

INSTRUCTIONS

1. Read the instructions given at the beginning/end of each section or at the beginning of a group of questions very carefully.
 2. This test has two sections with 60 questions – 30 questions in each section. The TOTAL TIME available for the paper is **140 minutes**. The time available for each section is 70 minutes and you cannot return to the first section once you have started the second section.
 3. You are expected to show your competence in both the sections.
 4. All questions carry three marks each. Each wrong answer will attract a penalty of one mark.

SECTION – I

DIRECTIONS for questions 1 to 4: Answer the questions independently of each other.

1. At a certain instance, the minute-hand of a clock is 90° behind the hour-hand, when considered in the clockwise direction. After how much time will the minute-hand be 180° ahead of the hour-hand for the first time?

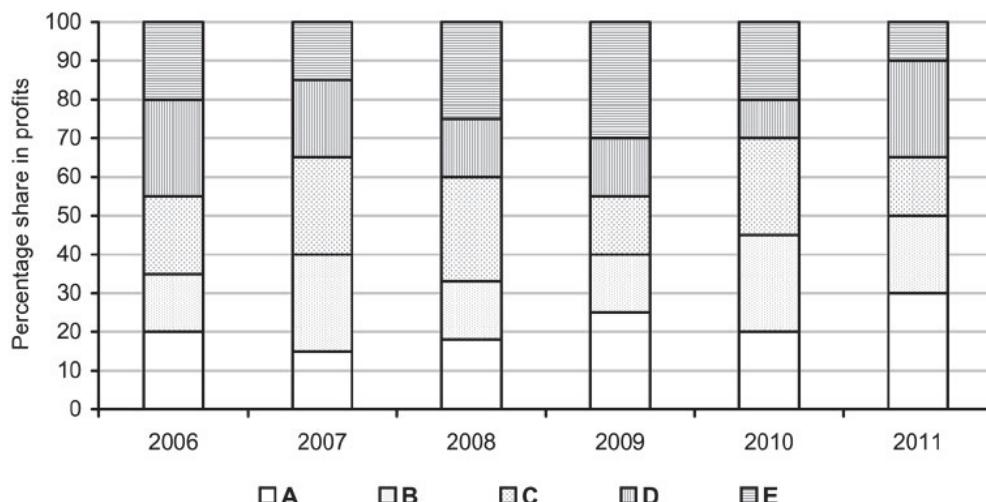
(A) $56\frac{4}{11}$ minutes (B) $23\frac{8}{11}$ minutes
(C) $49\frac{1}{11}$ minutes (D) $32\frac{4}{11}$ minutes

2. A shopkeeper sells pencils, erasers and sharpeners in three types of packs – Type 1, Type 2 and Type 3. Each pack of Type 1 contains three pencils, four erasers and six sharpeners. Each pack of Type 2 contains five pencils, two erasers and three

sharpeners. Each pack of Type 3 contains four pencils, three erasers and five sharpeners. If a person wants to buy exactly 55 pencils, 50 erasers and 75 sharpeners, how many packs of Type 3 must he buy?

DIRECTIONS for questions 5 to 7: Answer the questions on the basis of the information given below.

The following diagram gives the share of five companies in the overall profits of a specific industry for the years 2006 to 2011.



The profitability of each of the five companies during the given period is provided by the following table.

Profitability		2006	2007	2008	2009	2010	2011
Company	Year						
A	2006	8%	12%	35%	25%	12%	30%
B	2007	15%	15%	10%	12%	35%	18%
C	2008	22%	15%	25%	42%	19%	35%
D	2009	23%	3%	26%	30%	20%	65%
E	2010	15%	25%	30%	10%	42%	20%

$$\text{Profitability} = \frac{\text{Profit}}{\text{Sales}} \times 100$$

$$\text{Profit} = \text{Sales} - \text{Cost of Sales}$$

5. In the year 2007, which of the following companies had the highest sales?
 (A) A (B) C (C) D (D) E
6. In how many of the given years are the sales of company B more than that of company C?
 (A) 3 (B) 4 (C) 5 (D) 6
7. The ratio of the cost of sales of company A in 2006 to the sales of company B in 2008 is
 (A) 23 : 25
 (B) 23 : 15
 (C) 18 : 23
 (D) Cannot be determined

DIRECTIONS for questions 8 to 14: Answer the questions independently of each other.

8. Bag A contains four red and three black balls and bag B contains three red and four black balls. One ball is drawn at random from A and placed in B. Then, one ball is drawn at random from B and placed in A. What is the probability that the composition of the balls in the two bags remains unaltered?
 (A) $\frac{29}{56}$ (B) $\frac{15}{28}$ (C) $\frac{31}{56}$ (D) $\frac{33}{56}$
9. In a triangle ABC, let AD, BE and CF be the medians to BC, CA and AB respectively and let G be the point of intersection of the medians. If the quadrilaterals AFGE, BFGD and CDGE are represented as Q_1 , Q_2 and Q_3 respectively, then which of the following statements is/are true?
 I. If Q_3 is concyclic, then $AE = \sqrt{3} GD$.
 II. If Q_1 , Q_2 and Q_3 are all concyclic, then triangle ABC is right-angled.
 III. If Q_1 , Q_2 and Q_3 are all concyclic, then triangle ABC is equilateral.
 (A) I and II only (B) I and III only
 (C) Only III (D) Only I

DIRECTIONS for questions 15 to 17: Answer the questions on the basis of the information given below.

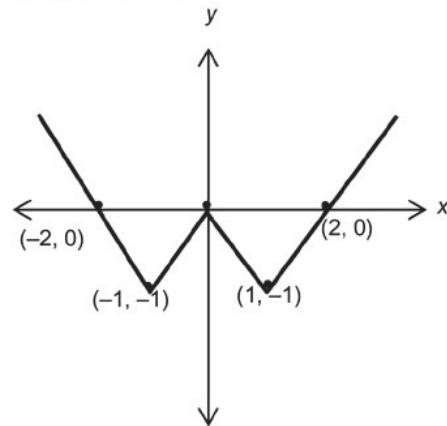
The following table gives the cumulative runs scored by eight batsmen in a series of five matches. In each of the matches, the batsman who scored the highest runs among the given eight batsmen was chosen as the "Man of the Match". No batsman scored more than 200 runs in any match and no batsman won more than one "Man of the Match" award. Also, in any match, not more than one batsman won the "Man of the Match" award.

Triumphant Institute of Management Education Pvt. Ltd. (T.I.M.E.) HO: 95B, 2nd Floor, Siddamsetty Complex, Secunderabad – 500 003.

Tel : 040–27898195 Fax : 040–27847334 email : info@time4education.com website : www.time4education.com

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10. Which of the following functions best describes the graph given below?



- (A) $y = ||x| + 1| - 2$ (B) $y = ||x| + 1| - 1$
 (C) $y = ||x| - 1| - 1$ (D) $y = ||x| - 1| - 1|$

11. Don entered a club to play a game, the rules of which are as follows:

- (1) A fee of ₹140 is to be paid by the player to play each game.
- (2) If the player wins a game, he is paid ₹220 and if he loses, he gets nothing.
- (3) No game ends in a draw.

If Don played a total of more than 305 but less than 314 games and won a net of ₹600, how many games did he lose?

- (A) 90
 (B) 108
 (C) 110
 (D) Cannot be determined

12. In triangle PQR, S is a point on QR such that PS bisects $\angle QPR$. If $\angle QPR = 45^\circ$ and $\frac{QS}{SR} = \sqrt{2}$, find $\angle PQR + \angle PSR$.

- (A) 125°
 (B) $112\frac{1}{2}^\circ$
 (C) 135°
 (D) Cannot be determined

13. If the sum of the 6th powers of the roots of the quadratic equation $x^2 - x - a = 0$ is 19721 and the sum of the 4th powers of the roots is 881, find the sum of the 7th powers of the roots.

- (A) 60,740 (B) 64,720
 (C) 61,741 (D) 62,826

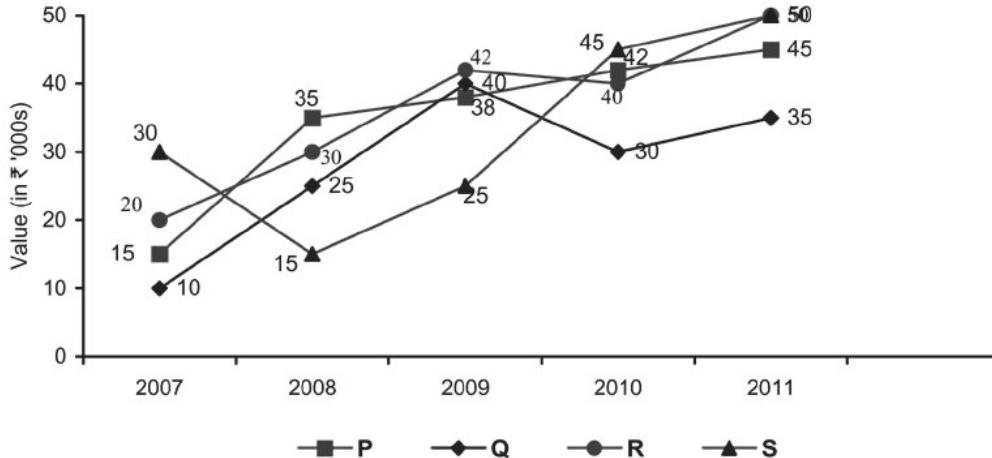
14. Eight identical balls are to be placed in three different boxes. If each box can hold any number of balls, then in how many ways can the balls be placed in the boxes so that no box remains empty?

- (A) 21 (B) 35 (C) 56 (D) 42

Batsman \ Match	Yuvraj	Sehwag	Kohli	Dhoni	Clarke	Warner	Cowan	Haddin
1	46		38		64		39	
2		28		124		60		
3	98	86	96				268	56
4			256					
5	436	195	368	180	124	161	358	84

DIRECTIONS for questions 22 to 24: Answer the questions on the basis of the information given below.

The line diagram below gives the value of the shares of four different companies – P, Q, R and S – held by Mr. Amit as on 1st January, (opening price of each year) for each of the years from 2007 to 2011.



Mr. Amit purchased all the shares on 1st January 2007 and he neither purchased nor sold any shares thereafter.

22. From 2008 to 2011, in how many years did the shares of all the four companies register an increase in price per share, when compared to the previous year?
 (A) 1 (B) 2 (C) 3 (D) 4
23. Which company showed the highest percentage increase in its price per share during the first three years starting from 1/1/2007?
 (A) Q (B) S (C) R (D) P
24. If the price of each share of companies P and Q are in the ratio of 5 : 7 on 1st January 2008, then find the ratio of the price of each share of P and Q as on 1st January 2011.
 (A) 225 : 343 (B) 25 : 49
 (C) 4 : 7 (D) None of these

DIRECTIONS for questions 25 to 30: Answer the questions independently of each other.

25. An ex-circle of a given triangle is drawn outside the triangle, tangent to one of the sides of the triangle, such that the other two sides, when extended, are also tangent to it. An equilateral triangle of side a is taken and all its three possible ex-circles are drawn. A circle C is then drawn, passing through the centres of all the three ex-circles. If the area of circle C is 9π sq.units, what is the value of a (in units)?

$$(A) 2\sqrt{3} \quad (B) \frac{3\sqrt{3}}{2} \quad (C) \frac{\sqrt{3}}{2} \quad (D) \frac{\sqrt{3}}{4}$$

26. From five positive integers, every possible combination of three numbers is selected and the total of the three numbers is found. If the ten possible sums are 30, 33, 34, 35, 36, 37, 38, 40, 41

and 42, find the sum of the least and the greatest of the five numbers.

- (A) 25
 (B) 26
 (C) 27
 (D) Cannot be determined

27. What is the maximum possible sum of the digits of a two-digit number, for which the square of the sum of the digits equals the difference of the squares of the individual digits?

- (A) 11 (B) 10 (C) 9 (D) 7

28. How many roots (real/complex or repeated/distinct) does the equation

$$(x^2 - 1)(x^{n-1} + x^{n-2} + x^{n-3} + \dots + 1)^2 = 7$$

- (A) $4n - 4$ (B) $2n$
 (C) $2n - 2$ (D) $2n - 1$

29. Consider the following relations, R and S, defined on the set $A = \{1, 2, 3\}$:

$$R = \{(1, 1), (1, 3), (2, 2), (3, 1), (3, 3)\}$$

$$S = \{(1, 1), (1, 2), (2, 2), (2, 1), (2, 3), (3, 2), (3, 3)\}$$

Which of the following statements is/are true?

- (A) Both R and S are equivalence relations
 (B) $R \cap S$ is an equivalence relation.
 (C) $R \cup S$ is an equivalence relation.
 (D) Both (B) and (C).

30. The lengths of the sides of a triangle are 11 cm, 14 cm and 19 cm. If each side of the triangle is increased by 20%, then what is the percentage increase in the product of the circumradius and the inradius of the triangle?

- (A) 21% (B) 20%
 (C) 44% (D) None of these

SECTION – II

Number of Questions = 30

DIRECTIONS for questions 1 and 2: In the following questions, the word in capitals is used in four different ways. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE.

1. LIGHT

- (A) He is regarded as one of the leading lights of Sanskrit theatre.
 (B) The top management acted according to their own lights and seldom took the employees into confidence.
 (C) Misfortune lighted at him and he lost crores of rupees in the deal due to the short-sightedness of his advisors.
 (D) Though her father was initially against her joining a business school in another city, he finally saw the light.

2. FLAG

- (A) Her financial situation is growing worse, but she's not ready to strike the flag.
 (B) Public enthusiasm flagged off when the Indian cricket team kept losing.
 (C) Inspite of the late hour, we managed to flag down a passing van.
 (D) Multicoloured flags lined the path to the house.

DIRECTIONS for question 3: In the question, there are five sentences or parts of sentences that form a paragraph. Identify the sentence(s) or part(s) of sentence(s) that is/are correct in terms of grammar, and usage (including spelling, punctuation and logical consistency). Then, choose the most appropriate option.

3. (a) India's telecom scandal has been rumbling from 2008,
 (b) when 122 mobile licences, covering a third of India's 2G spectrum, was awarded to eight companies.
 (c) A constant drip in disclosures since then has numbed public outrage.
 (d) But, on the 2nd February, India's Supreme Court cancelled all 122 licences.
 (e) Its 94-page ruling is essential reading for anyone interested in doing business with India.
 (A) b, d and e (B) a and c
 (C) d and e (D) c, d and e

DIRECTIONS for question 4: There are two blanks in the following sentence. From the pairs of words given below, choose the pair that fills the blanks most appropriately.

4. Oliver Sacks has a talent for testing the untestable, for taking seemingly _____ notions and using them to nail down the slippery stuff of

- consciousness; *Awakenings* reads like a series of fascinating _____ offering plenty of pauses for self-reflection.
- euphemistic . . . provocations
 - insidious . . . chronicles
 - aphoristic . . . factoids
 - sophomoric . . . vignettes

DIRECTIONS for question 5: The question has a set of five sequentially ordered statements. Classify the statements into Facts, Inferences and Judgements based on the following criteria and then choose the most appropriate option.

- Facts, which deal with pieces of information that one has seen, heard or read; which are known matters of direct observation or existing reality; which are open to discovery or verification (the answer option indicates such a statement with an 'F')
- Inferences, which are logical conclusions or deductions drawn about the unknown, on the basis of the known i.e. based on the knowledge of facts) (the answer option indicates such a statement with an 'I')
- Judgements, which are opinions (or estimates or anticipations of common sense or intention) that imply approval or disapproval of persons, objects, situations and occurrences in the past, the present or the future (the answer option indicates such a statement with a 'J')

5. (1) Stagflation was observed in industrialized countries during the 1970s, when a bad economy was combined with OPEC raising the oil prices.
 - (2) Hyperinflation, which affects the pricing structures, can lead to a breakdown of the nation's monetary system.
 - (3) A problem with stocks and inflation is that a company's returns tend to be overstated.
 - (4) We typically spend more on fuels than postage stamps and so inflation isn't necessarily evil but volatility in inflation due to excessive economic growth can be seriously detrimental.
 - (5) The running joke on Wall Street is that it's easier to sell an air conditioner in the dead of winter than it is to convince investors that they need protection from inflation.
- (A) FIFJJ (B) FIFJF (C) IJFFJ (D) IIFJJ

DIRECTIONS for question 6: The following question presents four statements, of which three, when placed in appropriate order, would form a contextually complete paragraph. Pick the statement that is not part of that context.

6. (A) Their position is generally that evolution through natural selection and physical forces and principles alone is not solely responsible for the current diversity of life on earth.
- (B) Almost all proponents of intelligent design have been theists, arguing that the creator must be God.
- (C) ID proponents such as Michael Behe promote theories such as Irreducible Complexity which posits that there are certain organs and structures found in nature that have no convincing gradual evolutionary pathway, and are very complex.
- (D) Intelligent design is advanced by many "Young Earth creationists," who use it to rebut the theory of evolution, and, by extension, the facts that support it.

DIRECTIONS for question 7: In the question, there are five sentences or parts of sentences that form a paragraph. Identify the sentence(s) or part(s) of sentence(s) that is/are correct in terms of grammar and usage (including spelling, punctuation and logical consistency). Then, choose the **most appropriate** option.

7. (a) Anxiety of digital rights and freedoms is a driving issue for people under 40, and it cuts across partisan and ideological lines.
 - (b) It's an open question whether these make political action on this question easier or hard. On the one hand, this is one of very less areas
 - (c) where one could imagine bipartisan cooperation taking place in Congress at the moment. On the other hand, no politician
 - (d) needs to worry about been voted out of office on this issue, because there is no way currently to translate your feelings on this issue into votes.
 - (e) At Netroots Nation last weekend, Nancy Pelosi was booted by young, digitally conscious left-wingers for failing to stick by Mr. Snowden.
- (A) b and e (B) a, c and d
(C) Only c (D) b and c

DIRECTIONS for question 8: The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the sentence that completes the paragraph in the most appropriate way.

8. Transformational leadership starts with the development of a vision, a view of the future that will excite and convert potential followers. This vision may be developed by the leader, by the senior team or may emerge from a broad series of discussions. The important factor is the leader buys into it, hook, line and sinker. The next step, which in fact never stops, is to constantly sell the vision. This takes energy and commitment, as few people will immediately buy into a radical vision, and some will join the show much more slowly than others. The transformational leader thus uses whatever it takes to convince others to climb on board the bandwagon. In order to create followers, a transformational leader has to be very careful in creating trust, and his personal integrity is a critical part of the package that he is selling.
- (A) No longer can a leader hope to win the day with sheer charisma and enthusiasm and in actuality, he must be capable of far more than he appears to be.
(B) In effect, they are selling themselves as well as the vision.
(C) In some respects, followers are the product of the transformation.
(D) No, less the package being sold would, then, need to be one that convinces followers that they are on the right bandwagon.

DIRECTIONS for question 9: The sentences given in the following question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. From among the four choices given below each question, choose the most logical order of sentences that constructs a coherent paragraph.

9. (a) The new forms of entanglement are a consequence of migratory processes, as well as of worldwide material and immaterial communications systems and economic interdependencies and dependencies.

- (b) Cultures today are extremely interconnected and entangled with each other.
 - (c) It is here, of course, that questions of power come in.
 - (d) The way of life for an economist, an academic or a journalist is no longer German or French, but rather European or global in tone.
 - (e) Lifestyles no longer end at the borders of national cultures but go beyond these and are the same way in other cultures.

(A) adebc	(B) ebacd
(C) bedac	(D) baced

DIRECTIONS for questions 10 to 21: Read the following passages and answer the questions that follow them.

Passage – I

"In our time, political speech and writing are largely the defence of the indefensible," Orwell writes, in his most famous shorter work "Politics and the English Language". "Things like the continuance of British rule in India, the Russian purges and deportations, the dropping of the atom bombs on Japan, can indeed be defended, but only by arguments which are too brutal for most people to face, and which do not square with the professed aims of political parties. Thus political language has to consist largely of euphemism, question-begging and sheer cloudy vagueness." In the essay's peroration, he concludes: "Political language [...] is designed to make lies sound truthful and murder respectable, and to give an appearance of solidity to pure wind."

This is put with exhilarating ferocity, though Orwell was not, as some assume, the first to notice the phenomenon. (Confucius had complained millennia before that politically motivated misnaming led to the corruption of society.) Orwell nods here by using the phrase "the Russian purges" descriptively himself: euphemising the show trials and mass executions as "purges" was a way of metaphorically justifying them as a purification of the body politic. But he offers other bloodily fine examples from his era: "pacification" of villages by bombing, or "rectification of frontiers" by forcibly ejecting people from their farms.

What is worrying, however, is that Orwell's diagnosis of "cloudy vagueness" and "pure wind" might seem to sanction an impudent dismissal. Political rhetoric now as in Orwell's day exploits not only euphemism ("austerity") but dysphemism ("skivers") and loaded metaphor ("fiscal cliff"): in our time, weaponised soundbites are deliberately engineered to smuggle the greatest amount of persuasion into the smallest space, to be virally replicated on rolling news. In my book on modern political rhetoric, I called this Unspeak. Rather than waving it away as "pure wind", it is necessary to listen all the more closely to this stuff, because you need to bring the buried argument out into the open in order to defeat it.

Orwell's assault on political euphemism, then, is righteous but limited. His more general attacks in "Politics" on what he perceives to be bad style are often outright ridiculous, parading a comically arbitrary collection of intolerances. Orwell was right that "the slovenliness of our language makes it easier for us to have foolish thoughts".

His essay comforts, for example, the kind of Little Englander of the verbals who is suspicious of words from beyond these shores. Orwell will sneer at you for "pretentious diction" for use of phrases of "foreign" origin. "Except for the useful abbreviations i.e., e.g., and etc...", Orwell declares, "there is no real need for any of the hundreds of foreign phrases now current in the English language." Yet if we strip the language down to what there is a "real need" for, whither poetry? Allow only the words that Orwell thinks necessary, and the resulting stunted lexicon is itself a kind of functionalist, impoverished Newspeak. Nor, according to Orwell's linguistic xenophobia, is there any excuse for forming new words from Latin or Greek.

Orwell's eccentric final tip-list includes "Never use a long word where a short one will do" (why ever not?), and "Never use the passive where you can use the active." No good reason is offered or indeed imaginable for always avoiding the passive, though Orwell did thus influence a whole generation of incompetent style-guide composers who repeated this loony stricture as gospel.

In any case, the tips are all undone by the last: "Break any of these rules sooner than say anything outright barbarous." Orwell's own taste was notably dubious when applied to the work of others: his essay about the first three of TS Eliot's *Four Quartets*, for example, is cloth-eared and bigoted. (Because he hates Eliot's religion, he is sure that the poetry must be bad.) Orwell even concedes, at the end of "Politics", that you could follow all his rules and "still write bad English".

10. The primary purpose of the passage is to

 - (A) dismiss Orwell's "Politics and the English Language" as based on unsound premises.
 - (B) question Orwell's credentials as a writer.
 - (C) question Orwell's claim to the custodianship of good English.
 - (D) criticize Orwell's assault on political euphemism as limited.

Passage – II

As American parents, we are more involved in our children's lives than ever: we schedule play dates, assist with homework and even choose college courses.

We know that all of this assistance has costs – depleted bank balances, constricted social lives – but we endure them happily, believing we are doing what is best for our children.

What if, however, the costs included harming our children?

That unsettling possibility is suggested by a paper published in February in the American Sociological Review. The study, led by the sociologist Laura T. Hamilton of the University of California, Merced, finds that the more money parents spend on their child's college education, the worse grades the child earns.

Why would parents help produce these negative outcomes? It seems that certain forms of help can dilute recipients' sense of accountability for their own success. The college student might think: If Mom and Dad are always around to solve my problems, why spend three straight nights in the library during finals rather than hanging out with my friends?

And there is no reason to believe that parents and children have cornered the market on these dynamics. Indeed, "helicopter helping" should yield similar consequences in virtually any relationship – with spouses, friends, co-workers – in which one person can help another.

Before getting carried away on the risks of helping, though, it's important to highlight the obvious, that helping others achieve their goals has important benefits, for both parties. Responsive, supportive relationships are the foundation of a healthy and productive life.

And therein lies the problem: how can we help our children (and our spouses, friends and co-workers) achieve their goals without undermining their sense of personal accountability and motivation to achieve them?

The answer, research suggests, is that our help has to be responsive to the recipient's circumstances: it must balance their need for support with their need for competence. We should restrain our urge to help unless the recipient truly needs it, and even then, we should calibrate it to complement rather than substitute for the recipient's efforts.

The good news is that people seem to be adept at understanding when others need help, as shown in a fascinating observational study of barroom brawls. This study, led by the sociologist Michael J. Parks of Penn State and published online in March in the journal *Aggressive Behavior*, showed that bystanders are especially likely to intervene to end the brawl when it is clear that the brawlers are intoxicated. That is, observers stepped in to help precisely when that help was most needed.

Although appropriating recipients' self-control efforts can be essential when their self-control is compromised, as when they are drunk, a better approach in most situations is to calibrate one's help to complement the recipient's own efforts. The Carnegie Mellon psychologist Brooke Feeney videotaped married couples as they discussed one partner's personal goals, like switching jobs or developing a new hobby. When the spouses of these goal pursuers were receptive to being relied upon (as judged by trained coders) but did not impose their help, the goal pursuers behaved more independently in the pursuit of their goal and, most important, were more likely to achieve it over the next six months.

Passage – III

The historians ask whether the Enlightenment is a single Europe-wide movement or a set of rather different intellectual adventures in different countries. Scotland is a center of enlightened thought, with Adam Smith and David Hume heading a list of stars, but the commoner understanding of the Enlightenment is that its center is the France of Voltaire, Rousseau and Diderot. For the intellectuals, by contrast, the Enlightenment is a single Europe-wide event and marks the moment when we abandoned religious superstition and advanced boldly into the light of reason. We are all, it seems, secularists now.

Anthony Pagden's "The Enlightenment: And Why It Still Matters" doesn't fit perfectly with the broad claims of either the historians or the intellectuals. It is, however, unmistakably a political tract for our time. The Enlightenment features here as the moment when the West not only embraced reason but also became cosmopolitan. Mr. Pagden presents these qualities as the source of such political decency as we may claim in dealing with other peoples. It inspires the internationalist passion for peace and progress that are today in confrontation with the kind of person he refers to, at one point, as the "ignorant, unthinking, sentimentalist usually identified as a 'nationalist.' "

We think of ourselves as enlightened, Mr. Pagden tells us, if we are tolerant and forward-thinking and "if stem-cell research does not frighten us but fundamentalist religious beliefs do." His account of the Enlightenment itself follows several themes, ranging from transcending religious dogma to aspiring to include the whole of mankind within a political structure, thus involving us with one another as fellow citizens. Enlightenment is an optimistic attitude, Mr. Pagden says, in which human beings are thought to be linked by mutual sympathy. Forward-thinking, as he calls it, adumbrates a cosmopolitan future that might ultimately remove the scourge of war from the planet.

One problem with this version of the Enlightenment story is the difficulty of deciding who, from the founding period, counts as belonging to the "club" of the enlightened. After all, one of the more dramatic climaxes of the 18th century was Robespierre's reign of terror during the French Revolution. According to the revolution's enlightened theorists and philosophers, society was to be newly based on virtue. The result, as we know, could be a murderous frenzy. Mr. Pagden is of course eager to drum Robespierre's Jacobins out of his club.

What about Marxists and other revolutionaries supposedly guided by the imperatives of reason? Mr. Pagden excludes them too, but it's hard to see why. A great deal in Marx had been said in one way or another by Hegel, and Mr. Pagden treats Hegel with appropriate respect. It would be absurd to blame Stalin, Mao and Pol Pot on Rousseau and other thinkers who imagined the ideal society, but it is important to trace the subtle causal relations among intellectual currents and political ideology if you are determined, as Mr. Pagden seems to be, on elevating certain ideas and denigrating others. Mr. Pagden acknowledges that Kant and one or two other enlightened thinkers were unsound on the question of race, judging some races inferior to others. He defensively reminds us that the enslavement of Africans was not so "unlike what centuries of absolute, despotic monarchy and the intellectual tyranny of the Church had done to the Europeans."

In that case, we should apparently count ourselves lucky to have broken free of theological prejudice and achieved enlightened wisdom. We had, it seems, been sunk in despotic slumbers (like Kant before he read Hume) until awakened by early figures like Hobbes, Locke and Spinoza, after whom the club finally set itself up in the business of turning our civilization the right way up. What can it be that caused this remarkable change of course? We are not told.

Mr. Pagden's basic take on the Enlightenment is locked into secularist legendry—as if intellectual progress only began when philosophers questioned religious authority. Diderot, d'Alembert, Voltaire and other leading thinkers of the Enlightenment, he says, "effectively discredited the idea that any kind of religious understanding might prove a true source of knowledge."

- 16.** Which of the following best describes the relation of the first paragraph to the passage as a whole?
- It introduces conflicting theories to be reconciled and advances an argument that is subsequently well supported.
 - It outlines a theory to be analyzed by qualifying a previously expressed point of view.
 - It makes a general observation to be exemplified and challenged later.
 - It lays the foundation for the ensuing discussion.
- 17.** The passage suggests which of the following about "The Enlightenment: And Why It Still Matters"?
- The author does not credit the Enlightenment with helping us overcome our close-mindedness.
 - The author agrees that it is the enlightened who have taught us to be considerate of those of different denominations.
- 18.** The author refers to Robespierre and the Marxists primarily in order to point
- to the dictatorial undercurrent that determined the course of the Enlightenment.
 - out that some members belonging to Pagden's list had not achieved enlightenment.
 - out that defining examples of Pagden's political ideology are not easily identified.
 - to a flaw in the revolutionists' interpretation of the Enlightenment.

Passage – IV

WHAT is the true legacy of *Roe v Wade*, which was decided 40 years ago today? On the one hand, that question seems obvious: legal abortion. In *Roe* the Supreme Court held that the "due process" clause of the 14th amendment contains "a concept of personal liberty", and, building on an earlier decision that barred states from criminalising counselling related to contraception, that "the penumbras of the Bill of Rights" enshrine "a right of personal privacy, or a guarantee of certain areas or zones of privacy". It found that this right of privacy "is broad enough to encompass a woman's decision whether or not to terminate her pregnancy", and thus found blanket or statutory bans on abortion unconstitutional. States could ban third-trimester abortions, and "regulate the abortion procedure in ways that are reasonably related to maternal health" in the second, but in the first trimester the decision to terminate a pregnancy was solely the province of a woman and her doctor.

But, as the past few years have shown, just because states cannot ban abortion outright does not mean they cannot regulate it out of practical existence. In 2011 states enacted three times as many restrictions (91) on abortion providers and clinics than in the next-highest year (35). Virginia required abortion clinics to meet the same (onerous and expensive) building, parking and record-keeping requirements as hospitals. Mississippi requires abortionists practicing there to have admitting privileges in local hospitals – privileges that must be applied for and can be denied for any reason, such as not wanting to grant them to doctors who perform abortions. Personhood amendments, which would define human life as beginning at conception and therefore make abortion murder, have not won passage onto any state's constitution, but advocates will no doubt keep trying. First-trimester abortions may be just as constitutionally protected today as they were 13 years ago, but they are functionally far harder for women (particularly poor women, who lack the means to travel out-of-state) to obtain.

Writing in the *New Yorker*, Jill Lepore makes a compelling case that the real and lasting legacy of *Roe* has nothing to do with abortion; instead, it has to do with how the left and right use courts. The left, seeing the backlash that resulted from the Supreme Court effectively deciding a complex and thorny social issue, has been reluctant to go that road again. The right, seeing how the Supreme Court had effectively decided a complex and thorny social issue, has, in the words of a constitutional-law scholar whom Ms Lepore quotes, "raised a generation of people who understand that courts matter and who will vote on that basis and can be mobilised to vote on that basis and who are willing to pay political costs for votes. This is completely lacking on the other side." Never underestimate the instructive power of failure and loss, in other words. This legacy, it seems to me, is wholly unsalutary. Of course, rights should not be subject to referendum. The civil-war amendments were rammed down the throats of 19th-century white southerners, as well they should have been. But not all contentious social issues boil down to, or should be boiled down to, rights to be disputed in courts. As Ms Lepore notes in her piece, the court route encouraged abortion-rights advocates to argue their position based on privacy, rather than equality – to make the argument legalistic and abstract, rather than concrete and inclusive. Small wonder that the left has been on its heels on abortion ever since.

- 19.** The passage indicates that the real "legacy" of *Roe v Wade* is that
- it has widened the split between left and right over the issue of abortion.
 - the realization has dawned that adjudication through courts is not always effective in countering ideology.
 - the realization has dawned that reforms need to be accepted, not imposed.
 - victories in court are only partial ones.
- 20.** According to the passage, the "due process" clause of the 14th amendment includes which of the following w.r.t *Roe v Wade*?
- Protecting prenatal life and protecting women's health.
 - A woman's decision to have an abortion balanced against the state's legitimate interests in regulating abortion.
 - Concept of personal liberty and restrictions upon state actions.
 - A woman's decision whether or not to terminate her pregnancy as a constitutional right that overrides state abortion statutes.

- 21.** Which of the following can be inferred from the passage regarding the trimesters of pregnancy?
- The state can regulate the abortion procedure based on its safety for the mother at any stage of pregnancy.
 - The state has no right to intervene prior to fetal viability in the third trimester.
 - The Supreme Court's trimester framework removes the grounds for intervention by the state.
 - The state's grounds for intervention strengthen over the course of a pregnancy.

DIRECTIONS for questions 22 to 24: Answer the questions on the basis of the information given below.

In a competition, six pairs of chairs were arranged in such a way that one chair in each pair faces south and the other faces north, with the backs of every pair of chairs tied together. Thus any person sitting in a north facing chair cannot see any of the persons sitting in the south facing chairs and vice versa. The pairs of chairs were numbered from 1 to 6, from west to east, such that, both the chairs (i.e., the north facing chair and the south facing chairs) at the west end are numbered 1 and so on, till both the chairs at the east end are numbered 6.

Six men – A through F – along with their wives – P through U – not necessarily in the same order, participated in the competition. All the men sat in the chairs that were facing north and all the women sat in the chairs facing south. Each of the men was provided with a paper on which he was asked to write the number of the chair on which his spouse was sitting. The following are the replies by each of them: A – 4, B – 4, C – 5, D – 6, E – 1 and F – 3.

Further, it is known that

- none of the men wrote the same number as that of the chair he was sitting in.
- exactly three men guessed the chair numbers of their wives correctly.
- P is sitting three places to the right of Q, who is the wife of C
- R, the wife of A, is to the right of P and left of S.
- exactly three persons were sitting in the same numbered chairs as their wives.

- 22.** If F is sitting behind B's wife, then B must be sitting behind
- E's wife.
 - D's wife.
 - F's wife.
 - Cannot be determined

- 23.** Who among the following did not sit in the same numbered chair as her husband?
- S
 - R
 - P
 - More than one the above

- 24.** Which of the following statements is definitely true?
- T is the wife of F.
 - T is the wife of D.
 - S is the wife of E.
 - P is the wife of E.

DIRECTIONS for questions 25 to 27: Answer the questions on the basis of the information given below.

Election Watch, an NGO, ranked five contestants in an election – Anil, Binay, Chandu, Dolly and Emran – on four parameters – Honesty, Leadership, Communication Skills and Vision. No two persons got the same rank in any parameter and no person got the same rank in any two parameters.

- The first rank in Communication Skills and the third rank in Vision are secured by the same person.
- Binay, who did not secure the fifth rank in any parameter, secured the third rank in Leadership.
- The first rank in Leadership and the second rank in Honesty are secured by the same person.
- Dolly is the only person who did not secure the first rank in any parameter.
- Emran, who secured the second rank in Communication Skills and the third rank in Honesty, secured first rank in either Leadership or Vision.

- 25.** Who among the following did not secure the fourth rank in any of the parameters?
- Emran
 - Anil
 - Binay
 - Cannot be determined
- 26.** For how many persons can the ranks secured in all the parameters be uniquely determined?
- 4
 - 2
 - 1
 - 3

- 27.** Which of the following statements is definitely false?
- If Chandu secured 4th rank in Vision, then Anil secured 5th rank in Honesty.
 - If Chandu secured 5th rank in Communication Skills, then Anil secured 2nd rank in Honesty.
 - If Anil secured 1st rank in Leadership, then Chandu secured 4th rank in Leadership.
 - If Anil secured 2nd rank in Honesty, then Chandu secured 3rd rank in Vision.

DIRECTIONS for questions 28 to 30: Answer the questions on the basis of the information given below.

Salim bought a circular plot of land and divided the plot into six equal sectors along the centre and planted six different trees – Peepal, Banyan, Neem, Mango, Orange and Guava – one in each of the sectors. He planted the trees along the border of the circular plot at uniform distances. Later, he sold all the sectors, each at a different price and to a different person among – Praneeth, Quadir, Ram, Sanjay, Tarun and Uday.

Further, it is known that

- the sector sold to Praneeth is neither adjacent to the sector sold at the highest price nor adjacent to the sector with the Mango tree.
- the Banyan tree and the Orange tree are adjacent to the Peepal tree.
- the sector with the Mango tree was purchased neither by Ram nor by Sanjay and it is adjacent to the sector with the Orange tree.
- the sector sold to Uday contains the Guava tree and is adjacent to the sector sold to Sanjay and opposite the sector sold to Praneeth.
- Quadir paid the highest price and the sector sold to him is adjacent to the sector sold to Tarun.

- 28.** Which tree is present in the sector sold at the highest price?
- Mango
 - Orange
 - Banyan
 - Cannot be determined

- 29.** Who purchased the sector with the Banyan tree?
- Quadir
 - Ram
 - Praneeth
 - Sanjay

- 30.** Which of the following pairs of persons and the trees in their sectors is /are correctly matched?
- Praneeth – Orange
 - Sanjay – Neem
 - Tarun – Peepal
- Only (i)
 - Only (i) and (ii)
 - Only (ii)
 - (i), (ii) and (iii)

(Key and Solutions for AIMCAT1408)

Key

SECTION – I

- | | | | | | |
|------|-------|-------|-------|-------|-------|
| 1. C | 6. B | 11. C | 16. B | 21. D | 26. B |
| 2. D | 7. D | 12. B | 17. D | 22. B | 27. C |
| 3. D | 8. C | 13. C | 18. D | 23. A | 28. B |
| 4. D | 9. B | 14. A | 19. A | 24. A | 29. D |
| 5. C | 10. C | 15. C | 20. B | 25. B | 30. C |

SECTION – II

- | | | | | | |
|------|-------|-------|-------|-------|-------|
| 1. C | 6. C | 11. B | 16. D | 21. D | 26. D |
| 2. B | 7. C | 12. C | 17. B | 22. A | 27. B |
| 3. C | 8. B | 13. B | 18. C | 23. D | 28. A |
| 4. D | 9. C | 14. B | 19. B | 24. C | 29. B |
| 5. B | 10. D | 15. A | 20. B | 25. A | 30. C |

Solutions

SECTION – I

Solutions for questions 1 to 4:

- The angle between the hands change by $5\frac{1}{2}^\circ$ for every minute. In the given question, the angle has to change from 90° behind to 180° ahead, i.e., it has to increase by 270° .
 \therefore The time taken for the angle to change by 270° =

$$270 \times \frac{2}{11} = \frac{540}{11} = 49 \frac{1}{11}$$
 minutes. Choice (C)
- The data is tabulated below

	P	e	s
I	3	4	6
II	5	2	3
III	4	3	5

We need $(p, e, s) = (55, 50, 75)$

Let us say we need a of type I, b of type II, c of type III

$$\begin{aligned} \therefore 3a + 5b + 4c &= 55 \quad (1) \\ 4a + 2b + 3c &= 50 \quad (2) \text{ and} \\ 6a + 3b + 5c &= 75 \quad (3) \\ (1) - (2) \Rightarrow -a + 3b + c &= 5 \quad (4) \\ \text{and } (3) - 2(1) \Rightarrow 7b + 3c &= 35 \quad (5) \\ 4(4) + (2) \Rightarrow 14b + 7c &= 70 \quad (6) \\ (5), (6) \Rightarrow c = 0, \therefore b = 5 \text{ and } a = 10 \end{aligned}$$

\therefore To get the required number of items of the 3 kinds, the person has to buy 10 of Type I, 5 of Type II and none of Type III.

Alternative Solution:

The number of sharpeners in Type 1 and Type 2 packs are both multiples of 3. So is the total number of sharpeners required. However, the number of sharpeners in Type 3 is not a multiple of 3. Hence, the should not buy and packs of Type 3.
 Choice (D)

- Let us represent the digit which is repeated 4 times by a and the 5th digit by b . The possible solutions are

Case (i):
 when $a = 0$, b can be 3 or 6 or 9. The numbers are 30000, 60000 and 90000.

when $a = 1$, b can be 2 or 5 or 8. The number of possible values will be given by $\frac{5!}{4!} \times {}^3C_1$ i.e., 15.

3C_1 is for selecting one from the three digits 2, 5 or 8 and that number can be arranged in $\frac{5!}{4!} = 5$ ways, as the fifth digit 'b' can occupy any of the five places.

Note that if the fifth digit is zero, then it can occupy only four of the five places. For example, when $a = 3$, b can be 0 or 6 or 9. Now with 6 or 9 we will have 5 ways but with 0 there will be 4 ways [since 0 cannot be in the ten thousands place]. Total 14 number are possible.

Hence, whenever 'a' is not a multiple of 3, we will get 15 ways. But when 'a' is a multiple of 3, then we will get only 14 ways. Hence we will have 15 ways for each case when $a = 1, 2, 4, 5, 7$ and 8. Also, we will have 14 ways for each case when $a = 3, 6$ and 9.

Therefore total number of possible values for y
 $= 3 + 3(14) + 6(15) = 135$ Choice (D)

- The number of perfect squares $\leq 10^6$ is 10^3 .
 The number of perfect cubes $\leq 10^6$ is 10^2
 Of these there are common terms that are perfect sixth powers, of which there are $10 (1^3, 4^3, 9^3, 16^3, 25^3, 36^3, 49^3, 64^3, 81^3 \text{ and } 100^3)$ and these appear in both the lists. Thus the number of numbers less than or equal to 10^6 which are perfect squares or cubes or fourth powers (all fourth powers are included in squares) is $1000 + 100 - 10 = 1090$.
 Choice (D)

Solutions for questions 5 to 7:

- Let the total profits of the industry be x .

$$\text{Sales} = \frac{\text{Profit}\% \times x}{\text{Probability}}$$

Sales of each of the given companies in 2007 are as follows

$$\begin{array}{ll} A - \frac{0.15x}{0.12} & C - \frac{0.25x}{0.15} \\ D - \frac{0.2x}{0.03} & E - \frac{0.15x}{0.25} \end{array}$$

By comparison we can see the sales of D are greater than 6x in 2007, whereas no other company had sales more than 2x.
Choice (C)

6. The sales of companies B and C in each of the given years are as follows (assuming the industry overall profits are p, q, r, s, t and u, in the years 2006 through 2011 respectively):

	2006	2007	2008	2009	2010	2011
B	0.15p	.25q	0.15r	0.15s	0.25t	0.2u
	0.15	0.15	0.10	0.12	0.35	0.18
C	0.2p	0.25q	0.27r	0.15s	0.25t	0.15u
	0.22	0.15	0.25	0.42	0.19	0.35

From the above table we can see that the sales of company B are more than that of company C in 2006, 2008, 2009 and 2011, i.e., 4 years.
Choice (B)

7. The ratio cannot be determined as we neither know the profits in 2006 and 2008 nor do we know the ratio of profits between these two years.
Choice (D)

Solutions for questions 8 to 14:

8. The following are the two cases in which the composition remains unaltered after transferring one ball from A to B and then from B to A.

- i) Drawing a red ball from A and placing it in B and then drawing a red ball from B and placing it in A.
The probability of this event is

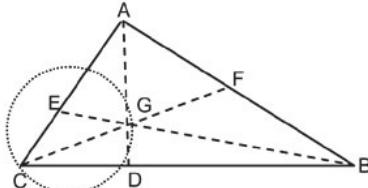
$$\left(\frac{4}{4+3}\right)\left(\frac{4}{4+4}\right) = \left(\frac{4}{7}\right)\left(\frac{4}{8}\right) = \frac{16}{56}$$

- ii) Drawing a black ball from A and placing it in B and then drawing a black ball from B and placing it in A.
The probability of this event is

$$\left(\frac{3}{3+4}\right)\left(\frac{5}{5+3}\right) = \left(\frac{3}{7}\right)\left(\frac{5}{8}\right) = \frac{15}{56}$$

$$\therefore \text{Total probability is } \frac{16}{56} + \frac{15}{56} = \frac{31}{56} \quad \text{Choice (C)}$$

9.



Consider the cyclic quadrilateral EGDC, AC and AD are secants from the same point to the circle.

$$\Rightarrow AE \cdot AC = AG \cdot AD$$

$$AE = EC = x \text{ say}$$

$$\text{And } AG = 2GD = y \text{ say}$$

(Since E is mid point of AC, while G is centroid and AD is the median).

$$\text{Hence } x \cdot 2x = 2y \cdot 3y \Rightarrow x = \sqrt{3} y \Rightarrow AE = \sqrt{3} GD$$

\Rightarrow I is true.

Similarly, if Q_1 , Q_2 and Q_3 are all concyclic, then $AE = \sqrt{3} GD \Rightarrow AD = \frac{\sqrt{3}}{2} AC$ and $AD = \frac{\sqrt{3}}{2} AB$

$\Rightarrow AB = AC$. Similarly $AC = BC$ can be proved. (i.e., ABC is equilateral). Hence, III is true.

\Rightarrow Only I and III are true.
Choice (B)

10. The points $(0, 0)$, $(-2, 0)$, $(2, 0)$, $(-1, -1)$ and $(1, -1)$ satisfy only the relation $y = |x| - 1$ among the given options.
Choice (C)

11. Clearly, if he wins a game he will gain ₹80 and if he loses a game he will lose ₹140.

Let x be the number of games won by him and y be the games lost by him.

$$\text{Given that } 80x - 140y = 600 \quad \text{--- (1)}$$

$$\text{It is also given that } 305 < (x + y) < 314 \quad \text{--- (2)}$$

$$(1) \Rightarrow 4x - 7y = 30$$

By trial $(x, y) = (11, 2)$ satisfies the equation.

Other values are given by $x = 11 + 7k$ and $y = 2 + 4k$

$$\therefore x + y = 11k + 13$$

$$(2) \Rightarrow 306 \leq 11k + 13 \leq 313 \Rightarrow 293 \leq 11k \leq 300$$

$$\Rightarrow 11k = 297$$

$\Rightarrow k = 27$ and $x + y = 11(27) + 13 = 310$ and number of losses $= 27 \times 4 + 2 = 110$
Choice (C)

12. As $SR : QS = 1 : \sqrt{2}$, $PR : PQ = 1 : \sqrt{2}$

$$\text{As } \angle QPR = 45^\circ \text{ and } \frac{PR}{PQ} = \frac{1}{\sqrt{2}} = \cos 45^\circ.$$

Alternately, if $\angle PQR = \theta$, angle $\angle PRQ$ will be $(135 - \theta)$ and $\sin \angle PRQ = \frac{\sqrt{2}}{1}$

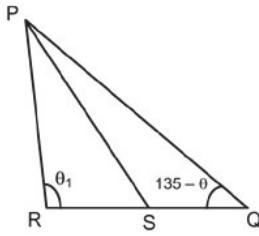
$$\Rightarrow \frac{\sin \theta}{\sin(135 - \theta)} = \frac{\sqrt{2}}{1}$$

$$\Rightarrow \frac{\sin \theta}{\sqrt{2}} = \sin 135^\circ \cos \theta - \cos 135^\circ \sin \theta$$

$$= \frac{\cos \theta}{\sqrt{2}} + \frac{\sin \theta}{\sqrt{2}}$$

$$\Rightarrow \cos \theta = 0^\circ$$

$$\Rightarrow \angle PRQ = 90^\circ$$



$$\Rightarrow \angle PRQ = 90^\circ$$

$$\therefore \angle PSR = 180^\circ - (90^\circ + 22\frac{1}{2}^\circ) = 67\frac{1}{2}^\circ.$$

$$\angle PQR = 180^\circ - (45^\circ + 90^\circ) = 45^\circ$$

$$\therefore \angle PSR + \angle PQR = 112\frac{1}{2}^\circ$$

Choice (B)

13. The given quadratic is $x^2 - x - a = 0$

Let the roots be α, β .

$$\alpha + \beta = 1 \text{ and } \alpha\beta = -a$$

$$\alpha^2 + \beta^2 = 1^2 - 2(-a) = 1 + 2a$$

In general, let $\alpha^n + \beta^n = S_n$

$$(\alpha^n + \beta^n)(\alpha + \beta) = \alpha^{n+1} + \beta^{n+1} + \alpha\beta(\alpha^{n-1} + \beta^{n-1})$$

$$= S_{n+1} - a S_{n-1}$$

i.e., $S_n(1) = S_{n+1} - a S_{n-1}$

$$\text{or } S_{n+1} = S_n + a S_{n-1}$$

$$\therefore S_3 = S_2 + a S_1 = (1 + 2a) + a = 3a + 1$$

$$S_4 = S_3 + a S_2 = (3a + 1) + a(2a + 1) = 2a^2 + 4a + 1$$

$$S_5 = S_4 + a S_3 = (2a^2 + 4a + 1) + a(3a + 1) = 5a^2 + 5a + 1$$

$$S_6 = S_5 + a S_4 = (5a^2 + 5a + 1) + a(2a^2 + 4a + 1)$$

$$= 2a^3 + 9a^2 + 6a + 1$$

Given $S_4 = 881$ and $S_6 = 19721$

$$\therefore 2a^2 + 4a - 880 = 0 \text{ and } \text{--- (1)}$$

$$2a^3 + 9a^2 + 6a - 19720 = 0 \text{ --- (2)}$$

$$(1) \Rightarrow 2a^3 + 4a^2 - 880a = 0 \text{ --- (3)}$$

$$(2) - (3) \Rightarrow 5a^2 + 886a - 19720 = 0 \text{ --- (4)}$$

$$5(1) \Rightarrow 10a^2 + 20a - 4400 = 0 \text{ --- (5)}$$

$$2(4) \Rightarrow 10a^2 + 1772a - 39440 = 0 \text{ --- (6)}$$

$$(6) - (5) \Rightarrow 1752a = 35040$$

$$\text{or } a = \frac{35040}{1752} = 20$$

Now, $S_1 = 1$

$$\begin{aligned}
 \therefore S_2 &= 1 + 2a = 41 \\
 S_3 &= S_2 + a S_1 = 41 + 20 = 61 \\
 S_4 &= S_3 + a S_2 = 61 + 20(41) = 881 \\
 S_5 &= S_4 + a S_3 = 881 + 20(61) = 2101 \\
 S_6 &= S_5 + a S_4 = 2101 + 20(881) = 19721 \\
 S_7 &= S_6 + a S_5 = 19721 + 20(2101) = 61741
 \end{aligned}$$

Choice (C)

14. The given problem is to find the number of ways of dividing the 8 similar balls into 3 groups with each group having atleast one ball.

Thus, the required number of ways is equal to the number of positive integral solutions of the equation

$$x_1 + x_2 + x_3 = 8 \text{ which is equal to } {}^{8-1}C_{3-1} = {}^7C_2 = 21$$

(Note : the number of positive integral solutions of the equation $x_1 + x_2 + x_3 + \dots + x_k = n$ is ${}^{(n-1)}C_{k-1}$)

Choice (A)

Solutions for questions 15 to 17:

15. In the first match Sehwag could have scored maximum 28 runs \Rightarrow He is not the man of the match.

Similarly the maximum runs Sehwag can score in the second match is 28. Cowan can score minimum of $268 - 39 - 200 - 29$ runs in the second match \Rightarrow Sehwag is not the man of the match.

In the third match Sehwag scored $86 - 28 = 58$ runs. Every other batsman can score less runs than sehawg in this match \Rightarrow Sehwag can be the man of the match in the third match.

In the fourth and fifth matches put together Sehwag scored $195 - 86 = 109$ runs whereas Kohli scored 160 runs in 4th match and 112 runs in 5th match. Hence Sehwag cannot be the man of the match in these matches. Choice(C)

16. In the second match Yuvraj can score a maximum of 52 runs, sehawg can score a maximum of 28 runs, Kohli can score a maximum of 58 runs.

As Clarke is the man of the match in 1st match, Dhoni must have scored a maximum of 63 runs in the first match \Rightarrow Dhoni must have scored a minimum of $124 - 63 = 61$ runs in the second match.

Warner can score a maximum of 60 runs and Haddin can score a maximum of 56 runs in the second match.

From above, Dhoni must be the man of the match in the second match. Choice (B)

17. Either Dhoni or Clarke can win the man of the match award in the first match. Hence, option (A) is not false. Cowan can score 200 runs in the second match and in such a case he cannot win man of the match in the third match. However, he can score 200 runs in third match and win man of the match. (Alternatively, from question 16, it can be inferred that cowan can possibly win the man of the match in the third match.) Hence, option (B) is not definitely false.

From the solutions to Q.15, Sehwag can win man of the match in third match. Hence option (C) is not definitely false.

In the fourth match Kohli scored 160 runs.

If Yuvraj wins man of the match in the fourth match he could have scored a maximum of 200 runs in that match \Rightarrow He scored 138 runs in the fifth match. From the table no player can score those many runs in the fifth match

\Rightarrow Yuvraj must be the man of the match in the fifth match also.

Thus option (D) is definitely false. Choice (D)

Solutions for questions 18 to 21:

18. If the father attends the party each child can either attend the party or not attend the party i.e., each child has 2 options. Therefore for 6 children we get

$$\Rightarrow (2)(2)(2)(2)(2)(2) = 2^6 = 64 \text{ ways}$$

If the mother attends the party, the total numbers of ways = $2 \times 2 \times 2 \times 2 = 2^4$ (as B or C won't attend the party with their mother)

F doesn't go when none of A or D attend

\Rightarrow F does not go with B, C, E

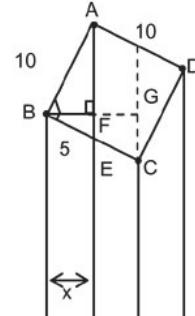
(with Father) $\Rightarrow 2 \times 2 \times 2 = 8$ ways should be removed from 1st case

(with Mother) $\Rightarrow 2$ ways should be removed from 2nd case as F will not go with E.

$$\Rightarrow \text{Required number of ways} = 64 + 16 - 8 - 2 = 70$$

Choice (D)

19. The data given in the question can be pictorially represented as follows.



In square ABCD, the thread hanging from A touches at midpoint of BC i.e. E. (Since BF = FG, and in $\triangle BGC$, FE is parallel to GC)

$$\therefore BE = 5 \text{ cm.}$$

We know that $AB \cdot BE = AE \cdot BF$ (Area of $\triangle ABE$ =

$$\frac{1}{2} AB \cdot BE = \frac{1}{2} AE \cdot BF)$$

$$10(5) = 5\sqrt{5} \quad (x)$$

$$x = 2\sqrt{5} \text{ m.}$$

Alternative Solution:

$$\text{Let } \angle ABF = \theta \Rightarrow \text{in } \triangle ABF, AB \cos \theta = 10 \cos \theta = BF \rightarrow (1)$$

$$\text{Now } \angle FBC = 90 - \theta \Rightarrow \text{in } \triangle BGC, BC \cos(90 - \theta) = 10 \sin \theta = BG = 2BF \quad (\because BF = FG) \rightarrow (2)$$

$$(2) \div (1) \text{ gives } \tan \theta = 2 \Rightarrow \text{in } \triangle ABF, \frac{AF}{BF} = 2$$

$$\text{Now if } BF = x, AF = 2x \text{ and } x^2 + (2x)^2 = 10^2$$

($\because \triangle ABF$ is right angled)

$$\Rightarrow 5x^2 = 100 \Rightarrow x = 2\sqrt{5} \text{ m}$$

Choice (A)

20. Since a, b are positive real numbers

$$|a+b| = |a| + |b|$$

Choice (B)

21. As each player from Bhavans played against at most 3 players for AECS, $x \leq 30$ (where x is the number of games played by the players of one school against the players of the other school). As each players from AECS played at

least 2, there could have been at the most $\frac{30}{2} = 15$ players from AECS.

Choice (D)

Solutions for questions 22 to 24:

22. From the diagram we can see that all the companies registered an increase form 2008 to 2009 and from 2010 to 2011. Thus all the shares registered an increase in price in two years.

Choice (B)

23. The percentage increase in prices of the companies from 1/1/2007 to 1/1/2010 are as follows.

$$P - \left(\frac{42}{15} - 1 \right) \times 100 = 180\%$$

$$Q - \left(\frac{30}{10} - 1 \right) \times 100 = 200\%$$

$$R - \left(\frac{40}{20} - 1 \right) \times 100 = 100\%$$

$$S - \left(\frac{50}{30} - 1 \right) \times 100 = 66.7\%$$

Thus the shares of company Q have shown the highest percentage increase in price. Choice (A)

24. Let the price of each share of company P be 5K and company Q be 7K in 2008.

As the number of shares remained the same, the percentage increase in the value of shares will be equal to the percentage increase in the price of each share.

The value of shares of company P in 2011 become

$$\frac{45}{35} = \frac{9}{7}$$
 times the value in 2008.

Thus price of each share of company P

$$= \frac{9}{7} \times 5K = \frac{45}{7} K$$

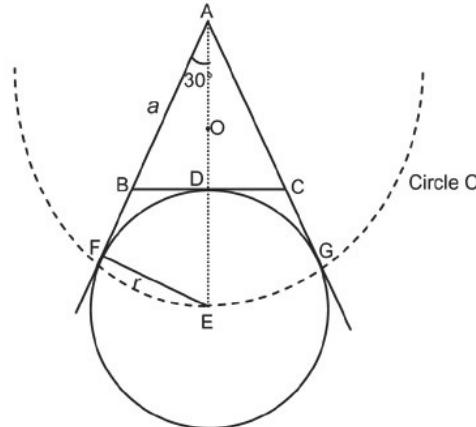
Similarly the value of each share of company Q in 2011

$$= \frac{35}{25} \times 7K = \frac{49}{5} K$$

$$\text{Required ratio} = \frac{45}{7} : \frac{49}{5} = 225 : 343 \quad \text{Choice (A)}$$

Solutions for questions 25 to 30:

25.



Consider the above figure, where AB and AC are extended and the ex-circle is shown with centre E.

Now, the centre of the circle C (shown in dashed line) will be the centroid (O) of $\triangle ABC$ and $AE = EF/\sin 30^\circ = 2r$

$$\Rightarrow AD = r$$

$$\text{Now, } AD = \frac{a\sqrt{3}}{2} \text{ and } OD = \frac{1}{3}(AD) = \frac{1}{3} \left(\frac{a\sqrt{3}}{2} \right)$$

$$AE = AD + DE = r + \frac{a\sqrt{3}}{2} = 2r \text{ or } r = \frac{a\sqrt{3}}{2}$$

$EO = \text{radius of the larger circle} = 3 \text{ cms.}$

$$\text{Hence } \frac{a\sqrt{3}}{2} + \frac{1}{3} \left(\frac{a\sqrt{3}}{2} \right) = 3; a = \frac{3\sqrt{3}}{2}. \quad \text{Choice (B)}$$

26. Each of the 5 numbers occurs in 6 triplets (\because Of the remaining 4 numbers, 2 can be selected in 4C_2 or 6 ways).

\therefore The sum of the 10 given sums is 6 times the sum of the 5 numbers.

\therefore 6 times the sum of the 5 numbers is $30 + (33 + 34 + 35 + 36 + 37 + 38) + (40 + 41 + 42) = 366$, or the sum of the five numbers is 61.

\therefore The sum of the 10 pairs that can be formed are $(61 - 42), (61 - 41)$ etc., i.e., 19, 20, 21, 23, 24, 25, 26, 27, 28 and 31.

Let the 5 numbers be a, b, c, d and e where $a < b < c < d < e$.

$$\therefore a + b = 19 \rightarrow (1) \text{ and } c + e = 28 \rightarrow (2)$$

$$a + c = 20 \rightarrow (3) \quad d + e = 31 \rightarrow (4)$$

$$\text{also } a + b + c + d + e = 61 \rightarrow (5)$$

$$(5) - (1) - (2) \text{ gives } d = 14$$

$$\Rightarrow \text{from (4), } e = 17$$

$$\text{Also, } (5) - (3) - (4) \text{ gives } b = 10$$

$$\Rightarrow \text{from (1), } a = 9$$

$$\text{Hence } a + e = 17 + 9 = 26.$$

Alternative Solution:

As $a < b < c < d < e$, among the triplets, the least is $a + b + c$ and the second least is $a + b + d$. Similarly, the greatest is $a + d + e$ and the second is $b + d + e$.

$$\therefore a + b + c = 30 \quad (1) \text{ and } b + d + e = 41 \quad (3)$$

$$a + b + d = 33 \quad (2) \quad c + d + e = 42 \quad (4)$$

Adding all the triplets, we get $6(a + b + c + d + e) = 366$ or $a + b + c + d + e = 61 \quad (5)$

$$(5), (1) \Rightarrow d + e = 31.$$

$$\therefore \text{From (4), } c = 11 \text{ and from (3), } b = 10$$

$$\therefore \text{From (1), } a = 9. \text{ From (2), } d = 14 \text{ and finally } e = 17$$

$$\therefore a + e = 9 + 17 = 26. \quad \text{Choice (B)}$$

27. Assume that a and b are the digits of the two-digit number.

$$\text{Given, } (a+b)^2 = a^2 - b^2$$

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

$$\Rightarrow a+b = a-b \Rightarrow b=0$$

$$\Rightarrow \text{Maximum value of } a = 9$$

$$\Rightarrow \text{Maximum sum} = 9+0=9 \quad \text{Choice (C)}$$

28. Number of roots of the equation is the degree of the expansion $= 2 + (n-1)2 = 2n$ Choice (B)

29. Given relations are:

$$R = \{(1, 1), (1, 3), (2, 2), (3, 1), (3, 3)\}$$

$$S = \{(1, 1), (1, 2), (2, 2), (2, 1), (2, 3), (3, 2), (3, 3)\}$$

$$R \cap S = \{(1, 1), (2, 2), (3, 3)\}$$

$$R \cup S = \{(1, 1), (1, 2), (1, 3), (2, 1), (2, 2), (2, 3), (3, 1), (3, 2), (3, 3)\}$$

Clearly S is not an equivalence relation as $(1, 2), (2, 3), \in S$ but $(1, 3), \notin S$.

$R \cap S, R \cup S$ are equivalence relations. Choice (D)

30. If each side of a triangle is increased by 20%, its inradius and circumradius will also increase by 20% each. So, the required product becomes $(1.2)(1.2)$ i.e. 1.44 times the original product.

\therefore The product of the circumradius and the inradius increases by 44%. Choice (C)

Difficulty level wise summary - Section I	
Level of Difficulty	Questions
Very Easy	-
Easy	1, 7, 20, 22, 23, 30
Medium	2, 4, 5, 6, 8, 11, 14, 15, 19, 21, 24, 27, 28, 29
Difficult	3, 9, 10, 12, 16, 17, 18, 25
Very Difficult	13, 26

SECTION – II

Solutions for questions 1 and 3:

1. In choice C, the usage should be "misfortune lighted upon him" (not "lighted at him"). It means "to come upon one unexpectedly". All other choices have the correct usage of the word 'light'. In choice A, the reference is "a person who is an outstanding leader, celebrity, or example; luminary." In choice B, "acted according to their own lights" means "acted according to their individual opinions, choices, or standards". In choice D, the reference is "to begin to accept or understand a point of view one formerly opposed."

Choice (C)

2. In choice B, "flagged off" is incorrect. The usage should be "Public enthusiasm flagged when the team kept losing" (to fall off in vigor, energy, activity, interest). All other choices

are correct. In choice A, "strike the flag" means "relinquish command, submit or surrender." In choice C, the meaning is "to signal (a person in an automobile)." Choice (B)

Solution for question 3:

3. Part 'a' is incorrect – it should be 'since 2008' not 'from' ('since' is used to refer to a point of time, 'from' would be followed by 'to'). Part 'a' should read "India's telecom scandal has been rumbling since 2008." Part 'b' is incorrect – the plural 'were' (not 'was') would be consistent with the plural subject 'licences'. Part 'b' should read "when 122 mobile licenses, covering a third of India's 2G spectrum, were awarded to eight companies". Part 'c' is incorrect – 'disclosures' is incorrectly spelt. Also the preposition 'of' should be used and not 'in' and sentence 'c' should read "A constant drip of disclosures since then has numbered public outrage." Part 'd' and part 'e' are free from errors. So the incorrect parts and the corrected versions (part given in italics) are presented below for your understanding:
- (a) India's telecom scandal has been rumbling from 2008, *India's telecom scandal has been rumbling since 2008, (CORRECT)*
 - (b) when 122 mobile licences, covering a third of India's 2G spectrum, were awarded to eight companies. *(CORRECT)*
 - (c) A constant drip in disclosures since then has numbed public outrage. *(CORRECT)*
 - (d) But, on the 2nd of February, India's Supreme Court cancelled all 122 licences.*(ERROR FREE)*
 - (e) Its 94-page ruling is essential reading for anyone interested in doing business with India.*(ERROR FREE)*

So parts 'd' and 'e' are free from errors. Choice (C)

Solution for question 4:

4. 'sophomoric' means 'poorly informed', 'immature' or 'lacking judgement'. 'Aphoristic' is the adjective form of aphorism (concise or terse formulation of a statement or truth). 'euphemism' is the substitution of an agreeable or inoffensive expression for one that may offend or suggest something unpleasant and does not fit in this context. 'insidious' means 'harmful' or 'enticing'. Given the context of 'talent for testing the untestable', seemingly immature or sophomoric notions are used to explain the slippery stuff of consciousness. Only 'sophomeric' can fit the first blank.

'Vignette' is a short descriptive literary sketch. Factoid is an invented fact believed to be true when in print form, it also refers to something trivial. While 'vignettes', 'chronicles' and 'factoids' can fit the second blank; only 'vignettes' would be correct along with 'sophomeric'. The use of 'plenty of pauses' also contributes to the use of 'vignettes'.

Choice (D)

Solution for question 5:

5. Statement 1 presents information (stagflation combines economic stagnation with inflation) which can be verified. So it is a fact. Statement 2 presents logical understanding that hyperinflation can have a detrimental effect – the breakdown of the nation's monetary system. Here 'hyperinflation affects the pricing structure' is a fact which can be verified but the overall sentence is an inference. This statement expresses a logical conclusion or derivation based on an analysis or study of earlier events or situations. The main objective of statement 3 is to present information and so it is a fact. Statement 4 is strongly opinionated. The adverbial emphasis ("typically", "necessarily", "seriously") and the adjectives ("excessive" and "detrimental") used to express the opinion(s) makes this statement a judgement. From a reading of statement 5,

one might misconstrue to classify the saying - It's easier to sell an air conditioner in the dead of winter than it is to convince investors that they need protection from inflation – as a Judgement. Usually all proverbs, maxims, adages and other wise sayings are judgements but this statement is overall worded as a fact. It can be verified whether the joke on Wall Street is the one as expressed in the statement. So, FIFJF.

Choice (B)

Solution for question 6:

6. Sentence B is a general sentence that opens the paragraph. It states that the proponents of Intelligent Design believe in the existence of God. Statement D follows sentence B. Creationists use the theory of ID to rebut the theory of evolution. It can be observed from a careful reading of the paragraph that statements DA form a mandatory pair. The reason for the rebuttal of the theory of evolution (as mentioned in D) is given in sentence A. Sentence C is a sentence that is not a part of this para. This sentence is more specific as it introduces the idea of "irreducible complexity" which needs both a precedent and more elaboration. Here "ID proponents", "theories" and "no evolutionary pathway" are distractors. This sentence can be an introduction sentence of another paragraph.

Choice (C)

Solution for question 7:

7. In sentence 'a', it should read 'Anxiety over.....' and not 'Anxiety of'. In part 'b', the pronoun 'these' is incorrect. 'This' would be correct as it refers to the subject or noun 'Anxiety' (Noun pronoun Agreement). Also comparative degree should be used and it should read 'easier or harder.' Also 'less areas' in sentence b is incorrect, it should read 'one of very few areas'. 'Areas' here is a countable noun (So one should use 'few' and not 'less'). In part 'd', the word 'been' needs to be replaced with 'being' and the correction required is 'worry about being voted.....' Also 'there is no way currently' is incorrect. It should read 'there is currently no way'. In sentence 'e', the word 'boed' is incorrectly spelt. It should be 'booed'. Also 'stick by' is incorrect. It should be 'stick up for' or 'stand by'. So only part 'c' is correct.

So the incorrect parts and the correct versions (in italics) are presented below for your understanding:

- (a) Anxiety of digital rights and freedoms is a driving issue for people under 40, and it cuts across partisan and ideological lines.
- (a) *Anxiety over digital rights and freedoms is a driving issue for people under 40, and it cuts across partisan and ideological lines. (CORRECT)*
- (b) It's an open question whether these make political action on this question easier or harder. On the one hand, this is one of very less areas
- (b) *It's an open question whether this makes political action on this question easier or harder. On the one hand, this is one of very few areas (CORRECT)*
- (c) where one could imagine bipartisan cooperation taking place in congress at the moment. On the other hand, no politician (ERROR FREE)
- (d) needs to worry about been voted out of office on this issue, because there is no way currently to translate your feelings on this issue into votes.
- (d) *needs to worry about being voted out of office on this issue, because there is currently no way to translate your feelings on this issue into votes. (CORRECT)*
- (e) At Netroots Nation last weekend, Nancy Pelosi was boed by young, digitally conscious leftwingers for failing to stick by Mr. Snowden.
- (e) *At Netroots Nation last weekend, Nancy Pelosi was booed by young, digitally conscious leftwingers for failing to stick up for (or – stand by) Mr. Snowden. (CORRECT)*

So part 'c' is free from errors.

Choice (C)

Solution for question 8:

8. The paragraph begins by explaining the notion of transformational leadership. It discusses the role of the transformational leader. It then focusses mainly on the selling of the vision that is developed either by him or her or by other senior leaders in the team. It also explains the challenges faced by the transformational leader. The para then focuses on the fact that trust needs to be created with a view to convert potential followers. Choice (B) effectively completes the ideas given in the introduction sentence ("convert potential followers") and the penultimate sentence of the paragraph ("critical part of the package that they are selling"). Choice (A) does not gel with the challenging nature of the task of selling the vision. A leader with a passionate cause would not just hope to be charismatic or enthusiastic in his dealings with others. The paragraph takes for granted that the transformational leader would need to be capable and much more. The para is not negative - it does not state that the requirements of a transformational leader are beyond one's capability or skillsets. Choice A states that certain characteristics alone in a leader will not be sufficient. So choice A is incorrect because of its negative tone. Choice C needs more elaboration as to how the transformation would affect the followers. The para just states that potential followers need to be converted (first). Choice D goes tangent to the thought flow and does not fit into the context as a conclusion sentence. The need to join the bankwagon has already been mentioned. Choice D moves away from the characteristics of the leader (personal integrity creating trust) to the package being sold itself (as though the leader the package are two different entities). Choice (B)

9. Statement 'b' introduces the topic. Statement 'e' extends the thought that lifestyles overlap in different cultures. Statement 'd' is more specific about lifestyle and exemplifies statement 'e'. Statement 'a' then follows with the explanation of why entanglements result. Statement 'c' concludes the paragraph. Questions of power would come in the things mentioned in statement 'a'. So choice B is incorrect as statement 'e' ('....national cultures....') cannot come before statement 'b' (Cultures....). Choice D is wrong. Among other problems, the idea in statement 'c' is actually not taken forward into 'ed' as given incorrectly in choice D. So 'bedac' is the correct sequence.

Choice (C)

Solution for question 10 to 21:**Number of words and Explanatory notes for RC:**

Number of words :
Passage I : 686
Passage II: 531
Passage III: 684
Passage IV: 814

10. The passage provides a synopsis of Orwell's writing tips with reference to political speech and writing. He criticizes Orwell's attack on political euphemism as limited. He begins by describing Orwell's "political language" which consists largely of euphemism, question-begging and sheer cloudy vagueness..... otherwise some of the arguments are too brutal for people to face. The author highlights the situation and also provides suitable courses of action, wherever necessary. For example, he states in the third paragraph - What is worrying, however, is that Orwell's diagnosis of "cloudy vagueness" and "pure wind" might seem to sanction an impotent dismissal. He then goes on to give a solution - Rather than waving it (political rhetoric) away as "pure wind", it is necessary to listen all the more closely to this stuff, because you need to bring the buried argument out into the open in order to defeat it. So the passage is a critical analysis. Choice D is the answer. Choice A is extreme and incorrect. The author does not dismiss Orwell's work as based on unsound premises. Choice B is not the agenda of the passage. Choice C goes

against the author's intention. The author does say at the end of the passage that Orwell should be the last person to be considered to be responsible for the custodianship of the language. Refer to the sentences [Orwell influenced a whole generation of incompetent style-guide composers; Orwell's own tip (Break any of these rules than say something barbarous); Orwell's own taste was dubious when applied to work of others). But Orwell did not claim that he was a custodian of good English. The features of "Good English" are not discussed. So the point of questioning Orwell's claim (which is absent) does not arise. So choice C is incorrect. Choice (D)

11. The third sentence of the second paragraph states that Orwell nods here by using the phrase "the Russian purges" descriptively himself: euphemising the show trials and mass executions as "purges" (purification). In the first paragraph, it is given that Orwell concluded, "Political language [...] is designed to make lies sound truthful and murder respectable, and to give an appearance of solidity to pure wind." So statement 'a' is apt. It has been given in the third paragraph of the passage that the political rhetoric "skivers" is a dysphemism. A dysphemism is an unpleasant or derogatory or harsh term. So statement 'b' is correct. Statement 'c' is not true as per the passage. Saying something is "blatantly humiliating" is not the same as "bad linguistic style". The author criticizes Orwell's writing style and says that even Orwell himself conceded at the end that style is not that important (His own taste was dubious). The author only says that content is important and the slovenly (negligent) use of words (which may hurt others) makes us have foolish thoughts. So unlike an euphemism (which hides unpleasant or harsh or offensive details), a dysphemism is harsh or humiliating. 'c' can be eliminated from the second sentence of the fourth para (..... what he perceives to be bad style are often outright ridiculous) and the last sentence of the penultimate para (influenced a whole generation of incompetent style – guide composers). In the last sentence of the third paragraph, the author mentions "buried argument" in the "pure wind".....which must be unearthed bylistening closely. The author says that one should expose the argument and target it or throw stones at it or find fault with it (in a negative sense). The word 'substance' given in statement 'd' is used in a positive sense to mean that there is justifiable substance (of value). So statement 'd' is not supported. So statements 'a' and 'b' are correct.

Choice (B)

12. The author has already addressed choice A in the third para. In the first sentence of the third para, it has been mentioned that Orwell's diagnosis of "pure wind" might seem to sanction an impotent dismissal. Also in the last sentence of the third para, it has been mentioned that "Rather than waving political rhetoric as 'pure wind', it is necessary to listen all the more closely to this stuff." So this question has already been answered. In the fifth paragraph, it has been mentioned that Orwell will sneer at anyone for "pretentious diction" for use of phrases of "foreign" origin. "cul de sac" (literally "back of the bag" in French) is an expression of French origin referring to a "dead end" and "status quo" is latin for "existing condition or state of affairs". Also "rectification of frontiers" (by forcibly ejecting people from their farms) has already been mentioned in the last sentence of the second para. This corresponds to "politically motivated misnaming" or "euphemising". Also it can be inferred that the "European countries' call to reassure the markets", is also a "euphemism" (as though holders of government bonds were trembling, paranoid little flowers who must be psychically coddled at all costs). So choice B has also been answered in the passage. Same is the case with choice D. (According to Orwell's linguistic xenophobia, there is no excuse for forming new words from Latin or Greek.....as given in the last sentence of the fifth paragraph. He is against the use of phrases of "foreign" origin and also mentions - If we strip the language down to what there is a "real need".....). Choice C would be the best question that would generate a response from the

author. In the last para, the author mentions that the writing tips that Orwell gives are all undone by the last: "Break any of these rules sooner than say anything outright barbarous." Orwell was silent about how anyone could judge whether what one has said was outright barbarous or not. One would want the author to answer this query and throw more light on it. Queries A, B and D have already been discussed by the author.

Choice (C)

13. The author gives a synopsis of Orwell's writing tips and makes an attempt to criticize Orwell's assault on political euphemism. The passage ends on a humorous note stating that inspite of Orwell's writing tips, one could still write "bad English". (One could collect tips of writing styles and not employ them in their writing). So choice B would be the best sentence to conclude the passage. The author seems to say that content is all that matters. As long as one's words do not hurt people, one need not excessively worry about style. The author is critical of Orwell for being very critical and making mistakes himself. Choice D cannot end the passage. Reasons for the goodwill of Orwell's work "Politics and the English Language" would need to be discussed, preferably in another paragraph or in the earlier (first) paragraph where the author refers to it as his most famous work. "Democracy" as given in choice C does not fit into the context even though it may be misconstrued with "freedom to follow rules". Choice A cannot end the passage. If at all, it can be inserted at the end of the fourth paragraph, after the sentence - Orwell was right that "the slovenliness of our language makes it easier for us to have foolish thoughts".

Choice (B)

14. The thrust of the passage is not that the idea of (and the intention behind) helping is to be criticized as such. The central idea is that 'helpers' need to be judicious with respect to relating the degree of concern and assistance to circumstances (as indicated in the use of 'calibrate it to complement'. The word 'euphemistic' is used to refer to the substitution of an agreeable expression for suggesting something unpleasant. In the sixth paragraph of the passage, the author states that "Parents and children have not cornered the market on these (helicopter) dynamics alone." A helicopter always hovers around. So choice B is the best answer. 'Euphemistic' refers to substituting a mild, indirect or vague term for one that is considered harsh, blunt or offensive. The other tones 'flippant' (frivolously disrespectful, shallow, or lacking in seriousness; characterized by levity), 'ambivalent' (uncertainty or indecisiveness or existence of opposing attitudes or feelings) and 'nostalgic' (a sentimental or wistful yearning for the happiness felt in a former place, time, or situation) are not correct.

Choice (B)

15. The author states that responsive, supportive relationships are the foundation of a healthy and productive life. One should help people achieve their goals without undermining their sense of personal accountability and motivation to achieve them. Refer to the second sentence of the fifth para - It seems that certain forms of help can dilute recipients' sense of accountability for their own success. Also refer to the last sentence of the ninth para - We should restrain our urge to help unless the recipient truly needs it, and even then, we should calibrate it to complement rather than substitute for the recipient's efforts. This makes statements 'c' and 'd' correct. The passage states that brawlers' self-control efforts must be appropriated when their self-control is compromised or when "help was most needed", which is when they are completely drunk and have lost their senses. So statement 'a' is correct. Statement 'e' can be ruled out. "bringing up the rear" is idiomatic usage for "marching at the back of the column". Here the training sergeant is not supporting at all. He is just hanging around to evacuate people who may collapse. He is there to just pick up the pieces (no support at all). So there is no question of calibrating the support or help as suggested in the passage. With reference to statement 'b' an instructor in a normal car will intervene only when there

is absolute need or the car is really out of control. In a car with dual controls, both the learner and the instructor can operate and the instructor may intervene even in cases of over-concern (or even when there are slight problems). So 'b' is correct. In conclusion, statements 'a', 'b', 'c' and 'd' are correct.

Choice (A)

16. (A) is not tenable as there is neither conflict nor reconciliation. (B) plays safe, but adds no value. Also 'qualifying a previously expressed point of view' is incorrect. (C) is vague, as no example follows and there is no challenge. (D) is true, as the opening para introduces the Enlightenment and contextualizes Pagden's book.

Thus (D) is correct

Choice (D)

17. It has been mentioned in the second paragraph that the Enlightenment is, unmistakably, a political tract for our time. It features here as the moment when the West not only embraced reason but also became cosmopolitan. Also a person changed from an "ignorant, unthinking, sentimentalist usually identified as a nationalist" to a person more rational and logical. So choice A can be eliminated. From the phrases in the second paragraph, "political decency as we may claim in dealing with other peoples", "inspires the internationalist passion for peace and progress" and from phrases in the third paragraph, "tolerant and forward-thinking", "involving us with one another as fellow citizens", "an attitude.....with which human beings are thought to be linked by mutual sympathy", one can narrow down on choice B as the answer. The Enlightenment is a single Europe-wide event and marks the moment when we abandoned religious superstition and advanced boldly into the light of reason. The Enlightenment was central and not incidental to creating a decent civilization. So choice C is incorrect.

Choice (B)

18. The author argues that Robespierre does not fit into Pagden's charitable Enlightenment agenda. The author mentions in the fifth paragraph that Pagden excludes Marxists and other revolutionaries. Both the author and Pagden seem to be of the view that those who professed to be ideal and be guided by imperatives of reason and/or intellectual and political ideology aren't practically the right examples. He then says that though Pagden excluded Robespierre and Marxists, he treated Hegel (who stated what Marx said in one way or another) with appropriate respect. So choice C is the answer. The word 'defining' means 'explaining substantially' or 'specifying distinctly'. (A) is not true. (B) is wrong, as Robespierre did not belong to Pagden's list. (D) is a matter of opinion.

Thus (C) is correct

Choice (C)

19. In the first paragraph, the passage introduces the Supreme Court's trimester framework which enshrine "a right of personal privacy". Blanket or statutory bans on abortion were unconstitutional. But the second paragraph highlights the restrictions and regulations which were enforced on abortionists. So the idea is that not even the Supreme Court can win the day. Refer to the penultimate sentence of the passage "..... make their argument legalistic and abstract, rather than concrete and inclusive". But it is how society can push for certain regulations in terms of what people think are right. The third paragraph of the passage is specific to this question. (.... how the left and right use courts). The left apparently obtained the verdict in its favour but there was a backlash which was so harsh that they could not consider it as a real victory. The right lost by the Supreme Court's decision but seem to use the perceived injury (of a loss) as a positive means to generate sympathy and understand that courts matter. The author then goes on to say that the legacy is unsalutary and not all contentious social issues can be talked about as rights to be disputed in courts. At the end of the day, it is not the Supreme Court's decision that wins the day but how people respond to it and effectively change or transform that decision for positive gains. So choice B is the answer.

Choice A is incorrect as it is not a consequence of the legacy of 'Roe vs Wade'. Choice D is incorrect as one cannot really speak of the verdict as a victory. Choice D is also a very general statement. Choice B is an opinion which could be true even earlier or outside of this case. It has been mentioned in the third paragraph that rights should not be subject to referendum and some civil war amendments were earlier rammed down or imposed. So choice C is not specific to the question. Choice (B)

20. We must give a balanced response. A woman could decide to end a pregnancy in the early stages, but subsequently maternal health and prolife policies can allow state intervention, as given in (B). (B) is also supported by the third sentence of the first paragraph – the "due process" clause of the 14th amendment contains "a concept of personal liberty" (and not the concept of personal liberty). (A) does not take a woman's agency into account. (C) does not mention state regulation in critical junctures of pregnancy. Nor is (D) qualified by regulations "reasonably related to maternal health". Besides, (C) and (D) make no mention of abortion being banned in later states of pregnancy.

Thus, (B) is the answer.

Choice (B)

21. Refer to the last sentence of the first para. Abortion is a personal choice for a woman (and her doctor) in the first trimester of pregnancy. It is regulated by states if the mother's health is at stake in the second trimester. Abortion is banned in the third trimester as it amounts to killing a foetus capable of living outside the womb. So (D) can be inferred. (A) is true only for the second trimester and not 'any stage of pregnancy'. (B) is not true, states can regulate abortion in the second trimester. (C) is incorrect. The Supreme Court upheld "a concept of personal liberty" and "a right of personal privacy (which included a woman's decision whether or not to terminate a pregnancy). Even though blanket or statutory bans on abortion were unconstitutional, the state can intervene and regulate abortion as explained above.

Thus, (D) is the answer.

Choice (D)

Solutions for questions 22 to 24:

Condition (V) says that exactly three men sat in the same numbered chairs as their wives \Rightarrow That these three men definitely wrote the chair number of their wives wrong. (As no person wrote the same number on the paper as the chair on which he was sitting).

From condition (iii) three men guessed the chair number of their wives correctly \Rightarrow These three persons are not sitting on the same numbered chairs as their wives.

As three men guessed correct and as three men are sitting in the same number chairs as their wives all those who guessed wrong must be sitting in the same numbered chairs as their wives ———(1)

The arrangement of the chairs will be as follows:

Chair No	1	2	3	4	5	6

North facing Men ↑
South facing Women ↓

As R is to the right of P and left of S, S must be to the right of P.
 \Rightarrow There are at least two persons to the left of P \Rightarrow P can't sit in chairs 1 and 2.

As P is sitting there places to the right of Q, P must sit in chair 3 and Q in chair 6. \Rightarrow R sits in chair 2 and S sits in chair 1.

The results so far can be tabulated as follows.

1	2	3	4	5	6
S	R	P			Q

↑
↓

From condition (iii) Q is the wife of C and from the information C – guessed his wife's chair number as 5. From (1) above C

must sit in the same numbered chair as his wife i.e, chair number 6.

Similarly from condition (iv), R is A's wife and A guessed the chair number 4 as his wife's chair (which is incorrect) \Rightarrow A is sitting in chair number 2.

In the question, D guessed the chair number as 6. From above C's wife is sitting in chair number 6. D guessed incorrectly and he must be sitting in the same numbered chair as his wife.

Thus , C, D are sitting in the same numbered chairs as their wives, and B, E, F guessed the chair number correctly.

As B, E, F guessed correctly B's wife is sitting in chair 4, E's wife in chair 1 and F's wife in chair 3.

As A' wife is in chair 2 and C' wife is in chair 6 D's wife must sit in chair 5 \Rightarrow D must sit in chair 5

Also B is not in chair 4, 5 is not in chair 1 and f is not in chair 3.

Thus the final arrangement will be as follows.

	1	2	3	4	5	6
B/F	A	B/E	E/F	D	C	
S	R	P	T/U	U/T	Q	
Husband	E	A	F	B	D	C

↑
↓

22. From the above table, if F is sitting behind B's wife, he must be in chair numbered 4, and that means B must be in chair numbered 1, which is behind E's wife.

Alternative Solution:

Once we conclude that B, E, F guessed correctly, they must be sitting behind one another's wives. Hence, if F is behind B's wife, then B must be behind E's wife.

Choice (A)

23. From the table both S and P did not sit in the same numbered chairs as their husbands.

Choice (D)

24. The wife of F sits in chair 3 \Rightarrow P is the wife of F.

Hence statement A is not definitely true

Either T or U can be the wife of D. Hence option (B) is not definitely true.

The wife of E sits in chair 1 \Rightarrow S is the wife of E

Hence, option (D) is not true and option (C) is definitely true.

Choice (C)

Solutions for questions 25 to 27:

From condition (i), the first rank in Communication skills and the third rank in Vision are scored by the same person and from condition (ii) Binay scored 3rd rank in Leadership. As no person scored the same rank in any two parameters. Binay, is not the person who scored the first rank in Communication skills ——(1)
From condition (iv), Dolly cannot be the person who secured the first rank in Communication skills. Also as Emran secured 3rd rank in Honesty, he cannot be the one who secured third rank in Vision \Rightarrow He is not the one who secured first rank in Communication ——(2)

From (1) and (2), either Anil or Chandu must have secured the first rank in Communication skills and third rank in Vision ——(3)

As Binay scored third rank in Leadership, he cannot be the one who scored first rank in Leadership. Dolly cannot be the one who scored first rank in Leadership as he did not score first rank in any attribute.

Emran secured third rank in Honesty \Rightarrow he did not secure second rank in Honesty \Rightarrow he didn't secure first rank in Leadership.

From above, the first rank in Leadership and second rank in Honesty must be secured by either Anil or Chandu ——(4)

From (3) and (4) we have two cases.

Case (i) Anil secures first rank in Communication skills and third rank in Vision \Rightarrow Chandu secured first rank in Leadership and second rank in Honesty.

Case (ii) Anil secures first rank in Leadership, second rank in Honesty \Rightarrow Chandu secured first rank in Communication skills and third rank in Vision.

In either case Emran didn't secure first rank in Leadership. Form condition (V) Emran secured first rank in either Leadership or Vision \Rightarrow Emran secured first rank in Vision.

The results obtained so far can be tabulated as follows.

Case (i)

Attribute Person	Honesty	Leadership	Communication	Vision
Anil			1	3
Binay		3		
Chandu	2	1		
Dolly				
Emran	3		2	1

From above Binay can secure first rank in neither Communication nor Vision \Rightarrow Binay must have scored first rank in Honesty.

A there are four attributes, at least four people should score 5th rank, in one attribute each \Rightarrow Emran must score 5th rank in Leadership.

In the above table, Binay must have scored second rank in either Communication skills or Vision. As, Emran already scored 2nd rank in Communication skills, Binay must have scored 2nd rank in Vision and 4th rank in Communication.

The results obtained so far can be tabulated as follows.

Attribute Person	H	L	C	V
A			1	3
B	1	3	4	2
C	2	1		
D				
E	3	5	2	1

From the above table, Dolly must score 2nd rank in leadership \Rightarrow Anil must score 4th rank in leadership.

From the table, Anil cannot score either 1st or 2nd or 3rd ranks in Honesty and from above he cannot score 4th rank in Honesty \Rightarrow Anil scores 5th rank in Honesty \Rightarrow Dolly scores 4th rank in Honesty.

From above Dolly cannot score 2nd or 4th ranks in Vision and from the table he cannot score 3rd rank in Vision \Rightarrow Dolly scores 5th rank in vision \Rightarrow Dolly scored 3rd rank in Communication skills and Chandu scored 4th rank in Vision and 5th rank in Communication skills.

Thus the final arrangement will be as follows.

Attribute person	H	L	C	V
A	5	4	1	3
B	1	3	4	2
C	2	1	5	4
D	4	2	3	5
E	3	5	2	1

Similarly for case (ii), the arrangement will be as follows.

Case (ii)

Attribute person	H	L	C	V
A	2	1	5	4
B	1	3	4	2
C	5	4	1	3
D	4	2	3	5
E	3	5	2	1

25. In both the cases Emran didn't secure 4th rank in any of the subjects.
Choice (A)

26. Apart from Anil and Chandu, the ranks secured by the other three persons are the same in both the cases. Hence, the ranks of three persons can be uniquely determined.
Choice (D)

27. Chandu secured 4th rank in vision in case (i), in which Anil secured 5th rank in Honesty. Hence, option (A) is not definitely false.
Chandu secured 5th rank in Communication skills in case (i) in which Anil secured 5th rank in Honesty. Hence option (B) is definitely false.

Anil secured 1st rank in Leadership in case (ii), in which Chandu secured 4th rank in Leadership.
Hence, option (C) is not definitely false.

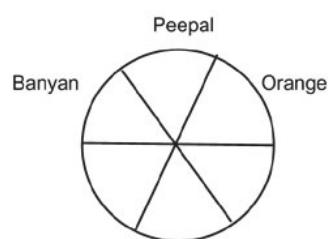
Anil secured 2nd rank in Honesty in case (ii), in which Chandu secured the third rank in vision. Hence option (D) is not definitely false.
Choice (B)

Solutions for questions 28 to 30:

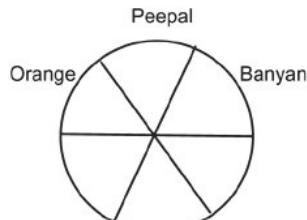
From condition (ii) Banyan, Peepal and Orange trees are in three continuous sectors \Rightarrow Neem, Guava, and Mango trees are opposite to those trees in any order.

The arrangement of Banyan, Peepal and Orange trees can be as follows.

Case (i)



Case (ii)

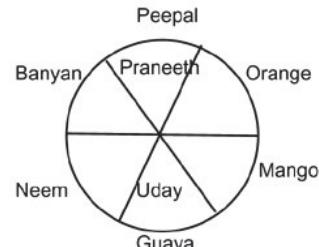


From condition (iii), the Mango tree is adjacent to the Orange tree \Rightarrow the Mango tree is opposite Banyan tree.

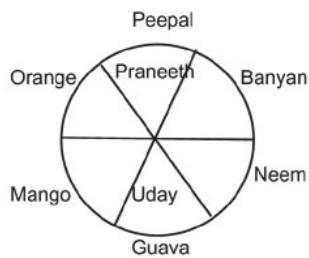
From condition (iv), Uday's sector must be the one either opposite the Peepal tree or opposite the Orange tree \Rightarrow Praneeth's sector is either the one with the Peepal tree or the one with the Orange tree.

As the sector with Orange tree is adjacent to the sector with Mango tree, from condition (i), this cannot be the sector of Praneeth \Rightarrow Praneeth's sector is the one with Peepal tree and Uday's sector is opposite to Peepal tree \Rightarrow the Mango tree is opposite to the Banyan tree.

The results obtained so far are as follows.



Case (ii)

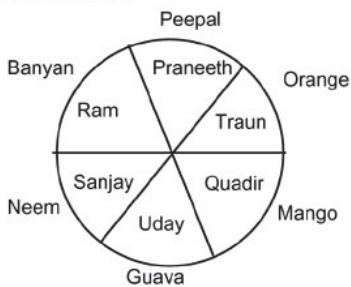


From condition (iv) Sanjay should purchase the sector with either Mango or Neem tree. However, from condition (iii), Sanjay did not purchase the sector with Mango tree \Rightarrow Sanjay purchased the sector with Neem tree.

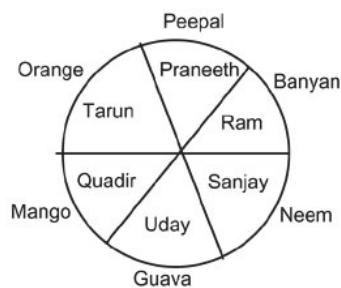
From condition (i), and above the sectors with Banyan and Orange trees are not the costliest ones. As Quadir paid the highest price, he must have purchased the plot with Mango tree.

From condition (v) Quadir's sector is adjacent to Tarun's sector \Rightarrow Tarun's sector is the one with Orange tree.
 \Rightarrow Ram's sector is the one with Banyan tree. Thus the final arrangement is as follows.

Case (i)



Case (ii)



28. From the diagram Quadir, who paid the highest price purchased the sector with Mango tree. Choice (A)
29. From the above, Ram purchased the sector with Banyan tree. Choice (B)
30. The correct pairs from the above diagram are Praneeth – Peepal, Neem – Sanjay and Tarun – Orange. Hence, only (ii) is correctly matched. Choice (C)

Difficulty level wise summary - Section II	
Level of Difficulty	Questions
Very Easy	–
Easy	–
Medium	1, 2, 6, 10, 13, 14, 16, 20, 21, 22, 23, 24, 28, 29, 30
Difficult	3, 4, 7, 8, 9, 11, 15, 17, 18, 19, 25, 26, 27
Very Difficult	5, 12