



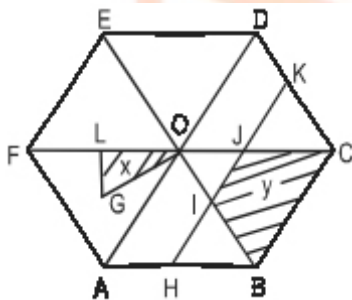
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First CAT Mock Test

1. Each root of the equation $ax^3 - 7x^2 + cx + 231 = 0$ is an integer. One of the roots is $-1/2$ times the sum of the other two roots. What is the sum of all the possible values of a ?

- (a) 17 (b) -7
(c) -17 (d) None of these

2. In the figure given below, ABCDEF is a regular hexagon whose diagonals intersect at point O. G is the centroid of triangle AOF and L is the midpoint of FO. The line segment HK joins the midpoints of AB and CD. Find the ratio of the shaded area marked 'x' to the shaded area marked 'y'.



- (a) 3 : 7 (b) 2 : 9
(c) 2 : 5 (d) 3 : 11

3. $M = \sqrt{3 - \sqrt{5} + \sqrt{9 - 4\sqrt{5}}}$ and $N = \sqrt{\sqrt{7} - 1 - \sqrt{11 - 4\sqrt{7}}}$. What is the value of $\frac{M-N}{M+N}$?

- (a) 0 (b) 1
(c) -1 (d) None of these

4. $P + 1/Q = Q + 1/R = 1$, where P, Q and R are real numbers. What is the value of $PQR + R + 1/P$?

- (a) -2 (b) -1
(c) 0 (d) Cannot be determined

5. Anant purchased x chocolates for Rs. y , where y is a natural number. The shopkeeper had offered to give him $x+10$ chocolates for Rs. 2. Anant declined the offer though it would have resulted in a saving of 80 paise per dozen chocolates for him. Which of the following can be the number of chocolates purchased by Anant?

- | | |
|-------|--------|
| (a) 1 | (b) 3 |
| (c) 5 | (d) 15 |

6. There are two boxes – I and II. Each contains balls of two colours – White and Black. A ball is selected at random. It is known that $P(W \cap I) = 0.3$ and $P(B'|II) = 0.8$, where W, B, I and II represent the events White ball selected, Black ball selected, ball selected from Box I and ball selected from Box II respectively. Find $P(II|B)$.

- | | |
|-----------|-----------|
| (a) $2/3$ | (b) $1/3$ |
| (c) $1/2$ | (d) $3/4$ |

7. N is a five-digit perfect square whose unit digit is same as the tens digit. How many such N are there?

- | | |
|--------|--------|
| (a) 31 | (b) 30 |
| (c) 33 | (d) 32 |

8. $N = 70! \times 69! \times 68! \times \dots \times 3! \times 2! \times 1!$

Which of the following represents the 147th digit from the right end of N ?

- | | |
|-------|-------|
| (a) 2 | (b) 0 |
| (c) 5 | (d) 7 |

9. If $n = \frac{a}{b+c} + \frac{b}{c+a} + \frac{c}{a+b}$, where a, b and c are the three sides of a triangle, then which of the following best describes the range in which n lies?

- | | |
|----------------|------------------|
| (a) $[3/2, 2)$ | (b) $(2/3, 3/2)$ |
| (c) $(1, 5/2]$ | (d) $(4/3, 5/3)$ |

10. P and Q are two points 100 km apart. A starts running from P towards Q at 10 km/hr. B starts running from Q at exactly the same time and in the same direction as that of A at 20 km/hr. After an hour, B turns back and changes his speed to 10 km/hr.

After another hour, B again turns back and changes his speed to 20 km/hr. He keeps on changing his speed and direction in this manner till the time he meets A. After how much time will A and B meet for the first time?

- | | |
|--------------|--------------|
| (a) 30 hours | (b) 18 hours |
| (c) 10 hours | (d) 20 hours |

11. If a and b are real numbers such that $a^{a^b} = b$ and $a \neq b$, then what is the value of $a^b - b$?

- | | |
|----------|---------|
| (a) -1 | (b) 0 |
| (c) 1 | (d) 2 |

12. A function $f(x)$ is defined for all real values of x as $f(x) = \frac{x-1}{x+1}$. If $y_1 = f(x)$, $y_2 = f(f(x))$, $y_3 = f(f(f(x)))$ and so on, then what is the value of y_{501} ?

- | | |
|----------------|-------------------|
| (a) $-1/x$ | (b) $(x+1)/(x-1)$ |
| (c) $501x - 1$ | (d) $(x-1)/(x+1)$ |

13. What is the equation of the straight line which passes through the point of intersection of the straight lines $3x + 4y - 11 = 0$ and $x + y - 3 = 0$ and is parallel to the line $2x + 5y = 0$?

- | | |
|------------------------|------------------------|
| (a) $5x - 2y - 12 = 0$ | (b) $2x + 5y - 12 = 0$ |
| (c) $2x + 5y - 9 = 0$ | (d) $5x + 2y - 9 = 0$ |

14. If a and b are integers such that $\log_2(a+b) + \log_2(a-b) = 3$, then how many different pairs (a, b) are possible?

- | | |
|---------|---------|
| (a) 0 | (b) 1 |
| (c) 2 | (d) 3 |

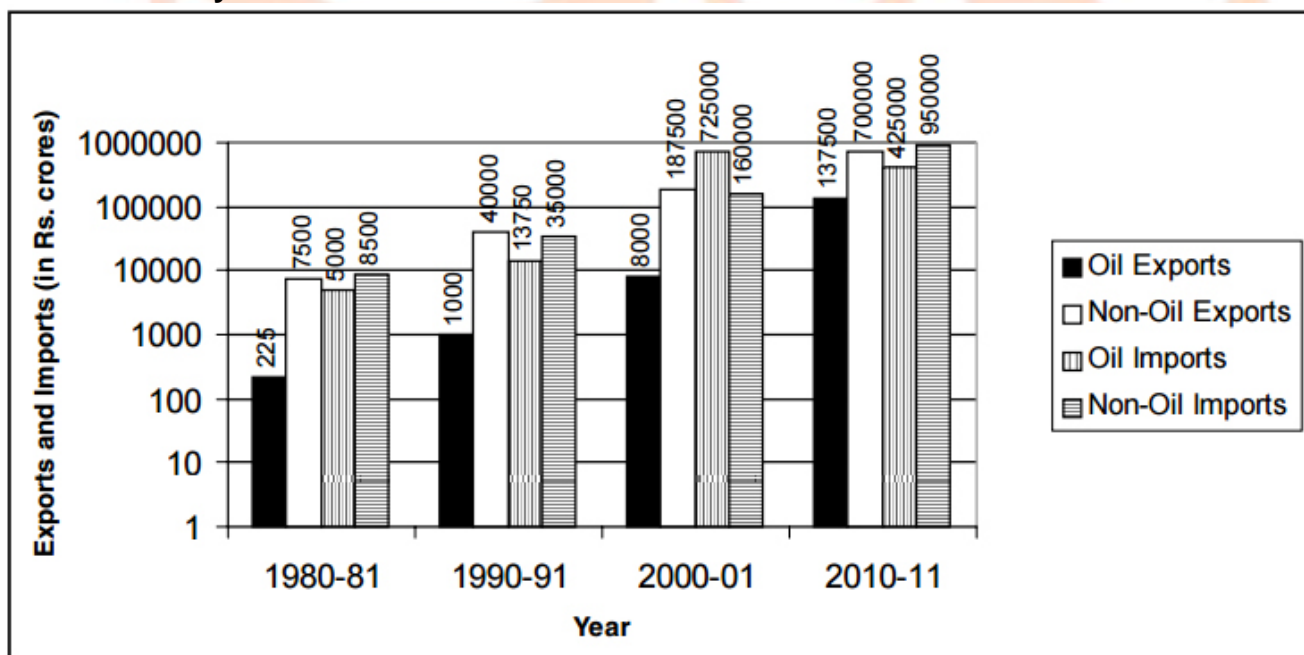
15. A cylindrical pipe of length 75 m, through which water flows at the rate of 54 km/hr, can fill 80% of a cuboidal tank of 118800 m^3 capacity in 14 hours. What is the radius (in cm) of the cross section of the pipe?

- (a) 20 (b) 25
(c) 50 (d) Cannot be determined

16. A large cube is formed by bringing together 729 smaller identical cubes. Each face of the larger cube is painted with red colour. How many smaller cubes are there none of whose faces is painted?

- (a) 216 (b) 256
(c) 343 (d) None of these

Directions for questions 17 and 18 : Answer the questions on the basis of the information given below. The graph given below shows the total Exports and Imports of a country for four different years



Please note :

- (i) Total Exports is the sum of Oil Exports and Non-Oil Exports.
- (ii) Total Imports is the sum of Oil Imports and Non-Oil Imports.
- (iii) Oil Trade Balance is the surplus of Oil Exports over Oil Imports.

- (iv) Non-Oil Trade Balance is the surplus of Non-Oil Exports over Non-Oil Imports.
- (v) Total Trade Balance is the sum of Oil Trade Balance and Non-Oil Trade Balance.

17. Which of the following experiences the highest increase?

- (a) Oil Exports from 2000-01 to 2010-11. (b) Oil Imports from 1990-91 to 2000-01.
- (c) Oil Trade Balance from 1990-91 to 2000-01. (d) Total Trade Balance from 1990-91 to 2000-01.

18. Which of the following experiences the lowest percentage change?

- (a) Non-Oil Exports from 2000-01 to 2010-11. (b) Total Exports from 1990-91 to 2000-01.
- (c) Oil Imports from 1980-81 to 1990-91. (d) Total Imports from 2000-01 to 2010-11.

Directions for questions 19 and 20: Answer the questions on the basis of the information given below.

The performance appraisal of the employees of Hondai Motors Pvt Ltd. was done three times in the year 2010. The first appraisal was done in January, the second in July and the third in November. Only the employees who were appraised in January were eligible for appraisal in July and only those who were appraised in July were eligible for appraisal in November.

During an appraisal, an employee was appraised on exactly one of the three performance areas – Individual Performance, Team Performance and Moral Conduct. An employee already appraised on a particular performance area was not appraised on the same performance area in subsequent appraisal(s) during the year.

The table given below shows the number of employees appraised in each of the three appraisal months in 2010 for different performance areas.

Performance Area	Appraisal Month		
	January	July	November
Individual Performance	71	30	9
Team Performance	67	22	13
Moral Conduct	97	29	11

19. How many employees of Hondai Motors Pvt Ltd. were appraised on exactly one performance area in 2010?

- | | |
|---------|-------------------|
| (a) 235 | (b) 121 |
| (c) 154 | (d) None of these |

20. Among the employees of Hondai Motors Pvt Ltd. who were appraised in 2010, how many were not appraised on Individual Performance?

- | | |
|---------|---------|
| (a) 125 | (b) 134 |
| (c) 113 | (d) 165 |

21. If Sajid and Hasan sold an equal number of shares on Day 1, then which of the following statements would definitely be true?

- I. Hasan made more profit than Sajid on Day 1.
- II. Hasan made less profit than Sajid on Day 1.
- III. Hasan's Margin was more than Sajid's Margin on Day 1.
- IV. Hasan's Margin was less than Sajid's Margin on Day 1.

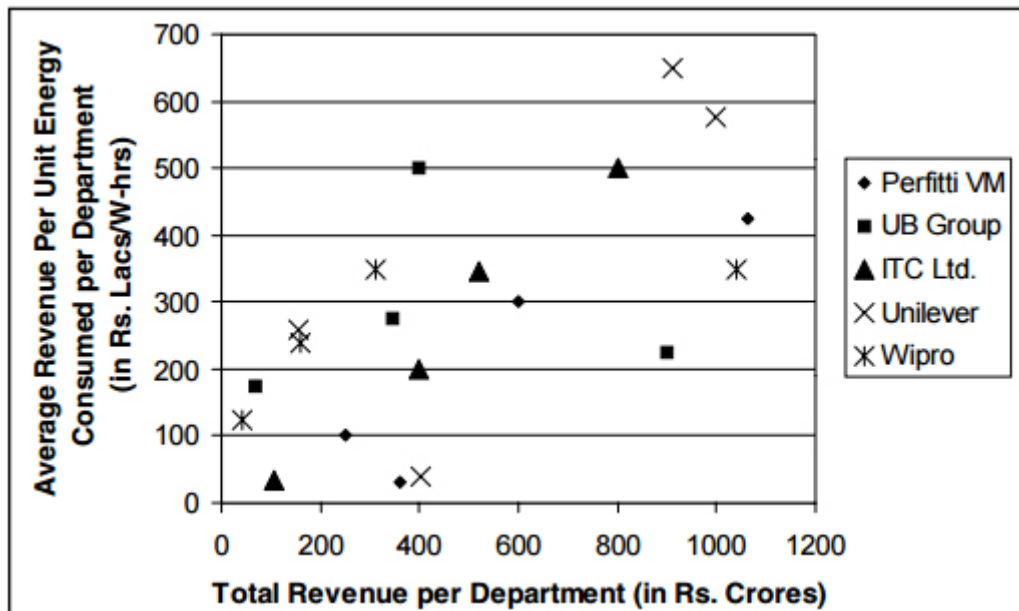
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|---------------|---------------|
| (a) I only | (b) I and IV |
| (c) II and IV | (d) I and III |

22. What was the ratio of Hasan's Margin to Sajid's Margin on Day 2?

- | | |
|-------------|--------------------------|
| (a) 13 : 20 | (b) 11 : 20 |
| (c) 20 : 13 | (d) Cannot be determined |

Directions for questions 24 to 26 : Answer the questions on the basis of the information given below.

The graph given below shows the statistics of five companies – Perfetti VM, UB Group, ITC, Unilever and Wipro – in India. Each point on the graph indicates the Total Revenue generated by a different department of one of these companies and the Average Revenue generated per Unit Energy Consumed by that particular department.



23. If the departments represented in the graph are the only departments in the five companies where energy is consumed, then for which company is the Energy Consumption the highest?

- (a) Wipro (b) UB Group
(c) ITC Ltd. (d) None of these

24. How many of the represented departments across the five companies have consumed less than 100W-hrs of energy?

- (a) Seven (b) Three
(c) Five (d) Six

25. Which of the five companies has the highest number of departments that generate more than Rs. 600 crores as the Total Revenue and consume less than 200W-hrs of energy?

- (a) Perfitti VM (b) Unilever
(c) Wipro (d) ITC Ltd.

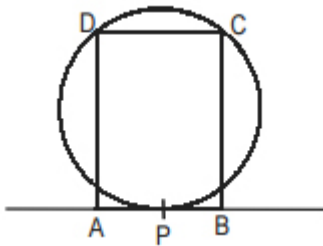
26. A 3-digit natural number 'abc', where a, b and c are distinct digits, when increased by 33.33% becomes 'cab'. When 'cab' is increased by 33.33% it becomes 'bca'. How many such numbers are there?

- (a) 0 (b) 1

(c) 2

(d) 5

27. In the figure given below, a tangent is drawn at point P on a circle of radius 1 cm. A and B are two points on the tangent and ABCD is a rectangle, where C and D are two points on the circumference of the circle. What is the approximate area (in cm^2) of the rectangle ABCD if $2AB = BC$?



(a) 1.77

(b) 1.50

(c) 1.83

(d) 1.60

28. In how many ways can 18 identical balls be distributed among 3 identical boxes?

(a) 25

(b) 210

(c) 105

(d) 37

29. One hundred ml of alcohol is mixed with y ml of water. Forty ml of this alcohol-water mixture is added to $2y$ ml of another alcohol-water mixture whose alcohol concentration is 26%. If the percentage of water in the resultant mixture is $2y\%$, then what is the value of y ?

(a) 30

(b) 40

(c) 20

(d) 25

33. What is the difference between the number of people who live on floor 3 and floor 5?

(a) 0

(b) 1

(c) 3

(d) 2

31. Who among the following lives on floor 6?

(a) Eric

(b) David

(c) Chuck

(d) Gilmour

32. How many people live on a floor higher than the one on which Jimmy lives?

(a) 7

(b) 5

(c) 9

(d) 6

33. A paragraph is given below from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way
The realist at last loses patience with ideals altogether, and sees in them only something to blind us, something to numb us, something to murder self in us, something whereby, instead of resisting death, we can disarm it by committing suicide. The idealist, who has taken refuge with the ideals because he hates himself and is ashamed of himself, thinks that all this is so much the better,

(a) And it is not the ignorant and stupid who maintain this error, but the literate and the cultured

(b) The idealist says, 'Realism means egotism; and egotism means depravity.'

(c) The realist, who has come to have a deep respect for himself and faith in the validity of his own will, thinks it so much the worse

(d) Unfortunately, this is the sort of speech that nobody but a realist understands.

34. A paragraph is given below from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.
Christopher Dell's "Monsters: A Bestiary of the Bizarre" is a visual typology of the monstrous. Dell draws on images from across centuries and continents to celebrate the hideous fecundity of the human imagination. 'Resistance to monsters is clearly futile,' he writes. 'While we may no longer worry about being eaten by trolls on the way home, there remains a fascination with, and fear of, these creatures that have shadowed us throughout history.'

(a) It shows us what man's imagination can do to man.'

(b) After all, we should remember God is our creator.'

(c) After all, we should remember who created them: not the gods, not Echidna, but man.'

(d) Believe in God, not in fantasy.'

35. A paragraph is given below from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way. Months after its debut, “Hillary: The Movie” faces the supreme court. The justices’ review of the documentary financed by long term critics of Secretary of State Hillary Clinton could bring more than just a thumbs up or thumbs down.

- | | |
|---|--|
| (a) It may win all time high approval ratings for the Secretary of State | (b) It will vindicate the faith of movie goers the world over. |
| (c) It may settle the question of whether Hillary deserves to be so popular | (d) It may settle the question of whether the government can regulate a politically charged film as a campaign ad. |

36. Five sentences are given below, labeled A, B, C, D and E. They need to be arranged in a logical order to form a coherent paragraph. From the given options, choose the most appropriate one.

- A.** In 1986 it was renamed Recent Acquisitions because, as the museum’s director Philippe de Montebello wrote, the rise in art prices “has limited the quantity and quality of acquisitions to the point where we can no longer expect to match the standards of just a few years ago.”
- B.** And as the museum’s buying power fades, public experience of art is impoverished, and the brain drain of gifted young people from curatorship into art dealing accelerates.
- C.** From the point of view of American museums, the art-market boom is an unmitigated disaster
- D.** The symbol of the Metropolitan Museum of Art’s plight is an annual booklet that used to be titled Notable Acquisitions.
- E.** These institutions voice a litany of complaints, a wrenching sense of disfranchisement and weakness, as their once adequate annual buying budgets of \$2 million to \$5 million are turned to chicken feed by art inflation.

- | | |
|-----------|-----------|
| (a) ABECD | (b) DABEC |
| (c) CEDAB | (d) DABCE |

37. The passage given below is followed by a question. Choose the most appropriate answer to the question.

Why should this absolutely God-given faculty of memory retain so much better the events of yesterday than those of last year, and, best of all, those of an hour ago? Why, again, in old age should its grasp of childhood’s events seem firmest? Why should repeating an experience strengthen our recollection of it? Why should drugs, fevers, asphyxia, and

excitement resuscitate things long since forgotten? . . . such peculiarities seem quite fantastic; and might, for aught we can see a priori, be the precise opposites of what they are. Evidently, then, the faculty does not exist absolutely, but works under conditions; and the quest of the conditions becomes the psychologist's most interesting task.

Which one of the following can be inferred from the passage?

- | | |
|--|---|
| (a) We tend to misunderstand our brains' status quo. | (b) The functions of faculty of memory are beyond human comprehension. |
| (c) Psychologists are trying to understand how memory functions. | (d) Psychologists believe that understanding the conditions under which faculty of memory operates is the key to understand this faculty. |

38. Six persons – Chetan, Kartik, Hari, Pankaj, Naresh and Vicky – are married to Radha, Kiran, Shama, Hema, Divya, and Charu, not necessarily in the same order. There is no person among the six whose name starts with the same letter as his wife's name. They are going on a picnic in three cars such that each car has two couples. It is known that :

- (i) Charu is not in the same car as Hari.
- (ii) Radha is in the same car as Pankaj.
- (iii) Shama is in the same car as Hema.
- (iv) Kiran is not in the same car as Naresh.
- (v) Divya is not in the same car as Charu.

If Vicky is in a car in which nobody's name starts with the same letter as that of any of the other eleven persons, then which of the following statements cannot be true?

- | | |
|-------------------------------|---------------------------------|
| (a) Shama is married to Hari | (b) Hema is married to Kartik. |
| (c) Radha is married to Vicky | (d) Pankaj is married to Divya. |

39. Eight persons – Anu, Bindu, Candy, Dolly, Emran, Fiza, Gauri and Hemant – are sitting at a square table, in the same order, in clockwise direction. Two persons are sitting on each side of the table. Two of them are Managers, two Executives, two Consultants and two Engineers. The Executives are sitting opposite each other. One of the Executives is sitting on the same side of the table as an Engineer and on his/her left. The Consultants are sitting opposite each other and each of them is sitting next to an Engineer. The Managers are sitting next to each other. If Anu is a Consultant who is sitting next to a Manager, then which of the following statements is definitely false?

- | | |
|--------------------------|--|
| (a) Fiza is an Executive | (b) Hemant is sitting next to a Manager. |
|--------------------------|--|

Directions for questions 41 to 43 : The passage given below is followed by a set of three questions. Choose the most appropriate answer to each question.

Don't shoot the messenger is usually a good rule to live by. But it is hard when it comes to Bernie Madoff, the former billionaire serving a 150-year jail term for running history's biggest Ponzi scheme.

Yet, in recent jailhouse interviews, Madoff has given a valuable insight into causes of the Great Recession, whose awful impact has blighted millions of lives across America and around the world. No one can deny Madoff's activities were an appalling fraud, but, he insists, what about the involvement of everyone else in the global financial system.

"They had to know," Madoff told the New York Times, referring to the banks and hedge funds that greedily reaped millions in fees from his operations. He pointed out to New York magazine that he refused to give the banks any information as to how he got such high returns and would not let them do due diligence. Yet they never complained.

"These banks and these funds had to know there were problems," he said.

No wonder that Irving Picard, the trustee representing Madoff's victims, has filed a civil suit seeking damages from banks who did business with Madoff. They include big Wall Street names like HSBC, Citigroup, JP Morgan and Merrill Lynch. Just because Madoff is a crook sitting in jail does not mean he isn't right when he tells us to look elsewhere, too.

Yet, unfortunately, Madoff is the only one behind bars.

That is the worst thing about the whole sorry saga. Madoff and his scheme have become a useful foil for the entire finance industry – and a distraction from its venality. It's always Madoff that the tabloids put on the front pages. It's Madoff who is the ultimate banking bogey man. It's Madoff who spurs public outrage and whose jailing has satiated a quest for justice. It is the classic "one bad apple" defence of the kind banks and Wall Street specialise in. It is not the system's or the bosses' fault, they say, it is just a few rogue operators and they have been dealt with.

But we should not be fooled. We should listen to Madoff when he fingers the whole financial sector and the giant firms within it as part of the problem, too. He told New York magazine :

“It’s unbelievable ... no one has has any criminal convictions. The whole new regulatory reform is a joke.” He’s not alone in being amazed that, despite the astonishing frauds and manipulations by Wall Street during the boom years, not one top banking or hedge fund executive sits in jail. It is indeed jaw-dropping.

40. Which of these can be inferred as the ‘insight’ given by Madoff?

- | | |
|---|--|
| (a) The Recession was caused by a few rogue operators. | (b) The Recession was caused by the failure of the banks and financial organizations. |
| (c) The Recession was caused by the venality of the finance industry. | (d) The Recession was caused, in part, by the actions of the banking and financial industry. |

41. Why does the author call Madoff the ultimate banking bogeyman?

- | | |
|---|---|
| (a) Madoff has come to represent the wrongs committed by the banking industry | (b) Madoff has come to represent the type of agent that caused the recession. |
| (c) Madoff’s actions were like those of a bogeyman. | (d) Madoff was to blame for the banking industry losing millions. |

42. Which one of these would be the best title for the passage?

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|--|---|
| (a)) Bernie Madoff – The new banking poster boy | (b) Beyond Madoff - Who else is to blame for the Recession? |
| (c) How did Bernie Madoff cause the Recession? | (d) How did the financial sector contribute to the Recession? |

Directions for questions 43 and 44: The passage given below is followed by a set of two questions. Choose the most appropriate answer to each question.

The British monarch, Elizabeth II, in a green dress and leprechaun hat daintily sipping a glass of Guinness through a straw would have been a most fantastic depiction anytime in her past 59-year reign. But on Wednesday a cartoon in London’s Independent came close to reality, excepting perhaps the frothy beer mug dancing in the air. For the first time in a century, ever since her grandfather, George V, crossed the Irish Sea, a reigning British monarch has set foot on Ireland. That absence of a hundred years puts into relief the bloodshed, bitter enmity and mistrust that have marked Anglo-Irish relations and cleaved the two nations all along. As a foil, her presence has been invested, not very surprising for Dublin, by a high degree of symbolism — some real, some exaggerated. The real: the queen’s laying of the

wreath at the Garden of Remembrance to honour the Irish patriots who fought against the British. The exaggerated: her green cloak to go with the Emerald Isle. The queen's visit is meant to symbolise more than anything else an acknowledgment that history should not be allowed to stand in the way of the future; that the two nations have come a long way since the Easter Rising and the Irish War of Independence and the many fraught years since. While Sinn Fein's black balloons, the largely deserted streets and the heavy security presence reminded that history could not be too easily wished away, the queen took the first step towards a new rapprochement between the old adversaries. A year ago, British Prime Minister David Cameron had already apologised for the Bloody Sunday of 1972. As Stephen said in Ulysses, "History is a nightmare from which I am trying to awake." That is quite like what the British and the Irish are trying to do.

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

- I. Relations between England and Ireland are cordial now.
- II. Both Irish and British have been making efforts to ease the tension between the two nations.
- III. The queen had chosen her attire to match Irish colours.

- | | |
|--------------|-----------------------|
| (a)) Only I | (b) II and III |
| (c) I and II | (d) None of the above |

44. How is the quote from Ulysses relevant to Britain and Ireland?

- | | |
|--|--|
| (a)) After years of conflict between Britain and Ireland, efforts are being made to resolve issues. | (b) After years of shared misfortune, Britain and Ireland are trying to make amends. |
| (c) Both Britain and Ireland have a tragic past that they are trying to recover from. | (d) Britain and Ireland have had bitter enmity and mistrust toward each other but that is now a thing of the past. |

Directions for questions 46 to 49 : The passage given below is followed by a set of four questions. Choose the most appropriate answer to each question.

But I wonder how much real attention Dickens's books will get. In America at least, he seems to be an author more known than read. (Find me someone who claims to have read "Martin Chuzzlewit" and I will show you a goddamned liar.) Yet even if you've read only one of his books, his stamp is such that it feels like you've read them all. The virtues that kept him famous, prosperous and never out of print—that he is easily grasped and eternally inventive in his visuals and jokes—have served to make him iconic. His

characters, of course, deserve most of the credit. They possess those funny allegorical names, behave just as fixedly, and get thrown into one melodramatic scene after another. But taken as a whole, those 989 characters make up an unforgettable universe of humanity matched only by Shakespeare, whom Dickens worshipped.

George Orwell, in his famous essay on Dickens, pegged the novelist as a cynic who was neither a radical nor an idle bourgeois, but a self-made mystery who unswervingly championed the underdog, typically the working poor. He went on to assert that Dickens's reticence to take a definitive position on class and rights carried over to his characters, who tend to feel unreal. While Orwell claimed he could conduct a conversation with a chap like Leopold Bloom, he held that he couldn't imagine one with any of the folks imagined by Dickens.

The Orwell essay is a long one and is interesting because there is a palpable tension between his obvious love for Dickens and his need to bring a clear, socialist critique to the table, if for no other reason than to prevent Dickens from being 'stolen' by others with their own specious agendas. For example, Orwell couldn't say enough about how amazing Dickens was in writing the way children think, but on the other hand it rankles him that Dickens never talks about actual work and what people do when they're not standing around in some literary scene.

But despite persistent and, to my mind, niggling quarrels that Orwell picks with Dickens, he couldn't bring himself to condemn him. He went on to concede that he couldn't imagine a day when he wouldn't be reminded of a particular Dickensian scene or moment. It is this aspect of Dickens, the sheer scope of the world he created and the widescreen variety of his novels, that is his true legacy. Yes, his novels are of a piece, but when you fit the jigsaw together it's a remarkable picture, whirling and alive. Its intricacies and moving parts far outweighing the surprise coincidences, occasional mawkishness and deus ex machina endings.

45. Which of these best expresses the central theme of the passage?

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|---|---|
| (a)) The passage explores why Dickens is an important author and will always be read | (b) The author wants to argue that despite some weaknesses Dickens as a writer is second only to Shakespeare. |
| (c) The passage captures the universal legacy of Dickens' writings. | (d) The passage captures the author's analysis of a George Orwell essay on Dickens |

46. All of the following are criticisms of Dickens' novels except :

- I. Dickens' novels feature characters that have funny allegorical names.
- II. Dickens is too sentimental at times.
- III. Dickens' characters' opinion on class and rights is not clear which makes them feel unreal.
- IV. Dickens' novels feature surprising coincidences.

(a) Only I

(b) I and III

(c) II and IV

(d) II, III and IV

47. According to author, what is the most important feature of Dickens' writings?

(a) The fact that his writing is easily understood by everybody.

(b) The whimsical characters that he created.

(c) The inventive visuals and jokes.

(d) The complete range and variety of his writings

48. Which of the following best describes the tone of the passage?

(a) Analytical

(b) Pedantic

(c) Descriptive

(d) Nostalgic

49. The word given below has been used in sentences in four different ways. Choose the option corresponding to the sentence in which the usage of the word is incorrect or inappropriate.

THROW

(a) When I bought my motorbike, they threw in free insurance

(b) He loves the new project and has thrown himself into it with great gusto

(c) Shah Rukh Khan has not been able to throw off the romantic hero image.

(d) We're not going to throw the towel just because we lost one game.

50. The word given below has been used in sentences in four different ways. Choose the option corresponding to the sentence in which the usage of the word is incorrect or inappropriate.

SIT

(a) My partner just sits and expects things to get done

(b) I was new to the job, so I sat in on the meetings to learn the procedures

(c) He had to sit out most of the matches due to injury

(d) He sat on many committees dealing with environmental issues.

51. Given below are a few sentences. Identify the sentence(s)/ part(s) of the sentence(s) that is/are correct in terms of grammar and usage (including spelling, punctuation and logical consistency). Then choose the most appropriate option.

(A) Many a men dated their ruin from some murder or other that perhaps they thought little of at the time.

(B) Afterwards, when fascinated by the man, as you will be, turn immediately to this excellent, detailed and often harrowing biography.

(C) After they had finished the meal they asked the waiter the bill.

(D) By the time she arrives, we will have finished our homework.

(a) A and B

(b) A and D

(c) B and D

(d) Only C

52. Given below are a few sentences. Identify the sentence(s)/ part(s) of the sentence(s) that is/are correct in terms of grammar and usage (including spelling, punctuation and logical consistency). Then choose the most appropriate option.

(A) Imagine a speck of dust close to a planet a billion times the size of earth. The speck of dust represents the odds in favour of your being born.

(B) The huge planet would be the odds against itself. So stop sweating the small stuff.

(C) Don't be like the ingrate who got a castle as a present and worried about the mildew in the bathroom.

(D) Stop looking at the gift horse in the mouth- remember that you are a Black Swan.

(a) A & B

(b) A & D

(c) C & D

(d) C

53. Given below are five sentences. Each sentence has a pair of words that are italicised. From the italicised words, select the most appropriate words (A or B) to form correct sentences. The sentences are followed by options that indicate the words, which may be selected to correctly complete the set of sentences. From the options given, choose the most appropriate one.

He showed us grisly (A)/grizzly (B) photos of the crime scene. Salman's last (A)/latest (B) movie which was released yesterday is a big hit. The trees cast a big shade (A)/shadow (B), so he sat under it. The vice-president must now take on the mantle (A)/mettle (B) of supreme power. The garden blazed (A)/braised(B) with colour

(a) AABAB

(b) BBBBA

(c) ABBAA

(d) BBAAB

54. Given below are five sentences. Each sentence has a pair of words that are italicised. From the italicised words, select the most appropriate words (A or B) to form correct sentences. The sentences are followed by options that indicate the words, which may be selected to correctly complete the set of sentences. From the options given, choose the most appropriate one.

haven't seen him for (A)/ since (B) over five years. The teacher asked us to use our fantasy (A)/ imagination (B) while writing essays. He should be arriving briefly (A)/ shortly (B). Unfortunately inflation is on the rise (A)/ raise (B) again. The opposition parties are making political capital (A) / capitol (B) out of the government's problems.

(a) ABABA

(b) ABBAA

(c) BBBAB

(d) AABAB

Answers

1. (d) Let the three roots of the equation be α , β and γ , Let us assume that $\alpha = -1/2 (\beta + \gamma)$
or $\beta + \gamma = -2\alpha$ From the given equation we have :

$$\alpha + \beta + \gamma = 7/a \quad \dots(i)$$

$$\alpha\beta\gamma = -231/a \quad \dots(ii)$$

Putting the value of $\beta + \gamma$ in equation (i), we get

$$-2\alpha + \alpha = 7/a \text{ or } \alpha = -7/a$$

Putting the value of α in equation (ii), we get $\beta\gamma (-7/a) = -231/a \Rightarrow \beta\gamma = 33$.

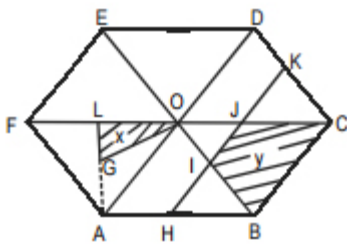
The possible sets of values of α , β and γ , are :

α	β/γ	γ/β
-17	1	33
-7	3	11
17	-1	-33
7	-3	-11

As $= -7/\alpha$, for different values of α , the possible values of 'a' are $-7/17$, $-7/7$, $7/17$ and $7/7$

Therequired sum $= 7((-1/17) + (-1/7) + 1/17 + 1/7) = 0$

2. (b)



Let the length of the side of the hexagon be a units $\therefore \triangle AFO$ and $\triangle BCO$ are equilateral triangles with the length of their side equal to a units and area (in sq. units) of each being $\frac{\sqrt{3}}{4} a^2$

In $\triangle AFO$, as G is the centroid and L is mid point of OF , AL is the median to the side OF .

Also, $AL = \frac{\sqrt{3}}{2} a$ units and $GL = \frac{\sqrt{3}}{6} a$ units (Centroid divides medians in the ratio 2:1)

Area of $\triangle GOL = \frac{1}{2} \times LG \times LO = \frac{1}{2} \times \frac{\sqrt{3}}{6} a \times \frac{a}{2} = \frac{\sqrt{3}}{24} a^2$ sq. units ... (i)

As H and K are the mid points of AB and CD respectively, HK is parallel to AD . Thus, HI is parallel to AO and OD is parallel to JK . Hence, I is the mid point of OB and J is the mid point of OC

$\therefore \triangle OIJ \sim \triangle OBC$

Area $\triangle OIJ$ / Area $\triangle OBC = IJ^2 / BC^2 = 1/4$

Area of quadrilateral $BCJI$

$= \frac{3}{2}$ area $\triangle OBC = \frac{\sqrt{3}}{4} a^2 \times \frac{3}{4}$ sq. units. ... (ii)

From (i) and (ii), required ratio = 2:9.

Alternate Method :

$\triangle AOF$ and $\triangle OBC$ are equilateral triangles with equal area (as length of the sides is the same for the two).

$$\text{Area GOL} = \frac{1}{2} \text{Area } \triangle FOG$$

$$= \frac{1}{2} \left(\frac{1}{3} \text{Area AOF} \right) = \frac{1}{6} \text{Area } \triangle AOF \quad \dots(i)$$

$$\text{Area of quadrilateral IJCB} = \frac{3}{4} \text{Area } \triangle OBC. \quad \dots(ii)$$

From (i) and (ii), required ratio = 2:9.

3. a

$$\begin{aligned} M &= \sqrt{3 - \sqrt{5} + \sqrt{9 - 4\sqrt{5}}} \\ &= \sqrt{3 - \sqrt{5} + \sqrt{((\sqrt{5})^2 - 2 \times 2 \times \sqrt{5} + 2^2)}} \\ &= \sqrt{3 - \sqrt{5} + \sqrt{(\sqrt{5} - 2)^2}} \\ &= \sqrt{3 - \sqrt{5} + \sqrt{5} - 2} = \sqrt{1} = 1 \\ N &= \sqrt{\sqrt{7} - 1 - \sqrt{11 - 4\sqrt{7}}} \\ &= \sqrt{\sqrt{7} - 1 - \sqrt{(\sqrt{7})^2 - (2 \times 2 \times \sqrt{7}) + (2)^2}} \\ &= \sqrt{\sqrt{7} - 1 - \sqrt{(\sqrt{7} - 2)^2}} \\ &= \sqrt{\sqrt{7} - 1 - \sqrt{7} + 2} = \sqrt{1} = 1 \end{aligned}$$

$$\text{Hence, } \frac{M - N}{M + N} = \frac{1 - 1}{1 + 1} = 0.$$

4. C

$$P + 1/Q = 1 \Rightarrow 1/P = 1/(1 - 1/Q) = Q/Q - 1 \quad \dots(i)$$

$$Q + 1/R = 1 \Rightarrow R = 1/1 - Q \quad \dots(ii)$$

From (i) and (ii), we get

$$R + 1/P = 1/1 - Q - Q/1 - Q = 1 \quad \dots(iii)$$

$$\text{Also, } PQR = (Q - 1/Q)Q(1/1 - Q) = -1 \quad \dots(iv)$$

From (iii) and (iv), we get

$$PQR + R + 1/P = 1 - 1 = 0$$

5. C

Cost per dozen chocolates = $YY/Y/12 = 12 Y/X$

Cost per dozen under the offer = $2/(X+10/12) = \text{Rs. } 24/x + 10$

Saving per dozen = $12y - 24/(x + 10) = 80/100$

$$\begin{aligned} \Rightarrow & \frac{12/y}{3y/x} - \frac{24/x+10}{6/x+10} = \frac{4/5}{1/5} \\ \Rightarrow & \frac{15y/x}{30/x+10} = 1 \end{aligned}$$

The equation is satisfied for $x = 5, y = 1$.

6. a

$$P(I) P(II) = 1/2$$

$$\therefore P(B \cap I) = P(I) - P(W \cap I)$$

$$\Rightarrow P(B \cap I) = 1/2 - 3/10 = 1/5 \quad \dots(i)$$

$$\text{Also, } P(B' | II) = P(B' \cap II)/P(II)$$

$$\Rightarrow P(B' \cap II) = 8/10 \times 1/2 = 2/5$$

$$P(B' \cap II) = P(W \cap II)$$

$$\Rightarrow P(W \cap II) = 2/5$$

$$\therefore P(W \cap II) = P(II) - P(W \cap II) = 1/2 - 2/5 = 1/10$$

$$\text{Now, } P(I | B) = P(I \cap B) / P(B)$$

As $P(B) = P(B \cap I) + P(B \cap II)$, therefore, from (i) and (ii)

$$P(B) = 1/5 + 1/10 = 3/10$$

$$\Rightarrow P(I | B) = 1/5 \div 3/10 = 2/3$$

7. a

The last two digits of such perfect squares could be either 00 or 44. Also, the largest five digit perfect square is $(316)^2$ i.e. 99856. So the number must be less than 316.

Case I : The perfect square ends with 00. Any multiple of 10 will always end up with two zeros. 100 would be the first such number and 310 the last. There are 22 such numbers.

Case II : The perfect square ends with 44. For the square of a number to end with 4, its unit digit must be either 2 or 8.

(i) Let the number be 'ab2', where 'a' and 'b' are the digits at hundreds and unit place respectively.

$$\begin{aligned}(ab2)^2 &= (ab \times 10 + 2)^2 \\ &= (a^2b^2 \times 100) + (4 \times ab \times 10) + 4\end{aligned}$$

The last digit will always be 4, but for the second last digit to be 4, ' $4 \times b$ ' must end with 4. Thus 'b' could be either 1 or 6. Possible numbers are 112, 162, 212, 262 and 312.

(ii) Let the number be 'ab8', where 'a' and 'b' are the digits at hundred and unit place respectively.

$$\begin{aligned}(ab8)^2 &= (ab \times 10 + 8)^2 \\ &= (a^2b^2 \times 100) + (16 \times ab \times 10) + 64\end{aligned}$$

The last digit will always be 4, but for the second last digit to be 4, ' $6 \times b + 6$ ' must end with 4. Thus 'b' could be either 3 or 8. Possible numbers are 138, 188, 238 and 288. Total possible numbers = $22 + 5 + 4 = 31$.

Alternate Method : The last two digits of such perfect squares could be either 00 or 44. Perfect squares ending with 00 are always of the form $N^2 \times 10^2$, where N is a natural number. Total such numbers would be 22 i.e. 10000 to 96100.

Perfect squares ending with 44 are the squares of numbers of the form $50k \pm 12$, where k is whole number

Total such numbers would be 9 i.e. 112^2 , 138^2 , 162^2 , 188^2 , 212^2 , 238^2 , 262^2 , 288^2 and 312^2 . Total possible numbers = $22 + 9 = 31$.

8. b

We have to calculate the number of zeroes starting from the right end of the number N. The number of zeroes from :

$$1! \text{ to } 4! = 0$$

$$5! \text{ to } 9! = 1 \times 5 = 5$$

$$10! \text{ to } 14! = 2 \times 5 = 10$$

$$15! \text{ to } 19! = 3 \times 5 = 15$$

$$20! \text{ to } 24! = 4 \times 5 = 20$$

$$25! \text{ to } 29! = 6 \times 5 = 30$$

$$30! \text{ to } 34! = 7 \times 5 = 35$$

$$35! \text{ to } 39! = 8 \times 5 = 40$$

So we get 155 zeroes till 39! only. From this we can easily conclude that the 147th digit from the right end of N will be zero.

9. a

Assume that $a \leq b \leq c$.

$$\text{So } \frac{a}{b+c} + \frac{b}{a+c} + \frac{c}{a+b} \geq \frac{a}{a+c} + \frac{b}{a+b} + \frac{c}{b+c}, \text{ and}$$

$$\frac{a}{b+c} + \frac{b}{a+c} + \frac{c}{a+b} \geq \frac{a}{a+b} + \frac{b}{b+c} + \frac{c}{c+a}.$$

Adding these two inequalities and dividing the resultant by 2, we get

$$\frac{a}{b+c} + \frac{b}{c+a} + \frac{c}{a+b} \geq \frac{3}{2}$$

$$s = \frac{a+b+c}{2}, \text{ where } s \text{ is the semiperimeter of triangle.}$$

$$a+b > c \text{ and } a+b > s.$$

$$\Rightarrow \frac{c}{a+b} < \frac{c}{s}, \frac{a}{b+c} < \frac{a}{s} \text{ and } \frac{b}{a+c} < \frac{b}{s}$$

$$\text{But } \frac{a}{s} + \frac{b}{s} + \frac{c}{s} = \frac{a+b+c}{s} = 2.$$

$$\text{Hence } \frac{a}{b+c} + \frac{b}{c+a} + \frac{c}{a+b} < 2.$$

10. d

A covers 10 km in the first hour while B covers 20 km. As a result the distance between them increases by 10 km. A covers 10 km in the next hour while B covers -10 km. As a result the distance between them decreases by 20 km. In the first two hours the distance between A and B decreases by 10 km. The time taken by A and B to meet for the first time = $x = 100/10 \times 2 = 20$ hours

11. b

It is given that $a^{a^b} = b$

Putting the value of b in left-hand side, we get

$$a^{a^{a^b}} = b$$

On repeating the same step n times, we get

$$a^{a^{a^{\dots^b}}} = b$$

When n tends to infinity, we get

$$a^{a^{a^{\dots^b}}} = a^b = b$$

Hence $a^b - b = 0$.

Alternate Method :

$$a^2 = 2, \text{ then } a = \sqrt{2}$$

$$a^{a^2} = 2, \text{ then } a = \sqrt[2]{2}$$

Similarly, if $a^{a^b} = b$, then $a = \sqrt[b]{b} = b^{\frac{1}{b}}$

Hence, $a^b - b = 0$.

12. d

$$y_1 = (x - 1)/(x + 1)$$

$$y_2 = f(y_1) = -1/x$$

$$y_3 = f(y_2) = (x + 1)/(x - 1)$$

$$y_4 = f(y_3) = x$$

$$y_5 = f(y_4) = (x - 1)/(x + 1)$$

It can be concluded that the given function has the cyclicity of 4 or $y_n = y_{n+4k}$ where k is a whole number

$$\text{Hence, } y_{501} = y_1 = (x - 1)/(x + 1)$$

13. b

Solving the two linear equations $3x + 4y - 11 = 0$ and $x + y - 3 = 0$, we get $x = 1$ and $y = 2$.

Hence, the two lines intersect at the point $(1, 2)$.

Any line which is parallel to $2x + 5y = 0$ should be of the form $2x + 5y - k = 0$... (i)

where k is a real number.

Putting $x = 1$ and $y = 2$ in (i), we get $k = 12$

Hence, the equation of the straight line will be $2x + 5y - 12 = 0$.

14. c

$$\log_2 (a + b) + \log_2 (a - b) = 3$$

$$\Rightarrow \log_2 (a + b)(a - b) = 3$$

$$\Rightarrow \log_2 (a^2 - b^2) = \log_2 2^3$$

$$\Rightarrow a^2 - b^2 = 8$$

Solving the above equation for integer values of a and b , we get $(a, b) \equiv (3, 1)$ or $(3, -1)$.

Note: ' $a - b$ ' must be greater than zero

15. a

Let the radius of the cross section of the pipe be r . Speed (v) at which water flows

$$= 54 \text{ km/hr} = 54000 \text{ m/hr}$$

Rate of water flow = (Cross-sectional area of the pipe) $\times v$

$$\therefore \pi r^2 \times 54 \times 10^3 \times 14 = 80/100 \times 118800$$

$$\Rightarrow r = 2/10 \text{ m} = 20 \text{ m}$$

16. c

There are 8 smaller cubes (on the corners) which have exactly three sides painted. There are 7×12 i.e. 84 smaller cubes (on the edges) which have exactly two sides painted. There

are $7 \times 7 \times 6$ i.e. 294 smaller cubes (on the faces) which have exactly one side painted. The total number of smaller cubes with at least one side painted = $8 + 84 + 294 = 386$ So the total number of smaller cubes with none of the sides painted = $729 - 386 = 343$.

Alternate Method :

Each edge of the larger cube is made of 9 smaller cubes. It can be observed that there is another cube whose edge is made of 7 smaller cubes which lies inside this larger cube, such that none of the cubes in it makes to the surface of the larger cube (and didn't get painted as a result). The total number of smaller cubes in this cube = $7^3 = 343$

17. b

Both Oil Trade Balance and Total Trade Balance decreased from 1990-91 to 2000-01. The increase in Oil Imports from 1990-91 to 2000-01 was more as compared to the increase in Oil Exports from 2000-01 to 2010-11.

18. d

Non-Oil Exports increased by approximately 273% from 2000-01 to 2010-11.

Total Exports increased by approximately 377% from 1990-91 to 2000-01.

Oil Imports increased by 175% from 1980-81 to 1990-91.

Total Imports increased by approximately 55% from 2000-01 to 2010-11.

19. c

The total number of employees who were appraised in January was $71 + 67 + 97$ i.e. 235. These were the employees who were appraised on at least one performance area.

The total number of employees who were appraised in July was $30 + 22 + 29$ i.e. 81. These were the employees who were appraised on at least two performance areas.

The number of employees who were appraised on exactly one performance area is $235 - 81$ i.e. 154.

20. a

The number of employees who were not appraised on Individual Performance in January was $67 + 97$ i.e. 164. The employees who were appraised on Individual Performance in July and November were among these 164 employees only. So the number of employees who were not appraised on Individual Performance in 2010 was $164 - (30 + 9) = 125$.

21. c

Let the number of shares sold by Sajid and Hasan on Day 1 be $36x$ each.

Investment made by Sajid

$$= 375 \times 18x + 250 \times 18x = \text{Rs. } 11,250x. \text{ Profit made by Sajid}$$

$$= 750 \times 18x + 625 \times 18x - 375 \times 18x - 250 \times 18x = \text{Rs. } 13,500x$$

Sajid's Margin on Day 1 $\approx 54.5\%$.

Investment made by Hasan

$$= 225 \times 36x = \text{Rs. } 8,100x.$$

Profit made by Hasan

$$= 375 \times 16x + 300 \times 20x - 225 \times 36x = \text{Rs. } 3,900x.$$

Hasan's Margin on Day 1 = 32.5%

22. b

For Hasan :

As the share price at 11:00 a.m. and 12:00 noon was Rs. 500 and Rs. 400 respectively, the number of shares sold by Hasan at 11:00 a.m. and 12:00 noon must be in the ratio 4 : 5 respectively. Let the number of shares sold by Hasan at 11:00 a.m. and 12:00 noon be $4x$ and $5x$ respectively.

$$\text{Total sales amount} = 500 \times 4x + 400 \times 5x = \text{Rs. } 4,000x$$

$$\text{Total investment in purchase} = 750 \times 9x = \text{Rs. } 6,750x$$

$$\text{Margin (loss)} = (6750 - 4000)/4000 = 68.75\%$$

For Sajid :

Let the total number of shares sold by Sajid at 9 a.m. and 10 a.m. be $2y$.

Total sales amount = $200 \times y + 300 \times y = \text{Rs. } 500y$

Total investment in purchase = $500 \times y + 625y = \text{Rs. } 1,125y$

Margin (loss) = $(1125-500)/500 = 125\%$

Required ratio = $68.75 : 125 = 11 : 20$

23. d

The Energy Consumption of a department can be obtained by dividing the Total Revenue of that department by the Average Revenue per Unit Energy Consumed by that department. Among the five companies, the Energy Consumption is the highest for Perfetti VM at approximately 1900W-hrs.

24.d

There are six departments in all whose Energy Consumption is less than 100W-hrs. They include two departments of UB Group, one of Unilever and three of Wipro.

25. b

Unilever has two departments whose Total Revenue is more than Rs. 600 crores and Energy Consumption is less than 200W-hrs. The only other department that satisfies the given criteria is of ITC Ltd.

26. c

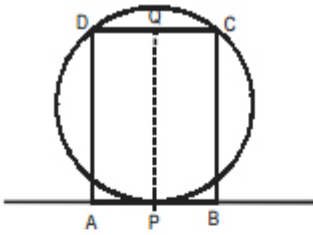
$$abc \times 1.33 = \frac{4}{3} abc = cab \quad \dots(i)$$

$$cab \times 1.33 = \frac{4}{3} cab = \frac{16}{9} abc = bca \quad \dots(ii)$$

From equation (ii), we can conclude that the resultant number is a multiple of 16 and the initial number is a multiple of 9. Hence, we can say that the resultant number should be a multiple of 16 as well as 9 i.e. a multiple of 144.

There are two multiples of 144 which satisfy the condition i.e. 432 and 864. Thus the number 'abc' could be either 243 or 486.

27. a



AP must be equal to PB.

Let's assume that the line segment PQ divides the rectangle ABCD into two equal parts (see the figure).

Let $AB = 2a$; hence, $BC = 4a$ (all lengths in cm).

$$CP = \sqrt{(4a)^2 + a^2} = \sqrt{17}a = DP$$

$$\text{Area of } \triangle CDP = \frac{1}{2}PQ \cdot CD = 4a^2$$

Radius of the circle = Circumradius of $\triangle CDP$

$$= \frac{CD \times CP \times DP}{4(\text{Area of } \triangle CDP)} = \frac{17}{8}a = 1.$$

$$\text{Hence, } a = \frac{8}{17} \text{ cm}$$

$$\begin{aligned} \text{Area of rectangle ABCD} &= 2a \times 4a = 8a^2 \\ &= 1.77 \text{ cm}^2 \text{ approximately.} \end{aligned}$$

28. d

(i) Let the box with the smallest number of balls does not contain any ball. Then 18 balls can go into 2 identical boxes in 10 ways (0, 18), (1, 17).... (9, 9).

(ii) Let the box with the smallest number of balls contains 1 ball. Then 17 balls can go into 2 identical boxes in 8 ways (1, 16), (2, 15).... (8, 9).

(iii) Let the box with the smallest number of balls contains 2 balls. Then 16 balls can go into 2 identical boxes in 7 ways (2, 14), (3, 13).... (8, 8).

(iv) Let the box with the smallest number of balls contains 3 balls. Then 15 balls can go into 2 identical boxes in 5 ways (3, 12), (4, 11).... (7, 8).

(v) Let the box with the smallest number of balls contains 4 balls. Then 14 balls can go into 2 identical boxes in 4 ways (4, 10), (5, 9).... (7, 7).

(vi) Let the box with the smallest number of balls contains 5 balls. Then 13 balls can go into 2 identical boxes in 2 ways (5, 8) and (6, 7).

(vii) Let the box with the smallest number of balls contains 6 balls. Then 12 balls can go into 2 identical boxes in just 1 way (6, 6).

The number of possible ways = $10 + 8 + 7 + 5 + 4 + 2 + 1 = 37$

Alternate Method :

Case I :

All the boxes contain an equal number of balls. There is only one possible case i.e. 6, 6 and 6.

Case II :

Exactly two boxes contain an equal number of balls. There are 9 possible cases i.e. (0, 0, 18), (1, 1, 16), (2, 2, 14), (3, 3, 12), (4, 4, 10), (5, 5, 8), (7, 7, 4), (8, 8, 2) and (9, 9, 0).

For each of these cases 3 combinations were possible had the boxes been non-identical.

Case III :

Each box contains a different number of balls. Let the number of cases be x

For each of these cases 6 combinations were possible had the boxes been non-identical.

$$\therefore 1 + 9 \times 3 + 6x = {}^{18+3-1}C_{3-1}$$

$$\Rightarrow 28 + 6x = (20 \times 19)/2 = 190$$

$$\Rightarrow x = 27$$

So the required number of ways = $27 + 9 + 1 = 37$

29. d

Volume of water in the 40 ml taken from the first alcohol-water mixture = $(y/100 + y) \times 40\text{ml}$

Volume of water in the 2y ml taken from the second alcohol-water mixture

$$= (1 - 0.26) \times 2y = 1.48y \text{ ml.}$$

Total volume of the two mixtures taken = $(40 + 2y) \text{ ml.}$

$$\text{Hence, } (y/100) \times 40 + 1.48 y/40 + 2y = 2y/100$$

Solving the above equation for y , we get $y = 25$ or -108 (which is rejected)

Note: Instead of solving for y , the value can also be obtained by simply substituting the options in the last equation.

30. b

$$\text{Difference} = 3 - 2 = 1$$

31. a

Eric lives on floor 6

32. c

Jimmy lives alone on floor 1. The rest 9 people live on floors higher than his.

33. c

The paragraph discusses differences between idealists and realists. The next sentence should be option (c) as it brings out this difference. The paragraph ends with 'The idealist... thinks that all this is so much the better.' Option (c) features a similar construction- 'The realist... thinks it so much the worse.'

34. c

The deleted sentence is a part of Dell's statement. Dell says we are no longer afraid of monsters and trolls but continue to be fascinated by them. (c) is the logical continuation as it tells us why we are not afraid of them but still fascinated by them.

35. d

Only (d) gives a sensible reason for the review bringing more than just a thumbs up or thumbs down— the review would likely settle an important question on the scope of government regulation. Since the "Justices review" is being discussed , only (d) can be the logical continuation .

36. c

The sequence should start with sentence C as it introduces a topic – the repercussions of the art-market boom. C is followed by E (as there is a reference in the plural) and both sentences are linked with the reference to museums. E also is an elaboration of the point being made in sentence C. D and A are clearly linked through the reference to the annual booklet. B comes in as the ending sentence as it mentions the consequence of the weakening in the buying power of museums. The correct sequence is CEDAB, option (c).

37. c

Option (d) is incorrect because 'the quest of conditions being the psychologist's most interesting task' is the opinion of the author and not of psychologists. The passage does not state/imply the opinion of the psychologists, it talks about the opinion of the author only. Option (c) is correct as it can be inferred from the last line of the passage.

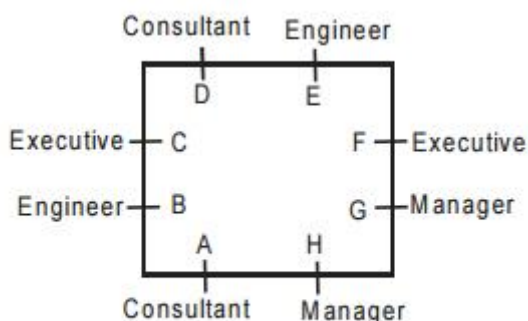
38. c

From (iii), as Shama and Hema are in the same car, Radha must be in a different car. From (v), either Divya or Charu must be in the same car as Radha and the other must be in the same car as Kiran. As Vicky cannot be in the same car as Hema, Kiran or Charu, he must be in the same car as Radha and Divya. From (i), Hari and Naresh are in the same car with Shama and Hema. Further analysis leads to the following table :

Case I	Case II
Car I:	Car I:
Radha-Pankaj	Radha-Vicky
Divya-Vicky	Divya-Pankaj
Car II:	Car II:
Shama-Hari	Shama-Hari
Hema-Naresh	Hema-Naresh
Car III:	Car III:
Charu-Kartik	Charu-Kartik
Kiran-Chetan	Kiran-Chetan

39. d

Let Anu, Bindu, Candy, Dolly, Emran, Fiza, Gauri and Hemant be represented by A, B, C, D, E, F, G and H respectively. The only possible arrangement is shown below.



Hence, none of the statements is false.

40. d

Throughout the passage the author has argued that the banks and the financial sector had an important role in causing the Great Recession. Bernie Madoff is guilty but he is hardly the only person who deserves to go to prison. Refer to the lines "Just because Madoff is a crook sitting in jail does not mean he isn't right when he tells us to look elsewhere, too." Option (a) cannot be the answer as it cannot be the insight given by Madoff. Also, option (a) is contradictory to the author's opinion—"It is the classic "one bad apple" defence of the kind banks and Wall Street specialise in. It is not the system's or the bosses' fault, they say, it is just a few rogue operators and they have been dealt with...". Option (b) states that the recession was caused by the failure of banking organizations , which is incorrect. The

option does not state what exactly this failure was. Option (c) is not the answer as the author merely mentions the venality of the finance industry. He/she does not attribute the Recession to it.

41. b

The answer can be inferred from the lines “Madoff and his scheme have become a useful foil for the entire finance industry... It’s Madoff who spurs public outrage and whose jailing has satiated a quest for justice”. The author says that it is Madoff who is ultimately cast as the villain and the cause of the recession by the entire finance industry. Option (b) comes closest to expressing this. Option (a) is incorrect as it does not specifically discuss discusses the role of banking industry in causing recession .

42. b

The central idea of the passage is how Bernie Madoff is not the only person responsible for the recession. The author argues that we need to consider the role of the entire financial sector also. Hence, option (b) works best. Options (a) is contradictory to the ideas presented in the passage. Option (d) is incorrect as the author does not discuss ‘how’ the financial sector contributed to the Recession. He/she only states that it played a part. Option (c) is incorrect as it stresses how Madoff was responsible for the recession .

43. d

None of the statements can be inferred from the passage. (I) cannot be inferred; refer to the lines “While Sinn Fein’s black balloons, the largely deserted streets and the heavy security presence reminded that history could not be too easily wished away”. They seem to suggest that there is still some tension between the two countries. (II) can be inferred from the passage. (III) also cannot be inferred as the author writes, “The exaggerated: her green cloak to go with the Emerald Isle” The author says that looking for symbolism in the queen’s choice of a cloak is an exaggeration.

44. a

Option (a) best expresses how Britain and Ireland are trying to make things right. We cannot assume that everything has been resolved because there is evidence in the passage against this. Therefore, option (d) can be eliminated. Options (b) and (c) (shared misfortune and tragic past) are too broad in scope and can be construed to mean anything.

45. c

The major part of the passage discusses Orwell’s essay on Dickens. Option (d) is inappropriate because Orwell’s opinion of Dickens is discussed only in the context of the

essay that he (Orwell) wrote. This essay has been used as an example to illustrate author's view. Throughout the passage author has tried to show why, despite criticism, Dickens' writings have had a universal appeal.

46. a

All except (I) are mentioned as criticisms of Dickens' writings. (II) and (IV) can be found in the lines "...far outweighing the surprise coincidences, occasional mawkishness and deus ex machina endings." (III) is one of the criticisms that Orwell levels at Dickens. " ... Dickens's reticence to take a definitive position on class and rights carried over to his characters, who tend to feel unreal."

47. d

The answer can be found in the last paragraph "... the sheer scope of the world he created and the wide screen variety of his novels, that is his true legacy."

48. a

The tone of the passage can be best described as analytical. The author does not merely describe the features of Dickens's writings. He goes on to analyse the various aspects of his writing. The author uses Orwell's essays to dissect the writings of Charles Dickens.

49. d

(a) is correct. To 'throw in' means to add to something.

(b) is correct. To 'throw oneself into something' means to do something with great enthusiasm.

(c) is correct. To 'throw off' means to free yourself from something.

(d) is incorrect. The correct expression is "throw in the towel" which means to stop trying.

50. a

(a) is incorrect. The correct expression is 'sit back' - to sit back means to wait for something to happen while deliberately not being involved. (b) is correct. To 'sit in on something' means to be present during a meeting but not participate. (c) is correct. To 'sit out' means to wait for something to finish. (d) is correct. To 'sit on' means to be on a committee or panel (to be a member). Radhika has sat on the finance committee from the beginning.

51. c

B and D

'A' is incorrect . The correct statement should be "Many a men dated their ruin from some murder or other that perhaps they thought little of at that time." 'C' is incorrect. The correct statement should be "After they had finished the meal they asked the waiter for the bill."

52. d

B and D are correct.

(A) is incorrect. The correct expression is 'Imagine a speck of dust close to a planet a billion times the size of the earth' or alternatively, 'Imagine a speck of dust close to a planet a billion times the size of Earth.' (B) is incorrect. The correct expression is 'the huge planet would be the odds against it (i.e. the odds against your being born). (D) is incorrect. The correct expression is 'stop looking a gift horse in the mouth' which means questioning the value of something you have received for free (You look a gift horse in the mouth when you receive a gift and then you question the value of that gift).

53. c

ABBA

Grisly means gruesome while grizzly is a type of bear. Latest which means most recent suits the context of the sentence. When used as a noun, shade is relative darkness; shadow is what causes the darkness. A tree casts a shadow which causes shade. Mantle means the role and responsibilities of an important person or job, especially when they are passed on from one person to another. Mettle means the ability and determination to do something successfully despite difficult conditions. Blaze means to shine brightly whereas braise means to cook meat or vegetables very slowly with a little liquid in a closed container.

54. b

ABBA

For is used to describe period of time of an action while since denotes the starting time of an action. The word we want here is 'for'. Fantasy means extravagant and unrestrained imagination. The word we want here is 'imagination'. Briefly means for a short time, whereas shortly means soon. Hence, 'shortly' is the word to be used here. Rise / raise- both the words can mean 'to move upwards', but they are not interchangeable. Rise is an intransitive verb and raise is a transitive verb. Raise requires an object to cause the motion. 'Rise' is the word to be used here. Capital means an advantage or a gain whereas capitol means a building in which the state legislature body meets. So, 'capital' is correct in the given context.