

Detailed explanation of XAT- 2016

SET A

SECTION-A

VERBAL AND LOGICAL ABILITY

1.	<p>Which of the following options best captures the relationship similar to INSPECT: VIVISECT?</p> <p>A. Enquire: Observe B. Inquire: Explore C. Investigate: Interrogate D. Query: Survey E. Question: Respond</p>	B
	<p>The closest meaning of inspection is to check or examine. Vivisection is surgical operation on live animals for the purpose of research. Hence, the meaning of vivisection can be extended to sharp and detailed analysis.</p> <p>The relationship between inspect and vivisect is the same as between checking/examining/finding and detailed analysis. One has to check/examine before one conducts a detailed analysis i.e. vivisect. Vivisection shall therefore come after inspection. Inspection is more superficial/less intense than vivisection.</p> <p>From the options available, to inquire is to seek information and ask a question while to explore is to go further and engage in deeper inquiry/ deeper experience. Therefore option B is the right answer.</p> <p>In Option C, both investigate and interrogate are nearly similar, though good interrogation (preliminary) leads to good investigation (detailed) and not the other way round. Investigation can also be defined as carrying out a research or study which is deeper than interrogation and which is closer to vivisect than inspect.</p>	
2.	<p>Read the following poem and answer the question that follows:</p> <p><i>I sought a soul in the sea And found a coral there Beneath the foam for me An ocean was all laid bare.</i></p> <p><i>Into my heart's night Along a narrow way I groped; and lo! the light, An infinite land of day.</i></p> <p>Which of the following would best capture the ESSENCE of the poem above?</p> <p>A. What lies 'outside' is always deceptive. B. Pursue the narrow path and avoid the broadways. C. External search is futile; explore the inner space for answers. D. Heart's pathways are broad and clear to find the destination. E. Light offers sight and insight.</p>	C
	<p>A only captures the first part of the poem. B talks only about the path and not about the destination. C is the right answer because it answers the first question i.e. exploring inner space raised in stanza 2 and the futility of external search mentioned in first stanza. D is wrong because heart's pathways are narrow according to the poem. E is wrong as the poem is about "inner journey" and not about "light".</p>	

3.	<p>“Assumptions are analogous to the basic ingredients in a gourmet recipe. Only the final product of the recipe dictates whether the ingredients suffice.....”</p> <p>Which of the following is ANALOGOUS to the statement above?</p> <p>A. Good wine needs no advertisement! B. The apple never falls far from the tree! C. All is well that ends well! D. As you sow, so shall you reap! E. The Proof of the pudding is in the eating!</p>	E
	<p>The statement indicates that outcome gives an indication of input. Except E no other statement focuses on outcome being an indication of input. For example C is wrong as it says that if output is good, input is immaterial.</p> <p>In A there is no mention of input. There is only a mention of outcome and promotion of the same.</p> <p>B is wrong as it talks about how two related events occur together.</p> <p>D talks about how input determines output. So the logic is exactly opposite of the statement.</p> <p>E talks about how outcome is the ultimate proof of input and is hence the correct answer.</p>	
4.	<p>The FIRST and the LAST sentences of the paragraph are numbered 1 & 6. The others, labelled as P, Q, R and S are given below:</p> <p>1. Suppose I know someone, Smith. P. One day you come to me and say: “Smith is in Cambridge.” Q. I inquire, and find you stood at Guildhall and saw at the other end a man and said: “That was Smith.” R. I’d say: “Listen. This isn’t sufficient evidence.” S. I’ve heard that he has been killed in a battle in this war.</p> <p>6. If we had a fair amount of evidence he was killed I would try to make you say that you’re being credulous.</p> <p>Which of the following combinations is the MOST LOGICALLY ORDERED?</p> <p>A. 1SPQR6 B. 1RSPQ6 C. 1PRSQ6 D. 1QSRP6 E. 1RQPS6</p>	A
	<p>R is a refutation of something and it can refute Q but not P. Because P is generic and therefore difficult to refute while Q can be refuted easily. Q is an attempt to specify P. R is a statement that refutes Q and not P. Therefore SPQR is the most logical order making A the correct answer.</p>	
5.	<p>The FIRST and the LAST sentences of the paragraph are numbered 1 & 6. The others, labelled as P, Q, R and S are given below:</p> <p>1. The word “symmetry” is used here with a special meaning, and therefore needs to be defined. P. For instance, if we look at a vase that is left-and-right symmetrical, then turn it 180° around the vertical axis, it looks the same. Q. When we have a picture symmetrical, one side is somehow the same as the other side.</p>	D

	<p>R. When is a thing symmetrical – how can we define it? S. Professor Hermann Weyl has given this definition of symmetry: a thing is symmetrical if one can subject it to a certain operation and it appears exactly the same after operation.</p> <p>6. We shall adopt the definition of symmetry in Weyl’s more general form, and in that form we shall discuss symmetry of physical laws.</p> <p>Which of the following combinations is the MOST LOGICALLY ORDERED?</p> <p>A. 1PQRS6 B. 1QRSP6 C. 1RQPS6 D. 1RQSP6 E. 1SPQR6</p>	
	<p>R raises two questions: The first part is answered by “Q (When is a thing symmetrical?) and the second by S (How can we define it?). Q and S therefore should follow R. P illustrates what is defined in S i.e. something that looks exactly the same after an operation on it. So P after S provides the logical order. Therefore option D is the correct answer.</p>	
6.	<p>In recent past, Indian football team has lost most of the matches in international football tournaments. The most successful coaches in Indian club football tournaments are from Latin American countries. In most of the Latin American countries, football is more popular sport than cricket.</p> <p>From the passage above, choose the correct option:</p> <p>A. It can be DEFINITELY concluded that “In India, cricket is more popular than football”. B. It can be DEFINITELY concluded that “Most Latin American countries are successful at football”. C. It can be DEFINITELY concluded that “In recent past, coaches of Indian football teams are not from Latin America”. D. It can be DEFINITELY concluded that “European football coaches are less successful than their Latin American counterparts for Indian national team”. E. It cannot be DEFINITELY concluded that “The more popular a sport the better the chance of producing a successful coach in that sport”.</p>	E
	<p>A is incorrect as no conclusions can be drawn from cricket from the information provided. B is wrong because “popularity” may not imply success, as some of the most popular teams may not be most successful. C is incorrect since Indian football team and Indian football clubs are different and cannot be compared. D is false as we do not have any data on coaches for Indian national team. E is erroneous because the popularity of a sport in a country need not definitely imply success and therefore may not generate a successful player or for that matter a coach. Therefore the correct answer is Option E.</p>	
7.	<p>Choose the best pronunciation of the word, <i>Sobriquet</i>, from the following options:</p> <p>A. soh-bruh-key B. suub-rry-ka C. sob-bee-ri-kwet D. soub-rick-kaat E. Sobb-rik-kwet</p>	A

	It is pronounced soo-bri or bruh and the last syllable rhymes with “day” or “pet” and therefore A is the correct answer.	
8.	<p>Consider the two related statements below:</p> <p>Statement I: Offices and positions for the marginalized sections should be open to those with greater savings among them.</p> <p>Statement II: Offices and positions must be open to everyone based on the principle of <i>fair opportunity</i>.</p> <p>Which of the following is true?</p> <p>A. Statement I assumes that the marginalized sections are incapable of saving.</p> <p>B. Statement II assumes that all citizens are equally exposed to all opportunities.</p> <p>C. Statement II contradicts meritocracy.</p> <p>D. Statement II assumes that all citizens are equally intelligent.</p> <p>E. Statement I assumes that the marginalized sections always depend on subsidies.</p>	B
	<p>A: It cannot be right as nowhere is it mentioned that marginalised sections are incapable of saving.</p> <p>B: Statement 2 would make sense only when all sections of society are equally exposed to all opportunities. Else, Statement 2 would be less relevant as giving equal opportunities would be of no use if people are not exposed to equal opportunities. Hence B is the right answer.</p> <p>C: Statement 2 assumes that everyone should be given equal opportunity but it does not say everyone is equal. This is consistent with “merit” and not against “merit”.</p> <p>D: Statement 2 assumes that only differentiator is the diligence of the citizens.</p> <p>E: Statement 1 assumes that the marginal sections are laid back and rely on their entitlements.</p> <p>There is an underlying belief in the statement 2 that contradicts statement 1. The two statements (1 and II) contradict each other especially when talking about “marginalised sections”. Statement 1 can hold true if statement 2 is not applicable to the “marginalised sections”.</p>	
9.	<p>This season will pass. The Prime Minister may not win Lok Sabha elections, or she may; she may not continue as Prime Minister, or she may. The country will survive whatever the texture of politics in this decade or the next.</p> <p>Which of the following, IF TRUE, will BEST reinforce the author’s view?</p> <p>A. The survival of any Prime Minister is dependent on the country’s economic growth.</p> <p>B. The country has a vibrant young working population.</p> <p>C. The survival of the country depends on a dynamic, growth-oriented Prime Minister, not on the texture of politics.</p> <p>D. The previous season had also witnessed similar political uncertainty.</p> <p>E. The survival of the Prime Minister is dependent on the political texture of the country.</p>	D
	<p>The core argument of the author is that the political texture (politics or the office of the prime minister) and survival of the country are not related.</p> <p>The country’s survival is in “auto pilot mode”, according to the author.</p> <p>Except option D, the others say nothing about this “auto pilot mode”</p>	

	Option B can be a possible option to strengthen the author’s view but it can be only one of the ways the country can be on “auto pilot”.	
10.	<p>The subject of this book is <i>knavery, skulduggery, cheating, betrayal, unfairness, crime, sneakiness, malingering, cutting corner, immorality, dishonesty, betrayal, graft, wickedness, and sin.</i></p> <p>Which of the following options best captures ALL the italicized words above?</p> <p>A. Aggressive behaviours B. Illegal behaviours C. Deviant behaviours D. Banned behaviours E. Vetoed behaviours</p>	C
	Dishonesty, betrayal, sin, unfairness may not be aggressive behaviours. B is wrong as unfairness, immorality, cheating may not be corrupt and/or “illegal”. Similarly knavery, cheating, cutting corners, sin etc. may not be banned. E is wrong as all of them may not be vetoed....hence the right answer is C.	
11.	<p>Read the following conversation:</p> <p>OINOS: I can comprehend you thus far—that certain operations of what we term Nature, or the natural laws, will, under certain conditions, give rise to that which has all the appearance of creation. Shortly before the final overthrow of the earth, there were, I well remember, many very successful experiments in what some philosophers were weak enough to denominate the creation of animalculae.</p> <p>AGATHOS: The cases of which you speak were, in fact, instances of the secondary creation—and of the only species of creation which has ever been, since the first word spoke into existence the first law.</p> <p>Which of the following options CANNOT be DEFINITELY inferred based on the above conversation?</p> <p>A. Agathos was explaining something related to creation to Oinos. B. At the time of conversation there was nothing called Earth. C. The creation of animalculae is a natural law. D. Natural laws are creations of philosophers. E. Law is a spoken word.</p>	D
	<p>A can be definitely interpreted from the passage since Oinos admits to Agathos that Agathos was talking about “creation”.</p> <p>B also can be interpreted (Shortly before the final overthrow of the earth).</p> <p>C can be definitely interpreted from Oinos’ statement.</p> <p>E (from the last line of the passage) can be interpreted.</p> <p>Only D cannot be definitely interpreted, since the passage does not suggest that natural laws are the creations of philosophers.</p>	
12.	... there is a degree of convergence in the definition of trust which can be summarized as follows: Trust is a particular level of the subjective probability with which an agent assesses that another agent or group of agents will perform a particular action. When we say we trust	B

	<p>someone or that someone is trustworthy, we implicitly mean that the probability that he will perform an action that is beneficial to us ...</p> <p>Which of the following statements BEST COMPLETES the passage above?</p> <p>A. is high enough for us to find out if he will cheat us. B. is high enough for us to consider engaging in some form of cooperation with him. C. is low enough for him not to engage in negative behaviour against us. D. is high enough for us not to build defences against his possible aggression. E. is low enough for us to attack him.</p>	
	<p>As the last sentence ends with trust, which is a positive word the phrases that follow should also be positive. All options A, C, D, E have ‘something negative’ that we normally do not associate with trust leaving B to be the right answer.</p>	
	<p>Analyse the following passage and provide appropriate answers for the questions 13-16 that follow:</p>	
	<p>An effective way of describing what interpersonal communication <i>is</i> or <i>is not</i>, is perhaps to capture the underlying beliefs using specific game analogies.</p> <p>Communication as Bowling: The bowling model of message delivery is probably the most widely held view of communication. I think that’s unfortunate. This model sees the bowler as the sender, who delivers the ball, which is the message. As it rolls down the lane (the channel), clutter on the boards (noise) may deflect the ball (the message). Yet if it is aimed well, the ball strikes the passive pins (the target audience) with a predictable effect. In this one-way model of communication, the speaker (bowler) must take care to select a precisely crafted message (ball) and practice diligently to deliver it the same way every time. Of course, that makes sense only if target listeners are interchangeable, static pins waiting to be bowled over by our words—which they aren’t.</p> <p>This has led some observers to propose an interactive model of interpersonal communication.</p> <p>Communication as Ping-Pong: Unlike bowling, Ping-Pong is not a solo game. This fact alone makes it a better analogy for interpersonal communication. One party puts the conversational ball in play, and the other gets into position to receive. It takes more concentration and skill to receive than to serve because while the speaker (server) knows where the message is going, the listener (receiver) doesn’t. Like a verbal or nonverbal message, the ball may appear straightforward yet have a deceptive spin.</p> <p>Ping-Pong is a back-and-forth game; players switch roles continuously. One moment the person holding the paddle is an initiator; the next second the same player is a responder, gauging the effectiveness of his or her shot by the way the ball comes back. The repeated adjustment essential for good play closely parallels the feedback process described in a number of interpersonal communication theories.</p> <p>Communication as Dumb Charades The game of charades best captures the simultaneous and collaborative nature of interpersonal communication. A charade is neither an action, like bowling a strike, nor an interaction, like a rally in Ping-Pong. It’s a <i>transaction</i>.</p> <p>Charades is a mutual game; the actual play is cooperative. One member draws a title or slogan from a batch of possibilities and then tries to act it out visually for teammates in a silent mini drama. The goal is to get at least one partner to say the exact words that are on the slip of paper. Of course, the actor is prohibited from talking out loud.</p> <p>Suppose you drew the saying “God helps those who help themselves.” For <i>God</i> you might try folding your hands and gazing upward. For <i>helps</i> you could act out offering a helping</p>	

	<p>hand or giving a leg-up boost over a fence. By pointing at a number of real or imaginary people you may elicit a response of <i>them</i>, and by this point a partner may shout out, “God helps those who help themselves.” Success.</p> <p>Like charades, interpersonal communication is a mutual, on-going process of sending, receiving, and adapting verbal and nonverbal messages with another person to create and alter the images in both of our minds. Communication between us begins when there is some overlap between two images, and is effective to the extent that overlap increases. But even if our mental pictures are congruent, communication will be partial as long as we interpret them differently. The idea that “God helps those who help themselves” could strike one person as a hollow promise, while the other might regard it as a divine stamp of approval for hard work. Dumb Charade goes beyond the simplistic analogy of bowling and ping pong. It views interpersonal communications as a complex transaction in which overlapping messages simultaneously affect and are affected by the other person and multiple other factors.</p>	
13.	<p>The meaning CLOSEST to ‘interchangeable’ in the ‘Communication as Bowling’ paragraph is:</p> <p>A. Complementary B. Contiguous C. Conforming D. Compatible E. Comparable</p>	E
	<p>Here “interchangeable” is used in the context of listeners, who can be swapped as per the metaphor.</p> <p>Complementary is used when two or more entities together complete or improve the picture (for e.g. razor and blade, where both together make a shave), contiguous is used in a ‘spatial’ sense to denote close entities, conforming means compliant, compatible is closer to complementary and conforming; comparable means “similar”...If something is comparable, it is interchangeable, hence E is the correct answer.</p>	
14.	<p>Which of the following options is the CLOSEST to the necessary condition of communication:</p> <p>A. Threshold overlap of shared images B. Simultaneous exchange C. Ability to stimulate affect D. Ability to enact a drama E. Ability to elicit a response</p>	A
	<p>According to the passage the minimum necessary condition for successful communication is the overlap of images between the interlocutors (“Communication between us begins when there is some overlap between two images”). Therefore Option A is the correct answer.</p> <p>Simultaneous exchange is a result of threshold overlap of shared images. Simultaneous exchange (option B) may not imply communication if there is no overlap of images and without overlap the necessary condition is not met. The same argument applies to Options C, D and E.</p>	

15.	<p>The two inherent LIMITATIONS of Ping-Pong as a metaphor for communication are:</p> <p>A. It is governed by conventions with possibility for appeal; it has clear rules. B. The operating model is win-lose because only one individual or team can win; the receiver can always predict the spin. C. The number of players is limited as very few can be meaningfully engaged at a time; the rules of the game are fixed by the regulators. D. It demands more skills of the receiver than of the speaker; it is as passive as bowling. E. Real life communications is like Dumb Charade with multiple players; there are multiple balls used in Dumb Charade.</p>	C
	<p>In option A both statements record the positives of Ping-Pong as a metaphor. In option B the first statement is a limitation and the second statement is incorrect. In option C the first statement is a limitation and the second statement is a limitation of all three metaphors. In option D, the first statement is correct but the second statement is incorrect as Ping-Pong is interactive. In option E, both statements are unrelated to Ping-Pong as a metaphor. Therefore C is the correct answer.</p>	
16.	<p>Action, interaction and transaction is CLOSEST to:</p> <p>A. Advertising, Buyer negotiating with a seller, Bidding for a player in Indian Premier League. B. Preparing an election manifesto, Addressing a public gathering, Engaging in door to door canvassing. C. Preparing for MBA entrance exam, Writing the MBA entrance exam, Facing an interview for business school. D. Applying for learner licence, Negotiating with a driving school, Driving a Car. E. Negotiating overseas posting, Applying for visa, Undertaking a journey.</p>	A
	<p>A,I,T A,A,I A,A,I A,I,A I,A,A A=Action, I=Interaction and T=Transaction. Hence the best option is A.</p>	
	<p>Analyse the following passage and provide appropriate answers for the questions 17-19 that follow:</p>	
	<p>Advances in economic theory in the 1970s and 1980s illuminated the limits of markets; they showed that unfettered markets do not lead to economic efficiency whenever information is imperfect or markets are missing (for instance, good insurance markets to cover the key risks confronting individuals). And information is always imperfect and markets are always incomplete. Nor do markets, by themselves, necessarily lead to economic efficiency when the task of a country is to absorb new technology, to close the “knowledge gap”: a central feature of development. Today, most academic economists agree that markets, by themselves, do not lead to efficiency; the question is whether government can improve matters.</p> <p>While it is difficult for economists to perform experiments to test their theories, as a chemist or a physicist might, the world provides a vast array of natural experiments as dozens of countries try different strategies. Unfortunately, because each country differs in its history</p>	

	and circumstances and in the myriad of details in the policies – and details do matter – it is often difficult to get a clear interpretation. What is clear, however, is that there have been marked differences in performance, that the most successful countries have been those in Asia, and that in most of the Asian countries, government played a very active role. As we look more carefully at the effects of particular policies, these conclusions are reinforced: there is a remarkable congruence between what economic theory says government should do and what the East Asian governments actually did. By the same token, the economic theories based on imperfect information and incomplete risk markets that predicted that the free flow of short-term capital – a key feature of market fundamentalist policies – would produce not growth but instability have also been borne out.	
17.	<p>“...whether government can improve matters”. Here ‘matters’ indicates</p> <p>A. Economic efficiency B. Information imperfectness C. Knowledge gaps D. Good insurance markets E. Incomplete risk markets</p>	A
	<p>Refer last line of the first paragraph of passage viz. “Today, most academic economists agree that markets, by themselves, do not lead to efficiency; the question is whether government can improve matters.”</p> <p>Option A therefore is the correct answer.</p>	
18.	<p>Which of the following options CANNOT be inferred from the above passage?</p> <p>A. Free flow of short-term capital might fail to ensure economic growth. B. Insurance market is a proof that ‘markets, by themselves, do not lead to efficiency’. C. It is difficult to interpret the success of economic policies of Asian countries. D. Technology can impede market efficiency. E. State intervention and imperfect information can never go hand-in-hand.</p>	E
	<p>Option A can be interpreted as it is clearly mentioned in the last line of the passage. Option B can be interpreted from the first paragraph of the passage. Option C can be interpreted from the middle portion of the second paragraph of the passage. Option D can be interpreted from the first paragraph of the passage (second last line of the first paragraph). Option E cannot be interpreted since there is no mention in the passage that state intervention and imperfect information can never go hand in hand. Option E therefore is the correct answer.</p>	
19.	<p>Which of the following statements BEST captures the ESSENCE of the two paragraphs in the above passage?</p> <p>A. Paragraph I and Paragraph II are parallel arguments that are unrelated. B. Paragraph I describes markets in general whereas Paragraph II describes market failures in Asian economies in particular. C. Paragraph I explains why markets fail. Paragraph II spells out why market based economic theories fail to explain success of Asian economies. D. Paragraph I raises question and Paragraph II answers it. E. Paragraph I states an economic theory and Paragraph II cites a natural experiment to disprove it.</p>	C
	<p>First paragraph explains why markets fail. Paragraph II discusses a natural experiment wherein market driven economic theories fail to explain success of Asian economies.</p>	

	<p>Option C is the right answer based on the above rationale. Option A is hence wrong since both the paragraphs are related. Option B is wrong since Para I does not describe markets in general but market failure in particular. Option D is factually correct but raising and answering a question cannot be the essence of the passage. Moreover while the first paragraph raises a question “can government improve matters”, the second paragraph goes beyond answering the question to discuss the failure of market based economic theories in explaining success of Asian economies.</p> <p>Option E is wrong since para I discusses the failure of an economic theory rather than stating it, and paragraph II does not disprove/prove any theory but shows some support for government intervention.</p>	
	Analyse the following passage and provide appropriate answers for the questions 20-23 that follow:	
	<p>The base of Objectivism according to Ayan Rand is explicit: “Existence exists—and the act of grasping that statement implies two corollary axioms: that something exists which one perceives and that one exists possessing consciousness, consciousness being the faculty of perceiving that which exists.”</p> <p>Existence and consciousness are facts implicit in every perception. They are the base of all knowledge (and the precondition of proof): knowledge presupposes something to know and someone to know it. They are absolutes which cannot be questioned or escaped: every human utterance, including the denial of these axioms, implies their use and acceptance.</p> <p>The third axiom at the base of knowledge—an axiom true, in Aristotle’s words, of “being qua being”—is the Law of Identity. This law defines the essence of existence: to be is to be something, a thing is what it is; and leads to the fundamental principle of all action, the law of causality. The law of causality states that a thing’s actions are determined not by chance, but by its nature, i.e., by what it is.</p> <p>It is important to observe the interrelation of these three axioms. Existence is the first axiom. The universe exists independent of consciousness. Man is able to adapt his background to his own requirements, but “Nature, to be commanded, must be obeyed” (Francis Bacon). There is no mental process that can change the laws of nature or erase facts. The function of consciousness is not to create reality, but to apprehend it. “Existence is Identity, Consciousness is Identification.”</p>	
20.	<p>Which of the following is DEFINITELY CORRECT according to the passage:</p> <p>A. Only what can be perceived exists. B. What exists is perceived. C. All that exists does not have consciousness. D. Consciousness makes perception of being possible. E. Something to be known and someone to know are the <i>conditio sine qua non</i> for existence.</p>	D
	<p>A is wrong as perception helps to capture existence and all existence may not be perceived. B is wrong since there are entities that exists which may not be perceived. C is wrong because all that exist can have consciousness. D is the right answer (“consciousness being the faculty of perceiving that which exists”). E is wrong since “something to be known” and “someone to know” are two presuppositions of knowledge and not of existence.</p>	
21.	<p>Which of the following is the ESSENCE of ‘The law of Causality’?</p> <p>A. To be is to be something; ‘being qua being’.</p>	E

	<p>B. Wishing to become something else denies the nature of that being.</p> <p>C. The law of identity is the same as the law of causality.</p> <p>D. Essence of existence.</p> <p>E. Actions of a being are determined by its nature.</p>	
	<p>Law of causality means that change is possible (third para, last line “thing’s actions are determined not by chance but by its nature) but only after knowing its nature and hence E is the right answer.</p>	
22.	<p>Which of the following can be best captured as ‘Identity’ and ‘Identification’?</p> <p>A. College as identity; perception of cultural events as identification.</p> <p>B. Twitter as identity; perception of Twitter as identification.</p> <p>C. Government as identity; perception of taxation of citizens as identification.</p> <p>D. Marriage as identity; perception of children as identification.</p> <p>E. MBA as identity; perception of campus placement as identification.</p>	B
	<p>Identification is the process by which one identifies, ie. Identity is perceived. Option B is correct as perception of Twitter is the process by which one identifies that Twitter exists.</p> <p>All others are indirect ways of identification with the identity given in the first part of the options.</p> <p>For e.g. perception of children results in identifying parenthood and not marriage. Similarly, perception of taxation of citizen results in the identification of taxation and not government.</p>	
23.	<p>The author would interpret Francis Bacon’s “Nature, to be commanded, must be obeyed” as:</p> <p>A. Reality should not to be modified or escaped but faced.</p> <p>B. Man’s existence depends on nature’s whims.</p> <p>C. Essentially and objectively nature is superior to humans.</p> <p>D. Obstacles are better circumvented than confronted.</p> <p>E. Before channelling nature one must first comply with it.</p>	E
	<p>Option E is the correct answer. This is the law of causality, which states that change can take place only after understanding nature.</p>	
	<p>Analyse the following passage and provide appropriate answers for the questions 24-26 that follow:</p>	
	<p>Each piece, or part, of the whole of nature is always merely an approximation to the complete truth, or the complete truth so far as we know it. In fact, everything we know is only some kind of approximation, because we know that we do not know all the laws as yet. Therefore, things must be learned only to be unlearned again or, more likely, to be corrected.</p> <p>The principle of science, the definition, almost, is the following: The test of all knowledge is experiment. Experiment is the sole judge of scientific "truth." But what is the source of knowledge? Where do the laws that are to be tested come from? Experiment, itself, helps to produce these laws, in the sense that it gives us hints. But also needed is imagination to create from these hints the great generalizations—to guess at the wonderful, simple, but very strange patterns beneath them all, and then to experiment to check again whether we have made the right guess. This imagining process is so difficult that there is a division of labour in physics: there are theoretical physicists who imagine, deduce, and guess at new laws, but do not experiment; and then there are experimental physicists who experiment, imagine, deduce, and guess.</p> <p>We said that the laws of nature are approximate: that we first find the "wrong" ones, and then we find the "right" ones. Now, how can an experiment be "wrong"? First, in a trivial way: the apparatus can be faulty and you did not notice. But these things are easily fixed and checked back and forth. So without snatching at such minor things, how can the results of an</p>	

	<p>experiment be wrong? Only by being inaccurate. For example, the mass of an object never seems to change; a spinning top has the same weight as a still one. So a "law" was invented: mass is constant, independent of speed. That "law" is now found to be incorrect. Mass is found to increase with velocity, but appreciable increase requires velocities near that of light. A true law is: if an object moves with a speed of less than one hundred miles a second the mass is constant to within one part in a million. In some such approximate form this is a correct law. So in practice one might think that the new law makes no significant difference. Well, yes and no. For ordinary speeds we can certainly forget it and use the simple constant mass law as a good approximation. But for high speeds we are wrong, and the higher the speed, the more wrong we are.</p> <p>Finally, and most interesting, philosophically we are completely wrong with the approximate law. Our entire picture of the world has to be altered even though the mass changes only by a little bit. This is a very peculiar thing about the philosophy, or the ideas, behind the laws. Even a very small effect sometimes requires profound changes to our ideas.</p>	
24.	<p>Which of the following options is DEFINITELY NOT an approximation to the complete truth?</p> <p>A. I know that I know. B. I know that I do not know. C. I know what I know. D. I know what I do not know. E. I know that others do not know.</p>	D
	<p>A, B, C and E can be known with some errors. i.e., in each of the four options there is an approximation. In option D there is no way somebody can know what he/she doesn't know. This is an impossible situation.</p> <p>Example: Somebody says "I do not know quantum mechanics." But he/she cannot say what quantum mechanics is and what in quantum mechanics he/she does not know.</p> <p>Hence option D is the correct answer.</p>	
25.	<p>Consider the two statements from the passage:</p> <p>Statement I: The mass of an object never seems to change. Statement II: Mass is found to increase with velocity.</p> <p>Which of the following options CANNOT be concluded from the above passage?</p> <p>A. Both statements I and II are approximation to the complete truth. B. Both statements I and II are complete truth so far as we know. C. Statement I is an approximation to the complete truth but Statement II is complete truth. D. Statement I reveals that experimental physicists who imagine, deduce, and guess are philosophically wrong. E. Statement II shows that theoretical physicists can pinpoint the shortcomings of experimental physicists.</p>	E
	<p>Option A can be concluded as TRUE. In Option B, Statements I can be concluded as FALSE. In Option C, Statement II can be concluded as FALSE. Option D can be concluded TRUE because we all can be philosophically wrong and experimental physicists are amongst "us". Option E cannot be concluded as nowhere it is mentioned that theoretical physicist can pinpoint shortcoming of experimental physicists. In other words, this conclusion on Statement II cannot be definitely arrived at.</p>	

	Hence option E is the correct answer.	
26.	<p>'Big Bang' is a popular theory related to the origin of the universe. It states that the universe was the outcome of a big bang that released enormous energy.</p> <p>Which of the following is the MOST PROBABLE inference about the big bang theory?</p> <p>A. Big Bang Theory was first proposed by experimental physicists. B. Big Bang Theory was first proposed by theoretical physicists. C. Big Bang Theory was first proposed by experimental physicists and then deduced by theoretical physicists. D. Philosophers got the Big Bang theory wrong. E. Big Bang theory is not an approximation of the complete truth.</p>	B
	<p>Experimental physicists could not have experimented Big Bang as they were not have been present at the time of the event. It could have only been first imagined or deduced. Then only there is a possibility of direct experiments. Hence, MOST LIKELY, big bang theory was proposed by theoretical physicist for the first time. Option D is an irrelevant option as passage never talks about "philosophers". Option E cannot be right answer if we refer to the following in the first Para: "<i>Each piece, or part, of the whole of nature is always merely an approximation to the complete truth, or the complete truth so far as we know it.</i>"</p> <p>Hence option B is the correct answer.</p>	

	SECTION B	
	DECISION MAKING	
	Analyse the following caselet and answer the questions 27-29 that follow:	
	<p>Indian Institute of Research is a Government-established body to promote research. In addition to helping in policy making, it also provides free online access to all the articles to the public. It has a mission of publishing high quality research articles. Till 2010, the publication of articles was very slow because there was no incentive for researchers to publish. Researchers stuck to the mandatory one article a year. Most of the researchers engaged in offering consultancy and earned extra income. Since its inception, the institute was considered the best place for cutting edge research. The new director of the institute was not happy with the work done by researchers in silo and came out with a new research policy in 2013 to increase research output and improve collaboration among researchers. It was decided that extra benefits would be offered to researchers with new publications. As a result, the number of research articles increased fourfold in 2014. At the 2015 annual audit, an objection was raised against the new benefits scheme. Auditors¹ were not happy with increased expenses towards remuneration for researchers. Further, the Government opined that the publication was itself a reward and hence researchers need be paid nothing extra. The director tried to defend his policy but the response from the government was not encouraging.</p> <p><i>1. Note: Auditors role is to verify accounts.</i></p>	
27.	<p>The following facts were observed by an analytics team hired by the government to study the extant situation.</p> <ol style="list-style-type: none"> 1. There was a four-fold increase in the number of researchers leaving the organization in 2014. 2. A researcher died while on duty. 3. The quality of articles published declined substantially. 4. The average number of people accessing an article decreased by 2%. <p>Which of the following options would justify the government's intention to DISCONTINUE the scheme?</p> <ol style="list-style-type: none"> A. 1 and 2 B. 2 and 3 C. 3 only D. 4 only E. 3 and 4 	C
	<p>Fact 1 cannot be the reason as a substantial increase in attrition is irrelevant for the government to take a decision regarding the quality of the scheme. Fact 2 cannot be the reason as one researcher could have died because of other reasons. Fact 3 corroborates the government's reason for not equating publications with rewards (the quality of articles published has decreased). Fact 4 cannot be the reason as 2% decrease is not substantial enough.</p> <p>Hence the only possible answer is fact 3 making C as right choice.</p>	
28.	<p>The director still wanted to persuade the government to review its stand. He had framed the following arguments:</p> <ol style="list-style-type: none"> 1. Most famous researchers in the world are also the highest paid. 2. American institute of research gives extra benefits to its scientists. 3. This year's highest paid researcher had won the Nobel Prize last year. 	E

	<p>Considering the Government to be reasonable which of the following options is UNLIKELY to convince the Government?</p> <p>A. 1 and 2 B. 2 only C. 2 and 3 D. 1 and 3 E. 1, 2 and 3</p>	
	<p>That most famous researchers are also paid high does not imply that the highest paid researchers are always famous or that they will be productive. If an American Institute is giving extra benefits, it does not mean IIR should also follow it. The researcher may be getting the highest pay as a consequence of receiving the Nobel Prize, or there may be other reasons for the researcher to be highest paid. Hence E is the correct option.</p>	
29.	<p>The director wanted to promote good decision making at Indian Institute of Research. A few trusted colleagues offered the following suggestions:</p> <ol style="list-style-type: none"> 1. Auditors need not be allowed to object to extra benefits schemes. 2. Auditors need not pin-point sudden increase in expenditure. 3. Auditors need not be consulted before taking any policy level decision. <p>Which of the following combination of options should the director agree THE MOST with?</p> <p>A. 1 and 2 B. 2 only C. 2 and 3 D. 1 and 3 E. 1, 2 and 3</p>	D
	<p>As given in note 1 of the caselet, the auditor's role is to verify accounts and not to make policies. The Director and other top officials are the best people to decide on policy related matters. As points 1 and 3 are policy related, D is the correct answer.</p>	
	<p>Analyse the following caselet and answer the questions 30-31 that follow:</p>	
	<p>Kamal Chinnappa, Vimal Rao, Ganesh Krishnan and Dinesh Kumar own a saloon each on the Barbil street. They are the only hairdressers on that street. Each of them offered three services viz. haircut, shaving and hair-dye. One evening, all four of them met in a nearby tea-stall and agreed to charge ₹100 for any of the three services (haircut, shave and hair-dye) on weekdays. They also agreed to increase this rate to ₹115 on weekends and holidays. All verbally decided to implement the agreement.</p>	
30.	<p>The following day Kamal, being the most competent hairdresser on the street, was contemplating charging higher than agreed upon price.</p> <p>Which of the following would enable him to charge more with minimal violation of the agreement?</p> <p>A. He should introduce a new and specialized service at ₹130. B. He should open another shop on the same street and charge ₹150. C. He should charge ₹130 for those wanting to jump the queue. D. He should charge ₹115 for a service to a particular customer and give the next service free. E. He should open his shop two hours before others and close it two hours after.</p>	A

	<p>He wants to charge more for his competence but with minimum violation of the agreement. So for the agreed services he cannot charge more. But for any new service he can charge more. Hence A is the correct answer.</p> <p>In B he is in violation of the agreement since the agreement was between people and not the shops.</p> <p>C and E is wrong since charging more for jumping the queue and extending work hours may increase revenue but will not enable him to showcase his competence (which is his objective).</p> <p>D is a wrong answer since giving free service is a violation of the agreement.</p>	
31.	<p>Vimal relies heavily on a bunch of loyal customers. He is concerned about retaining them.</p> <p>Which of the following options should he choose if he does not want to violate the agreement?</p> <p>A. He should charge differential rates for loyal customers. B. He should charge the loyal customers lower. C. He should make every third visit free for his loyal customers. D. He should charge all the agreed upon price. E. He should allow his loyal customers to jump the queue.</p>	E
	<p>A, B and C will end in violation of the agreement. C because the price per visit comes down by one third. D does not violate but does not solve the problem of retaining the loyal customers. The correct answer hence is E where the customers get a preference but pay the same.</p>	
	<p>Analyse the following caselet and answer the questions 32-33 that follow:</p>	
	<p>The City of Yashmund is served by licensed taxis operating on officially sanctioned metered rates and driven by licensed drivers who do not own the taxis but pay a monthly rent to the taxi-owners. Shaliesh Nair, the mayor of Yashmund, perceived that most of these taxis do not offer sufficient comfort and safety to passengers.</p>	
32.	<p>The Mayor wants the owners and drivers to care about comfort.</p> <p>Which of the following decisions, IF TAKEN, is MOST LIKELY to increase the comfort levels of passengers?</p> <p>A. The mayor issues a guideline that taxis will be randomly inspected by the police for the comfort level. B. The mayor ensures banks grant drivers loans to own cars. Owner driven cars generally offer greater comfort. C. The mayor introduces licensing of air-conditioned taxis which can charge increased rates to the rich customers. D. The mayor introduces a feedback system that records passenger satisfaction with comfort levels; this will affect renewal of annual taxi license. E. The mayor permits doubling metered rates which will ensure enhanced income for owners to invest in greater comfort.</p>	D
	<p>A does not imply any punishment and therefore may not induce the drivers to care about comfort. B may not be taken up by the drivers if they are satisfied with the rents they currently receive and hence is not correct. C focuses on a specific market segment and may not solve the problem for the entire market. E does not ensure that the extra amount will be invested in comfort. D focuses on a measure of comfort and a penalty for lack of comfort based on the measure and hence is the correct answer.</p>	
33.	<p>The mayor wants to involve the car owners in finding a solution to the problem of comfort and safety. He is concerned that the customers may not be willing to pay more for safety.</p>	D

	<p>Which of the options below is MOST LIKELY to convince the owners?</p> <p>A. The taxi owners who clear comfort-inspection can charge higher rentals from the drivers and drivers with impeccable safety record can charge the same from customers.</p> <p>B. The taxis that clear comfort-inspection can charge 25% above the metered rates; studies have shown that customers are willing to pay around 18% extra for comfort.</p> <p>C. If a taxi owner has a consistent record of comfort and safety the government will subsidize a second loan.</p> <p>D. Taxis can charge 25% more if they clear comfort-inspection. However, owners of the taxis found compromising on safety will be jailed.</p> <p>E. Taxis that pass comfort-inspection test can charge 25% more. Should they violate any traffic rule this privilege would be withdrawn.</p>	
	<p>The customers are likely to pay more for comfort and not for safety. Taxi owners can be motivated to provide more comfort by allowing them to charge more, but only strong penalties would prevent safety violations. Only D addresses both safety and comfort concerns and therefore is the right answer.</p> <p>Option B and E focus on comfort but ignore safety (violation of traffic rule is only one aspect of safety rule). Moreover, Option E penalizes safety rule breakers by only denying the use of comfort related privilege. Penalty should be more with safety rule violation. Option C does not penalize safety violation. Moreover, the taxi owners may not require a second loan. Option A is wrong since customers are not willing to pay more for safety.</p>	
	<p>Analyse the following caselet and answer the questions 34-35 that follow:</p>	
	<p>Chatterjee, the MLA of Trikathapur, owes his election success to his close friend and businessman Ghosh. The victory had appeared unlikely for Chatterjee after the arrival of Bhowmick, a budding politician with hordes of money. However, his clean image along with Ghosh's money ensured Chatterjee's resounding victory.</p>	
34.	<p>After the elections, Ghosh requested Chatterjee to sanction the land adjoining his factory, for expansion. However, the requested government land was a green belt reducing harmful pollution from the factory.</p> <p>Which of the following is the BEST option for Chatterjee in these circumstances?</p> <p>A. Chatterjee should approve the sale only after Ghosh plants a large number of trees around the factory and the city.</p> <p>B. Chatterjee should oblige Ghosh provided he recruits 20 locals as his employees on condition that they plant and maintain a tree each in their locality.</p> <p>C. As Ghosh is paying market rates Chatterjee should approve the sale with no riders.</p> <p>D. Chatterjee should approve the sale and ensure that the green belt is shifted to a different tract of land outside the city, purchased from the proceeds of the sale.</p> <p>E. Chatterjee should unconditionally approve the transfer of the land to Ghosh as a token of gratitude.</p>	A
	<p>E and C are wrong as they do not take care of Chatterjee's duty to the city. B is wrong since the locals and not Ghosh are made responsible for the greenery; moreover the 20-30 trees in their respective locality may not be sufficient or even relevant to reduce pollution. D is wrong since Chatterjee is taking the responsibility to buy land from the proceeds of the sale and Ghosh gets the land with no riders (similar to C). A ensures that Ghosh first plants a</p>	

	stipulated number of trees and that too around the factory and the city, hence is the right answer.	
35.	<p>Inspired by Bhowmick's manifesto, Chatterjee is contemplating a green policy which can adversely affect Ghosh's business interests.</p> <p>Which of the following actions from Ghosh is likely to convince Chatterjee NOT to pursue this policy?</p> <p>A. Request Chatterjee to defer implementation of the green policy by 3 years, the time needed to make his factory green.</p> <p>B. Remind Chatterjee that it is for his clean image that people voted him and not for Bhowmick's green policy.</p> <p>C. Warn Chatterjee that all industrialists will turn against him and despite his clean image he may be hated by the industry.</p> <p>D. Appeal to Chatterjee's sympathy citing the potential loss his business will suffer if the policy were to be implemented.</p> <p>E. Threaten Chatterjee that he should not take his loyalty for granted as Bhowmick has invited him to join his party.</p>	B
	<p>Chatterjee may not pursue the green policy unless his future interests are protected. Option A will not convince Chatterjee as it will not affect his future interests. Moreover, Policy framed in favour of his friend makes it unethical.</p> <p>Option C is unfounded assumption and hence is wrong.</p> <p>D may gain Ghosh some sympathy but it is not going to convince Chatterjee.</p> <p>E may affect Chatterjee, but it might backfire on Ghosh too.</p> <p>B appeals to Chatterjee's stakeholders and hence is the right answer.</p>	
	Analyse the following caselet and answer the questions 36-38 that follow:	
	Nicky, Manoj and Benita are graduates from a top ranked B-school. They joined ABC corporation a year ago. ABC is known for its performance oriented culture. This is the first time the organization recruited from a top ranked B-school. They are part of a five member team with two others from lower ranked B-schools. Nicky, Manoj and Benita draw 40 per cent higher salaries than other team members. This team reports to Amelia Ganeshmurthi, a senior executive.	
36.	<p>Amelia is disappointed with the performance of Nicky, Manoj and Benita. She came to know that ABC was not their first choice and they had spent the first ten months applying to other organizations. However, they have now started liking ABC and promised to do their best henceforth. Amelia has to rate their annual performance and decide about their future. She has the following choices:</p> <ol style="list-style-type: none"> 1. Fire them from ABC for insincerity and save the organization's time and money. 2. Give them average ratings with a year to prove their worth and fire them from ABC if they fail to show significant progress. 3. Impose a pay-cut of 15% since they have not delivered on the promise, but give them relatively high ratings. 4. Give them relatively poor ratings with one year time to improve and fire them from ABC if they fail to show significant progress. 5. Give them high ratings and give them a second chance to prove their worth. <p>Which of the following options rank the above choices in the order of MOST APPROPRIATE to LEAST APPROPRIATE?</p>	C

	<p>A. 1, 2, 4 B. 2, 1, 4 C. 4, 2, 5 D. 4, 3, 1 E. 5, 2, 3</p>	
	<p>Action 1 is the third best and better than action 5 in which they get very high ratings for performance in a performance oriented organization. Action 2 is the second best action since the trio get average ratings instead of less than average ratings for their poor performance. Action 3 is the worst decision because this action sends mixed signals. Amelia is giving high ratings and simultaneously cutting salary. Action 4 is the best action because, poor rating reflects the poor performance of the trio in tune with the performance orientation of the organization while giving the trio enough time to improve. Action 5: The organization is right in giving them an opportunity but rating them high is wrong. This decision is better than action 3 since the communication is clearer and does not send any mixed signal. Hence, the correct ranking is 4, 2, 1, 5, 3 Option C is in sync with the above logic and therefore is the correct answer.</p>	
37.	<p>Recruiting Nicky, Manoj and Benita was part of a larger initiative to make the organization attractive to prospective employees. Recently Amelia’s boss informally told her that the trio’s perception of the organization might influence future recruitment from top B-schools. However, the trio had already expressed their unhappiness about the organization to Amelia. She suspected that her promotion due next year might depend on the trio!</p> <p>Which of the following is the BEST way for Amelia to deal with this situation?</p> <p>A. Henceforth, she should be lenient with the trio. B. She should promise the trio an early promotion if they can help her recruit good talent from top B-schools. C. Henceforth, she should occasionally invite the trio for dinner and informal outings. D. She should tell her boss that it is unfair to link her promotion to the trio’s behaviour. E. She should convey the trio’s unhappiness to her boss.</p>	E
	<p>Ms Amelia “suspects” that the trio could affect her promotion. She should clear this suspicion by communicating the opinions of the trio to her boss. This will result in her boss reviewing his/her expectations from the trio and therefore also from Ms Amelia. Therefore E is the correct answer. Options A, B and C do not serve the interests of the organization. While option A and option C might serve Ms Amelia’s short term interests. Option D is wrong since it is her own perception and unfounded.</p>	
38.	<p>Nicky’s performance on the job is disappointing though she is considered a very helpful person outside the workplace helping her teammates and others in the organization with their personal needs e.g. finding a place to rent, a good place to get homely food etc. On the other hand, Manoj and Benita are performing well in their respective jobs and are perceived by their teammates as important to the team. But they are not interested in helping outside the workplace. Amelia has to decide the future of the trio. She has the following options:</p> <ol style="list-style-type: none"> 1. Inform the higher authorities about Nicky’s poor performance and ask them to take a call. 2. Send Nicky for a one month training earmarked for top performing employees. 3. Serve Nicky an ultimatum to improve within the next six months or get fired. 4. Even though they performed well, give Manoj and Benita average ratings because of their disinterest in helping outside workplace. 	E

	<p>5. Give Manoj and Benita high ratings based on their performance.</p> <p>Which of the following combination of above options will be the MOST APPROPRIATE?</p> <p>A. 1 and 5 B. 2 and 4 C. 2 and 5 D. 3 and 4 E. 3 and 5</p>	
	<p>ABC is a performance focused organization, punishing poor performance and rewarding good. Among the combination of decisions that are appropriate for the given situation, one decision from 1, 2 and 3 and one from 4 and 5 have to be chosen (1, 2 and 3 are about Nicky and 4 and 5 are about Manoj and Benita).</p> <p>Action 1: Amelia is running away from her responsibility with this action. Action 2: This decision rewards Nicky for non-performance. Action 3: Amelia is asking Nicky to focus on performance and gives her an ultimatum. This is a better decision compared to the actions 1 and 2. Action 4: This decision is wrong because Amelia is punishing Manoj and Benita for their behaviour outside workplace. Action 5: This decision rewards Manoj and Benita for their performance and is the right thing to do. Based on this rationale, the best combination would be 3 and 5 therefore Option E is the right answer.</p>	
	<p>Analyse the following caselet and answer the questions 39-41 that follow:</p>	
	<p>Recently a private food testing agency reported the presence of a harmful chemical in <i>Crunchy Chips</i>, a product of a fast moving consumer goods giant. The report sparked a nationwide outcry.</p>	
<p>39.</p>	<p>Rajan Shekhawat, the CEO of the company, feared this incident might affect the company's image among consumers. Rajan had the following options:</p> <ol style="list-style-type: none"> 1. Apologizing publicly for this inconvenience and immediately withdrawing the products from all stores. 2. Communicate 'the correct findings' to the public. 3. Hire a reputed independent testing agency to verify the claims of the report. 4. Establish internal mechanisms to prevent repetition of such incidences in future. 5. Give higher incentives to distributors and retailers for selling the company brands. <p>Which of the following would be the MOST APPROPRIATE ORDER of options for Rajan, starting from the immediate?</p> <p>A. 3, 1, 5 B. 3, 2, 4 C. 1, 3, 5 D. 1, 2, 5 E. 5, 3, 2</p>	<p>B</p>
	<p>Veracity of leaked report has not yet been ascertained. It may be a good idea to first check the credibility of the report through an independent agency. Based on these findings a concrete action can be taken. Therefore 3 followed by 2 is the correct order. Therefore B is the correct answer.</p>	

40.	<p>Mukesh Routray, a shopkeeper in a remote village was surprised to read in the newspaper, his only source of information, about harmful chemicals in <i>Crunchy Chips</i>. He had stocked a large quantity of <i>Crunchy Chips</i> for the forthcoming festive season. He also realized that people in his village are completely unaware of this controversy. He had the following options:</p> <ol style="list-style-type: none"> 1. Sell the entire stock at a discount before the news spreads. 2. Destroy the entire stock and advise customers not to buy this product from other shops as well. 3. Donate the entire stock of Crunchy Chips to a local orphanage. 4. Inform customers about the controversy but understate its seriousness. 5. Ignore the news and sell the stock at the forthcoming festive season as planned. 6. Explore the veracity of the report and then take decision. <p>If arranged from ethical to unethical which of the following is DEFINITELY the WRONG order?</p> <ol style="list-style-type: none"> A. 6, 5, 1 B. 6, 1, 4 C. 4, 5, 1 D. 2, 4, 3 E. 2, 4, 1 	B
	<p>Actions 1, 3, and 5 are unethical because Mukesh is capitalizing on information he is privy to. Action 4 is also unethical but to a lesser extent compared to 1, 3 and 5 though he is informing the consumers he is deliberately “understating the seriousness”. Whereas action 2 is ethical, 6 is not unethical. So the correct order would be: 2 > 6 > 4. 1, 3 and 5 are all unethical with no definite ranking among them. This rules out Option A, C, D and E. Option B is definitely a wrong order and hence the correct answer.</p>	
41.	<p>An independent and trustworthy confidante of Rajan Shekhawat, the CEO of the company, informed him that one of their main competitors had bribed the food testing agency to manipulate the report.</p> <p>Which of the following actions will BEST help <i>Crunchy Chips</i> to bounce back?</p> <ol style="list-style-type: none"> A. Proclaim over the media that their product is completely safe. B. Secretly hire a food testing agency to ascertain the quality of the competitor’s product. C. Hire another food testing agency to test and communicate the outcome to the consumers. D. File a defamation case against the competitor for their alleged involvement in the conspiracy. E. File a defamation case against the food testing agency. 	E
	<p>The objective is to bounce back i.e. resurrect the damaged image of the company and dispel all the doubts about their products. The company should ensure that such incidents are not repeated. The root cause of the problem is that the testing agency engaged in an inappropriate action (whereas the agency was supposed to be fair and neutral) at the behest of the competitor and this should be nipped in the bud. Option A and C: The option does address the national outcry but does not address the proxy war by the competitor, which might recur. Option B: The decision is inappropriate and not addressing the problem at all.</p>	

	<p>Option D: Their competitor is engaged in a proxy war. So, directly targeting the competitor will be a disaster.</p> <p>Option E: The decision is appropriate as it targets the testing agency and not the competitor. It also addresses the national outcry indirectly because only a brand confident of its product quality will file a defamation suit. This in a way reassures the consumer about the product quality. Therefore Option E is the correct answer.</p>	
	Analyse the following caselet and answer the questions 42-44 that follow:	
	Purushottam Bhatnagar owns and operates a sweetshop <i>Puru and Sons</i> . He is about 60 years old and is eager to hand over the business to his sons Ratan and Pramod. He however, fears that his sons, fresh from college may not understand the tricks of the trade.	
42.	<p>Purushottam sends a batch of sweets to the Police station across the street every day. Ratan construed it as a bribe and wanted to stop this practice.</p> <p>Which of the following arguments, IF TRUE, would BEST convince Ratan NOT to give up this practice?</p> <p>A. In the last three years, three attempts to burgle <i>Puru and Sons</i> were effectively foiled by the Police.</p> <p>B. Each policeman receives only two pieces of sweet, too small to be considered a bribe.</p> <p>C. The police in return send two policemen in mufti to mingle with the customers during rush hours to prevent pickpockets.</p> <p>D. Every day, Purushottam also sends a batch of sweets to the school next to the station, an orphanage nearby and the temple at the end of the street.</p> <p>E. Purushottam’s competitor Uttampurush who runs a <i>sweetshop</i> in the same street and his neighbour Mahapurush who runs a <i>samosa</i> stall, both do similar things every day.</p>	D
	<p>Option A and Option C are both wrong since in both cases Purushottam is “paying” the police for discharging their duties. Option B is wrong since the pettiness of the bribe cannot be a defence.</p> <p>Option E is wrong because you don’t become right just because others are also doing it. Option D is the best since Purushottam is sending a batch of sweets to many other social institutions and therefore can be argued as a goodwill gesture.</p> <p>Therefore Option D is the correct answer.</p>	
43.	<p>Purushottam’s eldest son discovered that the shop repackaged sweets that were close to expiry and sold them at a discount under different names. These sweets usually get sold very fast. But his son was concerned about the possible consequences of this practice.</p> <p>Purushottam was thinking of the following arguments to convince his son.</p> <ol style="list-style-type: none"> 1. These sweets are consumed the same day and therefore there is no cause for worry. 2. Reduced prices give enough indication about the sweets to the customers. 3. These products are preferred by those who cannot afford full price and in a way, this is a service done to them. 4. In the past 30 years not a single person has reported ill because of consumption of these sweets. 5. Repackaging and selling sweets is a common practice. <p>Which combination of arguments below is MOST LIKELY to convince Ratan?</p> <p>A. 1 and 3</p> <p>B. 1 and 4</p>	B

	<p>C. 2 and 3 D. 2 and 5 E. 4 and 5</p>	
	<p>Statement 1 by itself is not a correct answer since “no cause of worry” is not supported by any evidence. This support comes from Statement 4. Therefore Statement 1 together with Statement 4 will convince Ratan. Therefore Option B is the right answer.</p>	
44.	<p>Purushottam’s younger son Pramod discovered that 10% of their customers whom Purushottam called <i>privileged</i> customers purchased sweets at prices fixed 10 years ago (which is significantly lower than the current prices). Purushottam told him, “This 10% are my core and loyal customers with whom I have personal connect and therefore they deserve this privilege”. Pramod refuted his father’s argument citing the following information.</p> <ol style="list-style-type: none"> 1. These customers form the top 20% of the income bracket of the city. 2. These customers frequently purchase from other sweetshops at market prices. 3. None of them recognises and greets Purushottam at the shop or at anywhere else. 4. None of them was present at Pramod’s marriage. 5. These customers actually buy sweets at <i>Puru and Sons</i> for others not part of the core and loyal customer group. <p>Which of the following combination of the above will MOST LIKELY convince Purushottam to charge market price to all?</p> <p>A. 1 and 2 B. 2 and 4 C. 2 and 5 D. 3 and 4 E. 4 and 5</p>	C
	<p>Option A is not correct since discount cannot be discontinued just because customers are in the top income bracket. Options B, D and E are not correct since not being present at one event cannot be used against them. Option C is the right answer since the customers do not seem to be loyal and are also taking advantage of the discount in an unfair manner, since this is a select discount only to the loyal customers.</p>	
	<p>Analyse the following caselet and answer the questions 45-47 that follow:</p>	
	<p>Six people working at the Bengaluru office of Simsys are planning to buy flats at a real estate project at Whitefield. Their preferences are listed below:</p>	

Person	Designation	First Preference	Second Preference	Third Preference
Bhatia	Vice President	Ground floor flat	Price < ₹50 lacs.	Shopping mall within 5 km.
Patel	Client Relationship Manager	Distance to office < 10 km.	Recreation Club	
Khan	Project Manager	Recreation Club	Place for morning walk	Car parking
Singh	Senior Software Engineer	Shopping mall within 15 km.	Price < ₹30 lacs.	Place for morning walk
Yadav	Assistant Software Engineer	Price < ₹50 lacs.	Distance to office < 10 km.	
Lingdo	Assistant Software Engineer	Recreation club		

They have identified 7 real estate projects with following facilities available (marked with √):

Real Estate Project	M	N	O	P	Q	R	S
Price	₹60-80 lacs.	₹45-50 lacs.	₹20-25 lacs.	₹65-80 lacs.	₹35-45 lacs.	₹25-40 lacs.	₹20-30 lacs.
Distance to office	< 5 km.	<10 km.	> 20 km.	> 15 km.	< 2 km.	<10 km.	< 5 km.
Place for morning walk	√	√	√	√	√	√	
Recreation Club	√				√		√
Distance to shopping mall	Inside	> 25 km.	< 2 km.	Inside	< 5 km.	> 10 km.	> 20 km.
Car parking facility	√		√			√	√
Availability of ground floor flat		√				√	

A person is 'satisfied' if a project meets all three preferences.

45. Identify the project(s) where NONE of the 6 persons will be 'satisfied'.

- A. M only
- B. N only
- C. P only
- D. N and P only
- E. In all projects at least one person will be 'satisfied'.

C

The satisfaction levels of all 6 persons for various real estate projects are shown below (D = dissatisfied, S = satisfied):

Person	M	N	O	P	Q	R	S
Bhatia	D	D	D	D	D	D	D
Patel	S	D	D	D	S	D	S
Khan	S	D	D	D	D	D	D
Singh	D	D	S	D	D	D/S	D
Yadav	D	S	D	D	S	S	S
Lingdo	S	D	D	D	S	D	S

Hence the right option is C

46.	<p>Identify the project(s), where AT LEAST 3 of the 6 persons will be ‘satisfied’.</p> <p>A. M Only B. S only C. Q and R only D. M, Q and S only E. M, Q and R only</p>	D																																																								
	<p>The satisfaction levels of all 6 persons for various real estate projects are shown below (D = Dissatisfied, S = satisfied):</p> <table border="1" data-bbox="592 752 1125 1021"> <thead> <tr> <th>Person</th> <th>M</th> <th>N</th> <th>O</th> <th>P</th> <th>Q</th> <th>R</th> <th>S</th> </tr> </thead> <tbody> <tr> <td>Bhatia</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> </tr> <tr> <td>Patel</td> <td>S</td> <td>D</td> <td>D</td> <td>D</td> <td>S</td> <td>D</td> <td>S</td> </tr> <tr> <td>Khan</td> <td>S</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> </tr> <tr> <td>Singh</td> <td>D</td> <td>D</td> <td>S</td> <td>D</td> <td>D</td> <td>S/D</td> <td>D</td> </tr> <tr> <td>Yadav</td> <td>D</td> <td>S</td> <td>D</td> <td>D</td> <td>S</td> <td>S</td> <td>S</td> </tr> <tr> <td>Lingdo</td> <td>S</td> <td>D</td> <td>D</td> <td>D</td> <td>S</td> <td>D</td> <td>S</td> </tr> </tbody> </table> <p>Based on the previous table, Option D is the correct answer.</p>	Person	M	N	O	P	Q	R	S	Bhatia	D	D	D	D	D	D	D	Patel	S	D	D	D	S	D	S	Khan	S	D	D	D	D	D	D	Singh	D	D	S	D	D	S/D	D	Yadav	D	S	D	D	S	S	S	Lingdo	S	D	D	D	S	D	S	
Person	M	N	O	P	Q	R	S																																																			
Bhatia	D	D	D	D	D	D	D																																																			
Patel	S	D	D	D	S	D	S																																																			
Khan	S	D	D	D	D	D	D																																																			
Singh	D	D	S	D	D	S/D	D																																																			
Yadav	D	S	D	D	S	S	S																																																			
Lingdo	S	D	D	D	S	D	S																																																			
47.	<p>The marketing managers of all the six projects have agreed to add a recreation club and a car parking facility to the projects. In this changed scenario identify projects where AT MOST 2 of the 6 persons will NOT be ‘satisfied’.</p> <p>A. N, Q and R only B. P only C. M and P only D. N and P only E. M, N and P only</p>	A																																																								
	<p>The new table is shown below:</p> <table border="1" data-bbox="592 1686 1125 1955"> <thead> <tr> <th>Person</th> <th>M</th> <th>N</th> <th>O</th> <th>P</th> <th>Q</th> <th>R</th> <th>S</th> </tr> </thead> <tbody> <tr> <td>Bhatia</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> </tr> <tr> <td>Patel</td> <td>S</td> <td>S</td> <td>D</td> <td>D</td> <td>S</td> <td>S</td> <td>S</td> </tr> <tr> <td>Khan</td> <td>S</td> <td>S</td> <td>S</td> <td>S</td> <td>S</td> <td>S</td> <td>D</td> </tr> <tr> <td>Singh</td> <td>D</td> <td>D</td> <td>S</td> <td>D</td> <td>D</td> <td>S/D</td> <td>D</td> </tr> <tr> <td>Yadav</td> <td>D</td> <td>S</td> <td>D</td> <td>D</td> <td>S</td> <td>S</td> <td>S</td> </tr> <tr> <td>Lingdo</td> <td>S</td> <td>S</td> <td>S</td> <td>S</td> <td>S</td> <td>S</td> <td>S</td> </tr> </tbody> </table> <p>Hence, Option A is the correct answer.</p>	Person	M	N	O	P	Q	R	S	Bhatia	D	D	D	D	D	D	D	Patel	S	S	D	D	S	S	S	Khan	S	S	S	S	S	S	D	Singh	D	D	S	D	D	S/D	D	Yadav	D	S	D	D	S	S	S	Lingdo	S	S	S	S	S	S	S	
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Yadav	D	S	D	D	S	S	S																																																			
Lingdo	S	S	S	S	S	S	S																																																			

Analyse the following caselet and answer the questions 48-49 that follow:

Geetha Gawde can cultivate up to 6 crops a year. Crop A and B are ready for harvest in 2 months; crop C and D in 3 months, and crop E and F in 4 months. Crop A can be cultivated from January to June; crop B can be cultivated from April to September; crop C can be cultivated from May to December; crops D as well as E can be cultivated from August to December, and crop F from November to May. If Geetha plans a change of crop the soil should be left fallow for one month; however, if the same crop is sown no fallow time is needed. Sowing takes place only at the beginning of a month. Geetha can only harvest a maximum of 1000 units of any crop at any point in time. The *production cost per unit* (incurred at the time of sowing) and *price per unit* of crop are as follows:

Crop	Production cost per unit crop (in USD)	Price per unit crop (in USD)
A	20	60
B	5	55
C	25	70
D	15	75
E	5	65
F	35	75

For Geetha soil preparation does not incur any cost. If a crop is abandoned before the scheduled harvesting, she gets no money. Geetha is preparing a cropping schedule to maximize her annual profits (i.e. price – cost). She plans to replicate the schedule in the coming years.

48. Which of the following would DEFINITELY be a part of the ideal schedule?

- A. Cultivate crop B in August or September.
- B. Cultivate crop B from April to September.
- C. Do not cultivate any crop in August but cultivate crop D in September.
- D. Cultivate crop D or crop E in August or September.
- E. Do not cultivate any crop in August; but cultivate crop D or crop E in September.

Time to harvest	Profit/unit	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
2	40	A	A											A	A										
2	50				B	B	B	B									B	B	B	B					
3	45																								
3	60								D	D	D										D	D	D		
4	60																								
4	40																								
Max Profit	200																								

Though crop E generates the same profit, we cannot produce E from Sep to Dec because in that case, crop A cannot be cultivated from Jan. Hence, the correct answer is Option C.

49. Which of the following schedules would maximize her annual profit while minimising the costs, if Geetha decides NOT to repeat a crop in a calendar year?

- A. Crops A, B and E

- B. Crops B, D and F
- C. Crops B, D, E and F
- D. Crops C, D and F
- E. Crops A, B, D or E

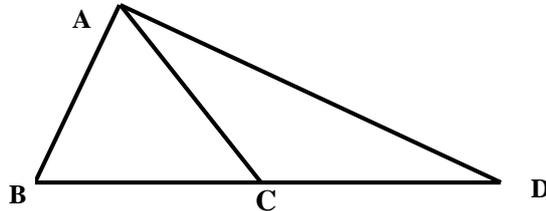
Time to harvest	Profit/unit	Cost/unit	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
2	40	20	A	A																						
2	50	5				B	B																			
3	45	25																								
3	60	15																								
4	60	5																								
4	40	35																								
Min Cost	30	ABE																								
Max Profit	150	ABE/ABD																								

Hence, the answer is Option A.

SECTION C

QUANTITATIVE ABILITY AND DATA INTERPRETATION

50. In the figure below, $AB = AC = CD$. If $\angle ADB = 20^\circ$, what is the value of $\angle BAD$?



- A. 40°
- B. 60°
- C. 70°
- D. 120°
- E. 140°

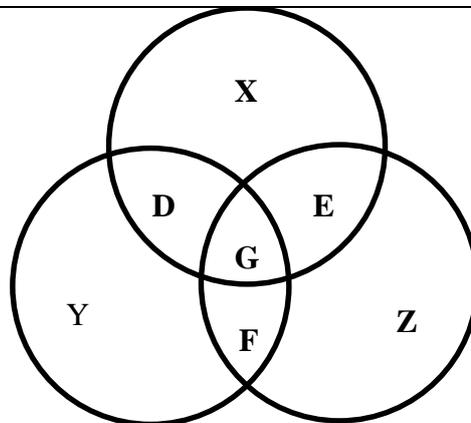
D

Given, $AB = AC$. Then $\angle ABC = \angle ACB$
 Also, $AC = CD$. Then $\angle CAD = \angle ADC = \angle ADB = 20^\circ$
 From the properties of triangle, $\angle ACB = \angle CAD + \angle ADC = 40^\circ$
 Now, $\angle BAC = 180^\circ - \angle ABC - \angle ACB = 180^\circ - 40^\circ - 40^\circ = 100^\circ$
 Finally, $\angle BAD = \angle BAC + \angle CAD = 100^\circ + 20^\circ = 120^\circ$.
 Hence, Option D is the correct answer.

51. In an amusement park along with the entry pass a visitor gets two of the three available rides (A, B and C) free. On a particular day 77 opted for ride A, 55 opted for B and 50 opted for C; 25 visitors opted for both A and C, 22 opted for both A and B, while no visitor opted for both B and C. 40 visitors did not opt for ride A or B, or both. How many visited with the entry pass on that day?

- A. 102
- B. 115
- C. 130
- D. 135
- E. 150

E



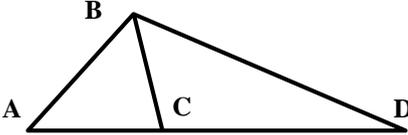
Assume, M = Number of visitors who did not opt for any of A, B or C.
 Given,

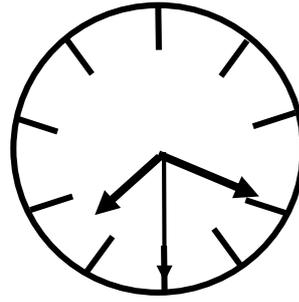
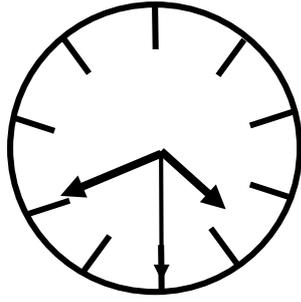
	<p> $X + D + E + G = 77$ $Y + D + G + F = 55$ $Z + E + G + F = 50$ $Z + M = 40$ $E + G = 25$ $D + G = 22$ $G + F = 0$ Then, $G = 0, F = 0.$ $E = 25$ $D = 22$ $X = 30$ $Y = 33$ $Z = 25$ $M = 15$ </p> <p>Total number of visitors = $X + Y + Z + D + E + F + G + M = 150$</p> <p>Hence, Option E is the correct answer.</p>	
52.	<p> $\triangle ABC$ and $\triangle XYZ$ are equilateral triangles of 54 cm sides. All smaller triangles like $\triangle ANM, \triangle OCP, \triangle QPX$ etc. are also equilateral triangles. Find the area of the shape MNOPQRM. </p> <p> A. $243\sqrt{3}$ sq. cm. B. $486\sqrt{3}$ sq. cm. C. $729\sqrt{3}$ sq. cm. D. $4374\sqrt{3}$ sq. cm. E. None of the above </p>	B
	<p> Area of any equilateral triangle = $(\sqrt{3}/4) \times (\text{side})^2$ $AB = 54$ cm. Then, $MR = 18$ cm. Area of $\triangle YMR = 81\sqrt{3}$ sq. cm. and area of $\triangle XYZ = 729\sqrt{3}$ sq. cm. Finally, area of shape MNOPQRM = $729\sqrt{3} - 3 \times 81\sqrt{3} = 486\sqrt{3}$ sq. cm. </p> <p>Using formula of hexagon, area of shape MNOPQRM = $(3\sqrt{3}/2) \times 18^2 = 486\sqrt{3}$ sq. cm.</p>	
53.	<p> Akhtar plans to cover a rectangular floor of dimensions 9.5 meters and 11.5 meters using tiles. Two types of square shaped tiles are available in the market. A tile with side 1 meter costs ₹100 and a tile with side 0.5 meters costs ₹30. The tiles can be cut if required. What will be the minimum cost of covering the entire floor with tiles? </p> <p>A. 10930</p>	A

	<p>B. 10900 C. 11000 D. 10950 E. 10430</p>					
	<p>We should use 1 meter tiles (cost 100) before 0.5 meter side tiles (cost $4 \times 30 = 120$).</p> <table border="1" data-bbox="280 439 995 560"> <tr> <td data-bbox="280 439 944 517">A</td> <td data-bbox="944 439 995 517">B</td> </tr> <tr> <td data-bbox="280 517 944 560">C</td> <td data-bbox="944 517 995 560">D</td> </tr> </table> <p>Area of A = 9×11 sq. meters Area of B = 0.5×11 sq. meters Area of C = 0.5×9 sq. meters Area of D = 0.5×0.5 sq. meters</p> <p>For A we need 99 tiles with 1 meter side For B and C together we need $(11 + 9)/2$ tiles with 1 meter side (we need to break each tile into two equal areas) For D we need 1 tile with 0.5 meter side</p> <p>Hence, the total cost = $9900 + 1000 + 30 = 10930$</p>	A	B	C	D	
A	B					
C	D					
54.	<p>Anita, Biplove, Cheryl, Danish, Emily and Feroze compared their marks among themselves. Anita scored the highest marks, Biplove scored more than Danish. Cheryl scored more than at least two others and Emily had not scored the lowest.</p> <p>Statement I: Exactly two members scored less than Cheryl. Statement II: Emily and Feroze scored the same marks.</p> <p>Which of the following statements would be sufficient to identify the one with the lowest marks?</p> <p>A. Statement I only. B. Statement II only. C. Both Statement I and Statement II are required together. D. Neither Statement I nor Statement II is sufficient. E. Either Statement I or Statement II is sufficient.</p>	B				
	<p>From the main part we get: A is highest. $B > D$. E is not at 6th position. C can have positions 2, 3 or 4. Hence, 6th position holder can be D or F.</p> <p>From Statement I: C is at 4th position. Using Statement I we cannot confirm 6th position holder. It can be D or F.</p>					

	<p>Form statement II: $E = F$. As E is not in 6th position, F is also not in 6th position. Then, D is 6th position holder.</p> <p>Option B is the correct answer.</p>	
55.	<p>Rani bought more apples than oranges. She sells apples at ₹23 apiece and makes 15% profit. She sells oranges at ₹10 apiece and makes 25% profit. If she gets ₹653 after selling all the apples and oranges, find her profit percentage.</p> <p>A. 16.8% B. 17.4% C. 17.9% D. 18.5% E. 19.1%</p>	B
	<p>Assume Rani sells X apples and Y oranges, where $X > Y$ Then, $23X + 10Y = 653$ Then try $X = 1, 11, 21$ etc. (to get last digit = 3) We find $X = 21$ and $Y = 17$ is the only solution where $X > Y$ Cost of an Apple = $23/1.15$ and cost of an Orange = $10/1.25$ Overall cost = $483/1.15 + 170/1.25 = 556$ Then profit = $653 - 556 = 97$ Profit percentage = $(97/556) \times 100 = 17.4\%$</p>	
56.	<p>Consider the set of numbers $\{1, 3, 3^2, 3^3, \dots, 3^{100}\}$. The ratio of the last number and the sum of the remaining numbers is closest to :</p> <p>A. 1 B. 2 C. 3 D. 50 E. 99</p>	B
	<p>Sum of the remaining numbers would be a GP series whose $a = 1, n = 100$ and $r = 3$. Thus, ratio would be $3^{100} / [(1 * 3^{100} - 1) / (3 - 1)] = 2$</p> <p>We are assuming (for all practical purposes) $1 * 3^{100} - 1 \approx 3^{100}$</p>	
57.	<p>f is a function for which $f(1) = 1$ and $f(x) = 2x + f(x-1)$ for each natural number $x \geq 2$. Find $f(31)$.</p> <p>A. 869 B. 929 C. 951 D. 991 E. None of the above</p>	D
	<p>$f(31) = f(30) + 2 \times 31 = f(29) + 2(31 + 30) = f(28) + 2(31 + 30 + 29) = \dots = f(2) + 2(31 + 30 + 29 + \dots + 3) = 2(31 + 30 + 29 + 3 + 2) + 1$ $= 2 \times 32 \times 31 / 2 - 1 = 991$</p>	
58.	<p>Two numbers in the base system B are 2061_B and 601_B. The sum of these two numbers in decimal system is 432. Find the value of 1010_B in decimal system... (To be decided)</p> <p>A. 110</p>	C

	<p>B. 120 C. 130 D. 140 E. 150</p>	
	<p>In decimal system the values are: $2061_B = 2B^3 + 6B + 1$ and $601_B = 6B^2 + 1$ Then, $2B^3 + 6B^2 + 6B + 2 = 432$ Or, $(B + 1)^3 = 216 = 6^3$ Hence, $B = 5$ Then, $1010_B = B^3 + B = 5^3 + 5 = 130$ Option C is the correct answer.</p>	
59.	<p>A water tank has M inlet pipes and N outlet pipes. An inlet pipe can fill the tank in 8 hours while an outlet pipe can empty the full tank in 12 hours. If all pipes are left open simultaneously, it takes 6 hours to fill the empty tank. What is the relationship between M and N?</p> <p>A. $M: N = 1:1$ B. $M: N = 2:1$ C. $M: N = 2:3$ D. $M: N = 3:2$ E. None of the above</p>	E
	<p>M inlet pipes can fill the $M/8^{\text{th}}$ part of the tank in 1 hour and N outlet pipes can empty $N/12^{\text{th}}$ part of the tank in 1 hour. If all pipes are left open, in 1 hour the tank will be filled = $M/8 - N/12 = 1/6$ (the tank will take 6 hours to fill). Then, $6M - 4N = 8$ $M = (8+4N)/6$ There will be infinite number of solutions ($N=1, 4, 7, 10, 13, 16 \dots$) but none of the above ratios are correct. For example, above equation is solvable when $M=2, N=1$ or $M=4, N=4$. But the ratios 2:1 (i.e. $M=2, N=1$) or 1:1 ($M=4, N=4$) are not correct because the solution of the above equation will not be an integer for values like $M=4, N=2$ or $M=6, N=6$. Therefore, Option E is the correct answer.</p>	
60.	<p>Company ABC starts an educational program in collaboration with Institute XYZ. As per the agreement, ABC and XYZ will share profit in 60:40 ratio. The initial investment of ₹100,000 on infrastructure is borne entirely by ABC whereas the running cost of ₹400 per student is borne by XYZ. If each student pays ₹2000 for the program find the minimum number of students required to make the program profitable, assuming ABC wants to recover its investment in the very first year and the program has no seat limits.</p> <p>A. 63 B. 84 C. 105 D. 157 E. 167</p>	A
	<p>For program to be profitable both companies must recover costs before they can start making profits.</p> <p>Since, ABC wants to recoup investment in the first year and there is no limit of number of students profits can only be shared after both companies can reach a situation of minimum profits (zero profit), which would be: $400x + 100000 = 2000x,$</p>	

	<p>Left hand side represents total costs and right hand side represents revenues. Let x be minimum number of students required to reach a situation of minimum profits (in this case 0).</p> <p>For the entire program, the MINIMUM students required for minimum profit is = $100000/(2000 - 400) = 62.5 = 63$</p>	
61.	<p>Study the figure below and answer the question:</p> <div style="text-align: center;">  </div> <p>Four persons walk from Point A to Point D following different routes. The one following ABCD takes 70 minutes. Another person takes 45 minutes following ABD. The third person takes 30 minutes following route ACD. The last person takes 65 minutes following route ACBD. If all were to walk at the same speed, how long will it take to go from point B to point C?</p> <p>A. 10 min. B. 20 min. C. 30 min. D. 40 min. E. Cannot be answered as the angles are unknown.</p>	C
	<p>$AB + BC + CD = 70$ $AB + BD = 45$ $AC + CD = 30$ $AC + CB + BD = 65$</p> <p>Then, $(AB + BC + CD) + (AC + CB + BD) = 70 + 65 = 135$ Or, $(AB + BD) + (AC + CD) + 2BC = 135$ Finally, $BC = 30$</p> <p>Option C is the correct answer.</p>	
62.	<p>Each day on Planet M is 10 hours, each hour 60 minutes and each minute 40 seconds. The inhabitants of Planet M use 10 hour analog clock with an hour hand, a minute hand and a second hand. If one such clock shows 3 hours 42 minutes and 20 seconds in a mirror what will be the time in Planet M exactly after 5 minutes?</p> <p>A. 6 hours 18 minutes 20 seconds B. 6 hours 22 minutes 20 seconds C. 6 hours 23 minutes 20 seconds D. 7 hours 17 minutes 20 seconds E. 7 hours 23 minutes 20 seconds</p>	B



In the above figure, left side diagram shows mirror image and right side diagram shows actual clock.

Form the drawing, actual time = 6 hours 17 min 20 seconds.

After 5 minutes actual time = 6 hours 22 min 20 seconds.

Option B is the correct answer.

63. a, b, c are integers. $|a| \neq |b| \neq |c|$ and $-10 \leq a, b, c \leq 10$. What will be the maximum possible value of $[abc - (a+b+c)]$?

- A. 524
- B. 693
- C. 731
- D. 970
- E. None of the above

For maximum value, two of $a, b,$ and c should be negative (all three negative will make abc negative). Hence the maximum will occur when $a = -10, b = -9,$ and $c = 8$.

Then, $abc = 731$

Option C is the correct answer.

64. A square piece of paper is folded three times along its diagonal to get an isosceles triangle whose equal sides are 10 cm. What is the area of the unfolded original piece of paper?

- A. 400 sq. cm.
- B. 800 sq. cm.
- C. $800\sqrt{2}$ sq. cm.
- D. 1600 sq. cm.
- E. Insufficient data to answer

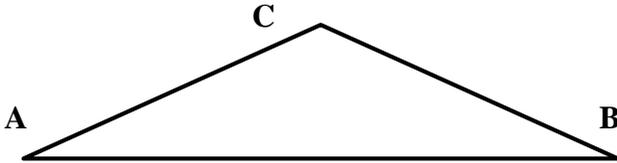
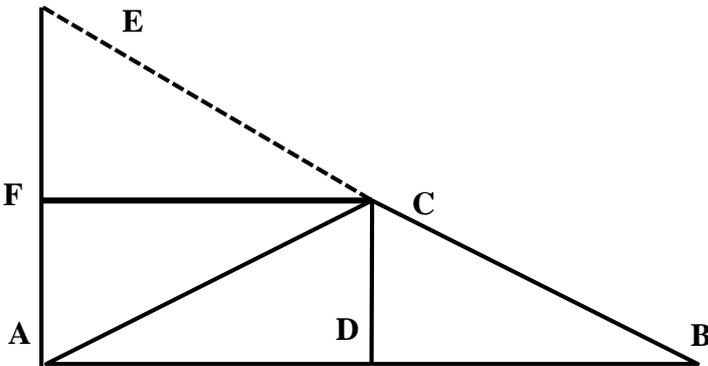
The smaller side of the isosceles triangle = 10

Then the side of the square = 20 and the area of the square = 400 sq. cm.

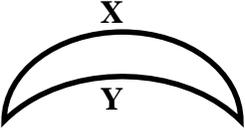
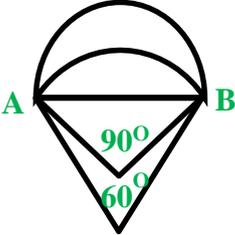
Option A is the correct answer.

65. The difference between the area of the circumscribed circle and the area of the inscribed circle of an equilateral triangle is 2156 sq. cm. What is the area of the equilateral triangle?

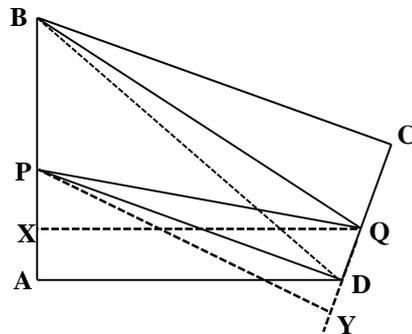
- A. $686\sqrt{3}$
- B. 1000
- C. $961\sqrt{2}$
- D. $650\sqrt{3}$
- E. None of the above

	<p>In an equilateral triangle, both circles have same centre (point B). Assume, AB is radius of circumscribed circle and BC is the radius of inscribed circle, where BCA is right angle. Then, $BC/AB = \sin 30^\circ = 1/2$. Let, $BC = x$ and $AB = 2x$. Then, $AC = x\sqrt{3}$ Side of the triangle = $2x\sqrt{3}$ Area of the triangle = $12x^2\sqrt{3}/4$ Then, $4\pi x^2 - \pi x^2 = 2156$ Or $x^2 = 2156 \times 7/66$. Finally, area of the triangle = $686\sqrt{3}$</p> <p>Option A is the correct answer.</p>	
66.	<p>A person standing on the ground at point A saw an object at point B on the ground at a distance of 600 meters. The object started flying towards him at an angle of 30° with the ground. The person saw the object for the second time at point C flying at 30° angle with him. At point C, the object changed direction and continued flying upwards. The person saw the object for the third time when the object was directly above him. The object was flying at a constant speed of 10 kmph.</p>  <p>Find the angle at which the object was flying after the person saw it for the second time. You may use additional statement(s) if required.</p> <p>Statement I: After changing direction the object took 3 more minutes than it had taken before. Statement II: After changing direction the object travelled an additional $200\sqrt{3}$ meters.</p> <p>Which of the following is the correct option?</p> <p>A. Statement I alone is sufficient to find the angle but statement II is not. B. Statement II alone is sufficient to find the angle but statement I is not. C. Statement I and Statement II are consistent with each other. D. Statement I and Statement II are inconsistent with each other. E. Neither Statement I nor Statement II is sufficient to find the angle.</p>	D
		

	<p>Given, $AB = 600$ meters. $\angle CAE = 60^\circ$. Assume D is the middle point of AB. Then $AD = 300$ meters.</p> <p>As $\angle CAB = \angle CBA$, $CA = CB$ and $\angle ACD$ is right angled triangle.</p> <p>Also, $AD/AC = \cos 30^\circ = \sqrt{3}/2$. Then, $AC = 600/\sqrt{3} = 200\sqrt{3} = CB$.</p> <p>From Statement I: $CE = 500$ meters. Assume F is perpendicular on AE. Then, $\angle ACF = 30^\circ$ and $\angle CAF = 60^\circ$. Also, $CF = 300$ meters.</p> <p>Then, $\cos \angle ECF = 300/500 = 3/5$. So we can get the value of $\angle ECF$, the new angle.</p> <p>From Statement II: $CE = 500$ meters = CA. Then, $\angle ECF = 30^\circ$, which is different from the angle found using Statement I.</p> <p>Hence, Option D is the correct answer.</p>	
67.	<p>For two positive integers a and b, if $(a+b)^{(a+b)}$ is divisible by 500, then the least possible value of $a \times b$ is:</p> <p>A. 8 B. 9 C. 10 D. 12 E. None of the above</p>	B
	<p>500 can be written as $5 \times 5 \times 5 \times 2 \times 2$. As the number is divisible by 500, $(a + b)$ should be divisible by 10.</p> <p>Then, least possible value of $(a + b) = 10$</p> <p>Hence, least possible value of $a \times b = 9 \times 1 = 9$ (when $a = 9$ and $b = 1$)</p> <p>Option B is the correct answer.</p>	
68.	<p>Pradeep could either walk or drive to office. The time taken to walk to the office is 8 times the driving time. One day, his wife took the car making him walk to office. After walking 1 km, he reached a temple when his wife called to say that he can now take the car. Pradeep figured that continuing to walk to the office will take as long as walking back home and then driving to the office. Calculate the distance between the temple and the office.</p> <p>A. 1 B. $7/3$ C. $9/7$ D. $16/7$ E. $16/9$</p>	C
	<p>Suppose the distance between his home and office is x km. Then, distance between his office and temple is $(x - 1)$ km.</p> <p>If he walks at a speed of y km/hr. Then his driving speed = $8y$ km/hour, as he is 8 times faster in car.</p> <p>Then,</p> $1/y + x/8y = (x - 1)/y$ <p>Or, $1 + x/8 = x - 1$</p> <p>Or, $x = 16/7$</p> <p>Finally, $x - 1 = 9/7$</p> <p>Option C is the correct answer.</p>	
69.	<p>If a, b and c are 3 consecutive integers between -10 to $+10$ (both inclusive), how many integer values are possible for the expression $\frac{a^3 + b^3 + c^3 + 3abc}{(a + b + c)^2}$?</p>	C

	<p>A. 0 B. 1 C. 2 D. 3 E. 4</p>	
	<p>$a^3 + b^3 + c^3 - 3abc = (a + b + c) \frac{1}{2} \{(a - b)^2 + (b - c)^2 + (c - a)^2\}$ For three consecutive integers, $(x - 1)$, x and $(x + 1)$, $\{(a - b)^2 + (b - c)^2 + (c - a)^2\} = 6$, $(a + b + c) = 3x$ and $abc = x^3 - x$. Then, $\frac{a^3 + b^3 + c^3 - 3abc}{(a + b + c)^2} = \frac{(a + b + c)^3 - 3abc + 6abc}{(a + b + c)^2} = \frac{9x + 6x^3 - 6x}{9x^2} = \frac{1}{3x} + \frac{2x}{3}$. For the expression integer value is possible only if $x = 1$ and -1. Possible values of a, b, c are $(0, 1, 2)$ and $(-2, -1, 0)$. Hence, Option C is the correct answer.</p>	
70.	<p>In the figure below, two circular curves create 60° and 90° angles with their respective centres. If the length of the bottom curve Y is 10π, find the length of the other curve.</p> <div style="text-align: center;">  </div> <p>A. $15\pi/\sqrt{2}$ B. $20\pi\sqrt{2}/3$ C. $60\pi/\sqrt{2}$ D. $20\pi/3$ E. 15π</p>	A
	<div style="text-align: center;">  </div> <p>Here, curve X creates 90° and curve Y creates 60°. Take, radius of curve X = R_1 and radius of curve Y = R_2 For curve Y, $2\pi R_2 = 10\pi \times 6$. Then, $R_2 = 30 = \text{line AB}$. Then, $R_1 = 15\sqrt{2}$ Finally, length of curve X = $2\pi R_1/4 = 15\pi/\sqrt{2}$</p> <p>Option A is the correct answer.</p>	
71.	<p>ABCD is a quadrilateral such that $AD = 9$ cm, $BC = 13$ cm and $\angle DAB = \angle BCD = 90^\circ$. P and Q are two points on AB and CD respectively, such that $DQ : BP = 1 : 2$ and DQ is an integer. How many values can DQ take, for which the maximum possible area of the quadrilateral PBQD is 150 sq. cm?</p> <p>A. 14</p>	D

- B. 12
- C. 10
- D. 9
- E. 8



Let's assume $DQ = x$, $CQ = y$, $AP = z$. Thus, $BP = 2x$
 Area of $PBQD = \text{Total area of the quadrilateral } ABCD - (\text{Area of triangle } APD + \text{Area of triangle } BCQ)$
 Total area of the quadrilateral $ABCD = \text{Area of triangle } ABD + \text{Area of triangle } BCD$
 Thus, Area of $PBQD = [\frac{1}{2} \times (2x + z) \times 9 + \frac{1}{2} \times 13 \times (x + y)] - [\frac{1}{2} \times 9 \times z + \frac{1}{2} \times 13 \times y]$
 $= 31x/2$

According to the question, $31x/2 \leq 150$ or, $x \leq 9.68$.
 Therefore, x can take 9 integer values. Option D is the correct answer.

Study the data given in the table below and answer the questions 72-74 that follow:

Shop Type	Region					All India
	North	East	West	South		
Grocers	34.7	32	32.2	30.2	32.4	
Pan Bidi	7.1	21.2	13.1	19.1	14.6	
Food Shops	11.8	7.9	14.8	12	11.6	
General stores	12.4	9.1	12	6.6	10.1	
Electrical Hardware	8.3	5.6	7.7	5.7	6.7	
Chemists	6	5.8	5	5.7	5.7	
Cosmetic Stores	3.8	3.6	3.3	3.9	3.7	
Others	15.8	14.8	12	16.8	15.2	
Total	100	100	100	100	100	

All figures are in percentage

Based on a survey of 'shop types' Kamath categorized Indian states into four geographical regions as shown in the table above. His boss felt that the categorization was inadequate since important labels were missing. Kamath argued that no further labels are required to interpret the data.

72. A consultant observing the data made the following two inferences:

- Inference I:** The number of Grocers per-thousand-population is the highest in North India.
- Inference II:** The number of Cosmetic per-thousand-population is the highest in South India.

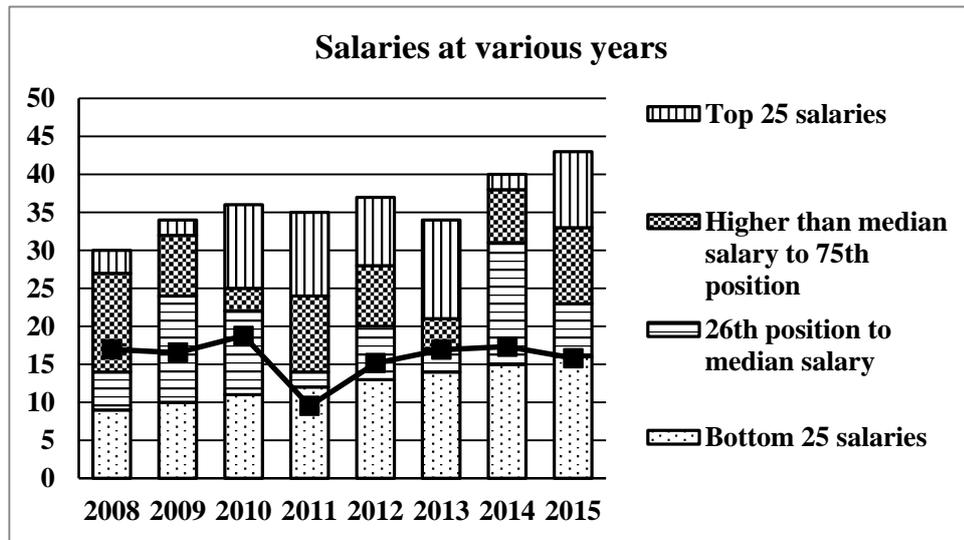
D

	<p>Which of following options is DEFINITELY correct?</p> <p>A. Inference I alone is correct. B. Inference II alone is correct. C. Either of the inferences is correct. D. Neither of the inferences is correct. E. Inference I will be correct only if inference II is correct.</p>																																																													
	<p>Since no data is given on population as well as distribution of states into four zones, it is not possible to calculate per thousand numbers.</p>																																																													
73.	<p>The average size of Food Shops in East India was twice that of Food Shops in West India. Which of the following CANNOT be inferred from the above data?</p> <p>A. As far as 'Food Shops' are concerned, customers in East India prefer spatial surroundings compared to customers in the West India. B. As far as 'Food Shops' are concerned, Rentals are very high in West India compared to East India. C. The ratio of customers buying from 'Food Shops' in East India to customers buying from 'Food Shops' in West India is 15.8: 11.8. D. There are 740 'Food Shops' in West India. E. There are 240 'Food Shops' in South India.</p>	C																																																												
	<p>Option A and B can be one of the possible conclusions (there are many others) as average size of food shops in East India is higher. Option D also is a possible conclusion as percentage given is 14.8, which can be converted into 740 (14.8*50) or a similar multiple of 14.8 Similarly Option E can also be a possible conclusion since 240 is a multiple of 12 (12*20=240). To conclude option C, we require additional data about number of customers and hence cannot be concluded on the basis of data above.</p>																																																													
74.	<p>Bala collected the same data five years after Kamath, using the same categorization. His data is presented below:</p> <table border="1" data-bbox="279 1310 1321 1720"> <thead> <tr> <th></th> <th>North</th> <th>East</th> <th>West</th> <th>South</th> <th>All India</th> </tr> </thead> <tbody> <tr> <td>Grocers</td> <td>30</td> <td>32</td> <td>32.2</td> <td>40</td> <td>32.4</td> </tr> <tr> <td><i>Pan Bidi</i></td> <td>7.1</td> <td>25</td> <td>13.1</td> <td>19.1</td> <td>14.6</td> </tr> <tr> <td>Food Shops</td> <td>4</td> <td>7.9</td> <td>14.9</td> <td>12</td> <td>11.6</td> </tr> <tr> <td>General stores</td> <td>12.4</td> <td>9.1</td> <td>12</td> <td>7</td> <td>10.1</td> </tr> <tr> <td>Electrical Hardware</td> <td>15</td> <td>5.8</td> <td>7.6</td> <td>5.7</td> <td>6.7</td> </tr> <tr> <td>Chemists</td> <td>7</td> <td>5.8</td> <td>5</td> <td>5.7</td> <td>5.7</td> </tr> <tr> <td>Cosmetic Stores</td> <td>3.9</td> <td>3.6</td> <td>3.2</td> <td>3.9</td> <td>3.7</td> </tr> <tr> <td>Others</td> <td>20.6</td> <td>10.8</td> <td>12</td> <td>6.6</td> <td>15.2</td> </tr> <tr> <td>Total</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> </tr> </tbody> </table> <p>Which of the following statements can DEFINITELY be concluded?</p> <p>A. In the last four years the number of Electrical hardware shop types has increased in North India. B. In the last four years the number of Grocers shop types has increased in South India. C. For the last four years in All India the number of Chemists shop types has remained constant. D. In the four years in East India the number of 'others' shop type has decreased. E. As per the new survey conducted <i>Pan Bidi</i> shops in East India are next only to Grocers.</p>		North	East	West	South	All India	Grocers	30	32	32.2	40	32.4	<i>Pan Bidi</i>	7.1	25	13.1	19.1	14.6	Food Shops	4	7.9	14.9	12	11.6	General stores	12.4	9.1	12	7	10.1	Electrical Hardware	15	5.8	7.6	5.7	6.7	Chemists	7	5.8	5	5.7	5.7	Cosmetic Stores	3.9	3.6	3.2	3.9	3.7	Others	20.6	10.8	12	6.6	15.2	Total	100	100	100	100	100	E
	North	East	West	South	All India																																																									
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Option A cannot be concluded as there is no mention of gross number in the two time periods. Using a similar rationale, Option B, C and D cannot be concluded. Option E can be concluded as population for *Pan Bidi* shops and Grocers is the same. These are percentages of the same base (total number of shops in East India)

Study the graph below and answer the questions 75-78 that follow:

This graph depicts the last eight years' annual salaries (in ₹lacs.) offered to students during campus placement. Every year 100 students go through placement process. However, at least one of them fails to get placed. The salaries of all unplaced students are marked zero and represented in the graph.



The bold line in the graph presents Mean salaries at various years.

75. In which year were a maximum number of students offered salaries between ₹20 to ₹30 lacs (both inclusive)?
- A. 2008
 B. 2009
 C. 2010
 D. 2012
 E. Cannot be determined

E

At least 25% of the students definitely got salaries between 20-30 lacs. in years 2008, 2010 and 2012. However, the graphs do not tell the actual salaries. Hence, no comment can be made on the number of students within a particular salary range.

Option E is the correct answer.

76. Identify the years in which the annual median salary is higher by at least 60% than the average salary of the preceding year?
- A. 2009, 2010
 B. 2012, 2014
 C. 2009, 2010, 2012
 D. 2009, 2012, 2014

B

	E. 2009, 2010, 2012, 2014																			
	<p>It is clear from the above table that in 2012 and 2014, the median of existing year is higher than 1.6 times mean of previous years. Hence the correct answer is: 2012 and 2014. Option B is the correct answer.</p>																			
77.	Question withdrawn since the options did not have the right answer.																			
78.	<p>If the average salary is computed excluding students with no offers, in how many years will the new average salary be greater than the existing median salary? Refer the table below for number of students without offers.</p> <table border="1" data-bbox="280 568 1442 674"> <thead> <tr> <th>Year</th> <th>2008</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>Number without job offers</td> <td>9</td> <td>5</td> <td>20</td> <td>2</td> <td>2</td> <td>4</td> <td>15</td> <td>2</td> </tr> </tbody> </table> <p>A. 3 B. 4 C. 5 D. 6 E. Cannot be solved without additional information.</p>	Year	2008	2009	2010	2011	2012	2013	2014	2015	Number without job offers	9	5	20	2	2	4	15	2	A
Year	2008	2009	2010	2011	2012	2013	2014	2015												
Number without job offers	9	5	20	2	2	4	15	2												
	<p>The answer can be found based on the table below:</p> <p>New Average Salary = (Old Average Salary) × 100 / (100 - students without jobs)</p> <p>Based on the additional information, the new average would be higher than the graph average of all the years. During two years old averages were already higher than median (2008 and 2013). With 20 students taken out, the new average salary for 2010 would jump to 23.4, which is clearly higher than median salary of 22. Similarly, the value of 2013 would jump further by at least one hence making new average definitely higher than existing median. In 2008, even the existing mean is visibly higher than median. Hence, the three 3 years are: (2008, 2010, and 2013). Option A is the correct answer.</p>																			