$$\longrightarrow n \cdot C + C = n \cdot A + 1 \cdot B$$

$$\longrightarrow n \cdot (C - A) = B - C$$

$$\text{So, } n = \frac{B-C}{C-A}$$

$$\% \text{ of girls} = \frac{n}{n+1} = \frac{\frac{B-C}{C-A}}{\frac{B-C}{C-A} + 1} = \frac{B-C}{B-A}$$

