2A

PREVIOUS XAT QUESTION PAPER

XAT 2014

Name _____

XAT ID _____

Test Booklet No.563819

Booklet Series: **C**

INSTRUCTIONS

1. **DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO.**
2. Fill in the information required in the answer sheet. Your test may not be evaluated if the required details are not entered on the answer sheet.
3. **This booklet consists of two parts: Part I and II. Part I is main question paper and Part II is General Knowledge. Part I has three sections A, B and C with 28, 24 and 31 questions respectively, i.e. a total of 83 questions. The three section of Part I are followed by Part II that has twenty questions on general Knowledge If there is a problem with your test booklet, inform the invigilator / supervisor immediately. You will be provided with a replacement.**
4. **Do not seek clarification on any item in the test booklet from anyone including the test invigilator or the centre supervisor. Use your best judgement**
5. **The time available for completing the three sections and general knowledge is 150 minutes. You are expected to answer first three sections in 140 minutes and General Knowledge in 10 minutes. You are required to answer questions from all sections and expected to maximize scores in each section. General Knowledge marks would only be used by all institutes at the time of final selection and not for shortlisting candidates for interview/GD**
6. All questions carry equal marks.
7. Each question has five alternatives. Answer each question by darkening the appropriate bubble against the question number on the answer sheet. For example, if your answer to question number 1 is 'B', darken fully the circle 'B' against question 1.
8. All answers are to be marked only on the (OMR) answer sheet. Use the margin in the test booklet for rough work. No other piece of paper is permitted to be used for rough work.
9. **Use only BLUE OR BLACK BALL–POINT PEN for making answers on the OMR answer sheet. Please do not use gel pens or ink pens.**
10. **NEGATIVE MARKS (one fourth of the mark) may be deducted for each incorrect answer.**
10 Failure to follow instructions and examination norms will lead to disqualification.

To open the test booklet, insert a pencil/pen beneath this page and tear along the right side of the test booklet as indicated by the arrow at the bottom of the page.

PLEASE WAIT FOR THE SIGNAL TO OPEN THE TEST BOOKLET.

BEST OF LUCK!

Open from this side

PART I

Section A – Verbal Ability

Direction for questions 1 and 2: Read the definitions below and select the best match between the numbered sentences and the definitions.

Premise: A proposition from which another statement is inferred or follows a conclusion.

Assumption: Something, which is accepted as true.

Facts: Something, which can be checked.

Reason: A cause, explanation or justification for an action or event.

Conclusion: An end, finish or summarization of process or argument.

Proposition: A statement that expresses judgment or opinion.

Question: A sentence worded or expressed so as to elicit opinion.

Inductive inference: An end, finish or summarization reached for "the whole", based on "a particular" real incidence.

Deductive Inference: An end, finish or summarization reached based on the combining and recombining two or more than two assumptions.

1. When you look at the people who make fundamental, revolutionary breakthrough in any field, you keep noticing over and over and over again a high preponderance of them have some sort of disability when they were younger, whether it was a physical disability or mental disability, which leads to lower expectations from others, whom they always wanted to prove wrong (1). And what does it do (2)? What does that do to you, when you try to prove someone wrong (3)? You increase your engagement in something because you want to fight against those expectations (4).So it seems like it actually can be a gift having what we label as a disability, or disorder, and cause people to overcompensate and engage in things in other ways (5). A research study shows that higher number of people with dyslexia become social entrepreneurs because they over-compensate their disability through nonverbal communication, initiative and gift (6). And this overcompensation leads to greatness (7).

The best match would be:

(1) 1–Assumption, 2–Question, 3–Reason, 4–Fact
(2) 1–Assumption, 2–Question, 4–Reason, 7–Conclusion
(3) 1–Fact, 2-Question, 4–Reason, 6–Reason
(4) 1-Fact, 3-Question, 4–Reason, 7–Inductive Inference
(5) 3–Question, 4–Reason, 5–Fact, 6-Proposition

2. The fatal consequences of having a routine mid-day meal for at least twenty two children in Bihar's Saran district expose the chronic neglect of school education in a large part of India (1). The governments cannot find a small piece of land for a school and are unable to store food materials without the risk of contamination is a telling commentary on their commitment to universal primary education (2). The Bihar horror clearly points to the absence of strong normative procedures for the provision of infrastructure, even for a new school (3).

The best match would be:

(1) 1–Fact, 2–Reason, 3–Deductive Inference
(2) 1–Reason, 2–Reason, 3–Inductive Inference
(3) 1–Inductive Inference, 2–Fact, 3–Inductive Inference
(4) 1–Inductive Inference, 2–Inductive Inference, 3–Inductive Inference,
(5) 1–Reason, 2–Reason, 3– Reason

3. The *MBA* (1) is hardly a prerequisite for success, but *it* (2) certainly *helps* (3), and it has been getting more *important* (4) in recent years. *Most* (5) MBA programs equip their graduates to understand *how* (6) to deal with many of the important questions that their organizations will need to *tackle* (7) over time, *and* (8) that they will face in their careers.

The above italicized numbered words will be correctly represented by the following parts of speech:

(1) 1-Noun, 2-Pronoun, 3-Adverb, 4-Adjective, 5-Adjective, 8-Conjunction
(2) 1-Noun, 3-Adjective, 4-Adjective, 6-Adverb, 7-Adverb, 8-Article
(3) 1-Noun, 2-Pronoun, 4-Adjective, 7-Adverb, 8-Conjunction
(4) 2-Pronoun, 3-Verb, 4-Adverb, 6-Adverb, 8-Article
(5) 2-Pronoun, 3-Verb, 4-Adjective, 7-Verb, 8-Conjunction

Directions for question 4: Read the following paragraph carefully and answer the question that follows:

It is one week since Uttarakhand's worst disaster in living memory. Flash floods resulting from extremely intense rainfall swept away mountainsides, villages and towns, thousands of people, animals, agriculture fields, irrigation canals, domestic water sources, dams, roads, bridges, and buildings – anything that stood in the way.

A week later, media attention remains riveted on the efforts to rescue tens of thousands of pilgrims and tourist visiting the shrines in the uppermost reaches of Uttarakhand's sacred rivers. But the deluge spread far beyond th Char Dhams – Yamunotri, Gangotri, Kedarnath and Badrinath – to cover the entire state. The catchments of many smaller rivers also witnessed flash floods but the media has yet to report on the destruction there. Eyewitness accounts being gathered by official agencies and voluntary organizations have reported devastation from more than 200 villages so far and more affected villages are being reported every day.

4. Which of the following would the author agree the most with?

(1) *Char Dhams* were most affected by Uttarakhand disaster.
(2) Entire catchment of rivers flowing in Uttarakhand was affected.
(3) Media attention was on Char Dham but the entire catchment area of rivers flowing in Uttarakhand was affected.
(4) Media cannot be trusted as it focuses only on important places and events.
(5) Voluntary organizations are better than media in reaching out to the affected people.

5. Which of the following is the correct form of expression for the underlined part of the sentence below?

Patna is not only the *capital of Bihar, but it is also one of the oldest* cities in the world and the largest city in the state.

(1) capital of Bihar, but it is also one of the oldest
(2) capital of Bihar, nevertheless also one of the oldest
(3) Bihar's capital city, and it is also one of the older
(4) Bihar's capital city, but it is also one of the older
(5) capital of Bihar, but it is also one of the older.

Directions for questions 6 and 7: Read the following sentences and choose the option that best arranges them in a logical order.

6. Choose the best option:
1. The mechanism of electroweak symmetry breaking is one of the most important issues in the present Particle Physics.
2. They are required to give masses for all quarks and leptons and to guarantee the absence of the gauge anomaly.
3. In the standard electroweak model a fundamental Higgs doublet is introduced to cause the spontaneous symmetry breaking.
4. Supersymmetry (SUSY), eliminating all quadratic divergences, may provide a better theoretical basis to describe a fundamental Higgs boson with a relatively small mass to a high energy cutoff scale, say the Planck scale for example.
5. In the minimal SUSY extension of the standards electroweak model the Higgs sector consists of two chiral superfields of Higgs doublets (H1 and H2 with opposite hypercharges).

(1) 1, 3, 4, 5, 2   (2) 1, 4, 3, 5, 2
(3) 3, 4, 2, 5, 1   (4) 1, 5, 2, 3, 4
(5) 5, 4, 2, 3, 1

7. Choose the best option:

1. Shakespeare did not personally prepare his plays for publication, and no official collection of them appeared until after his death.
2. Some were probably based on actors' memories of plays.
3. Many of these quartos are quite unreliable.
4. A collection of his sonnets, considered by critics to be among the best ever written in English, appeared in 1609.
5. Many individual plays were published during his lifetime in unauthorized editions known as quartos.

(1) 1, 2, 3, 5, 4   (2) 1, 2, 4, 5, 3
(3) 3, 1, 4, 5, 2   (4) 3, 5, 1, 2, 4
(5) 1, 4, 5, 3, 2

Directions for questions 8 to 13: Fill in the blanks with the most appropriate option that follows:

8. The defense proposes to show that the incident that the prosecution so _____ rejects as _____ did indeed take place.

(1) blithely, undesirable
(2) cavalierly, apocryphal
(3) vehemently, factual
(4) persuasively, pointless
(5) convincingly, inevitable

9. Not just the absence of _____ , but also the presence of _____ and honesty is required to bind up the nation's wound.

(1) retribution, camaraderie
(2) guilt, religion
(3) crime, religion
(4) love, austerity
(5) recrimination, insight

10. In many cases in physics, one has to deal simultaneously with collective and single-particle excitations of the system. The collective excitations are usually bosonic in nature while the single-particle excitations are often fermionic. One is therefore led to consider a system which includes bosons and fermions. Hence, _____

Which of the following options is most likely to follow the paragraph given above?

(1) in this book, we discuss application of bosonic particles and their consequences on physics.
(2) in this book, we discuss application of general algebraic theory of mixed Bose-Fermi systems to atomic nuclei.
(3) in this book, we discuss excitations of collective and single particles separately.
(4) in this book, we prove how collective excitations are bosonic and singular excitation are fermionic.
(5) in this book, we prove that collective and singular excitation cannot exist together.

11. Peter has suggested to me that the _____ of highly systematic and _____ planning techniques may have led to a substantial _____ in firms' notions of what is likely to happen in the future, and thus to a _____ in the incidence of mistakes, especially on the part of the _____ modern corporations.

(1) progressive development, exact, decline, decrease, tiny
(2) progress deterioration, exact, increase, decrease, tiny
(3) progressive deterioration, precise, improvement, reduction, large
(4) progressive deterioration, precise, increase, decrease, large
(5) gradual growth, exact, increase, decline, large

12. Clinical practitioners _____ integrated mindfulness _____ treatment of _____ host of emotional and behavioural disorders, _____ borderline personality disorder, major depression, chronic pain, or eating disorders. Number of such practitioners _____ increased substantially.

(1) have, in the, a, but, such
(2) have, in the, the, like, have
(3) were, for, a, like, has
(4) have, for, a, like, has
(5) could, in the, the, such as, have

13. Ontologies are _____ equated with taxonomic hierarchies of classes, class definitions, and _____ subsumption relation, _____ ontologies need not be limited to _____ forms.

(1) often, a, but, such
(2) often, the, yet, such
(3) frequently, a, yet, such
(4) often, a, yet, these
(5) often, the, but, these

Directions for questions 14 to 16: Analyze the following passage and provide appropriate answers for the questions that follow.

Either explicitly or implicitly, our informants suggest that the objects that transfix them are hoped to be conduits to, rather than surrogates for, love, respect, recognition, status, security, escape, or attractiveness. These are the social relations we desire, consciously or subconsciously, beneath the objects that we find so compelling. The value of the objects that we focus our longing upon inheres less in the object or in a Lacanian search for childhood love than in the culture. The hope for the hope that an altered state of being may result keeps the cycle of desire moving.

Desires are nurtured by self-embellished fantasies of a wholly different self, and they may be stimulated by external sources, including advertising, retail displays, films, television programs, stories told by other people, and the consumption behavior of real or imaginary others. But we find that the person who feels strong desire has almost always actively stimulated this desire by attending, seeking out, entertaining, and embellishing such images. The desires that occupy us are vivid and riveting fantasies that we participate in nurturing, growing, and pursuing, through self-seduction.

The social nature of desire implies that preferences of consumers are far from being independent. Yet, choice models assume that preferences of consumers act as individuals. The mimetic aspect of desire creates difficulties for using individual attitude or intention measures to predict adoption of new products whose use will be visible. The notion of desire we have derived suggests that the appeal of the desired object is not inherent in the object itself.

Models that begin with preferences for product attributes or benefits are therefore problematic. The consumer, individually and jointly, has a role in constructing the object of desire, within a social context. What makes consumer desire attach to a particular object is not so much the object's particular characteristics as the consumer's own hopes for an altered state of being, involving an altered set of social relationships.

14. Consider the statement given below as true:

"*The failure of men to transition from being shoppers and consumers to producers and creators has implications about their manliness.*"

Which of the following statements would concur with the above idea and the theme of the main paragraph?

(1) Manliness is no longer socially desirable.
(2) Boys will be boys and will always consume more.
(3) Men will be men and will always create and produce.
(4) Products that fulfil the desire will sell more.
(5) Consumers would like to buy more do-it-yourself kits.

15. Consider the statement given below as true:

"*Men use the plasticity of consumer identity construction to forge atavistic masculine identities based upon an imagined life of self-reliant, pre-modern men who lived outside the confines of cities, families, and work bureaucracies.*"

Which of the following statements would concur with the above idea and the theme of the main paragraph?

(1) Pre-modern man was anti-social.
(2) Products that fulfil the desire of anti-social behaviour will sell more.
(3) Modern men are always anti-social.
(4) Consumer will satisfy their desire of masculine identity through socially visible consumption.
(5) Men will fulfil their desires for maintaining their identity.

16. Consider the statement given below as true:

"*By appropriating fashion discourse, consumers generate personalized fashion narratives and metaphoric and metonymic references that negotiate key existential tensions and that often express resistance to dominant fashion norms in their social milieu or consumer culture at large.*"

Which of the following statements would concur with the above idea and the theme of the main paragraph?

(1) Females in human society are creating personalized fashion narratives.
(2) It is socially desirable to resist all dominant norms.
(3) Feminists consider it socially desirable to resist dominant fashion norms that typify females in human society.
(4) Consumers often resist dominant fashion norms.
(5) Attractiveness increases if one is unique.

Directions for questions 17 to 19: Analyze the following passage and provide appreciate answers for the questions that follow.

Ideas involving the theory probability play a decisive part in modern physics. Yet we will still lack a satisfactory, consistence definition of probability; or, what amounts to much the same, we still lack a satisfactory axiomatic system for the calculus of probability. The relations between probability and experience are also still in need of clarification. In investigating this problem we shall discover what will at first seem an almost insuperable objection to my methodological views. For although probability statements play such a vitally important role in empirical science, they turn out to be in principle *impervious to strict falsification.* Yet this very stumbling block will become a touchstone upon which to test my theory, in order to find out what it is worth. Thus, we are confronted with two tasks. *The first is to provide new foundations for the calculus of probability.* This I shall try to do by developing the theory of probability as a frequency theory, along the lines followed by Richard von Mises, But without the use of what he calls the 'axiom of convergence' (or 'limit axiom') and with a somewhat weakened 'axiom of randomness' *The second task is to elucidate the relations between probability and experience.* This means solving what I call *the problem of decidability statements.* My hope is that the investigations will help to relieve the present unsatisfactory situation in which physicists make much use of probabilities without being able to say, consistently, what they mean by 'probability'.

17. The statement, "The relations between probability and experience are still in need of clarification" implies that:

(1) Probability of an event can always be checked with experience.
(2) Probability of an event can only be gauged historically.
(3) Probability is mathematical while experience is real.
(4) Probability statements can become difficult to disprove without experience.
(5) Probability is futuristic.

18. Author has talked about the two tasks in the above passage. Choose the best option from the following statements relevant to the tasks.

(1) The first task is sufficient to become the touchstone for the author to test his theory.
(2) The second task is sufficient to become the touchstone for the author to test his theory.
(3) Either of the tasks is sufficient for the author to test his theory.
(4) None of the tasks is sufficient for the author to test his theory.
(5) Both the tasks would be important for the author to test his theory.

19. Which one of the following statements can be inferred from the passage?

(1) Physics is the only subject than borrows form the theory
(2) Physics is the only subject where the theory of probability is inaccurately applied.
(3) The theory of probability may be inaccurately applied in other subjects.
(4) Physics is highly mathematical.
(5) Experience relates to physical objects only.

Directions for questions 20 to 22: Analyze the following passage and provide appropriate answers for the questions that follow.

I heartily accept the motto, "That government is best which governs least"; and I should like to see it acted up to more rapidly and systematically. Carried out, it finally amounts to this, which also I believe--"That government is best which governs not at all"; and when men are prepared for it, that will be the kind of governments which they will have. Government is at best but an expedient; but most government are usually, and all governments are sometimes, inexpedient. The objection which have been brought against a standing army, and they are many and weighty, and deserve to prevail, may also at last be brought against a standing government. The standing army is only an arm of the standing government. The government itself, which is only the mode which the people have chosen to execute their will, is equally liable to be abused and perverted before the people can act through it.

After all, the practical reason why, when the power is once in the hands of the people, a majority are permitted, and for a long period continue, to rule is not because they are most likely to be in the right, nor because this seems fairest to the minority, but because they are physically the strongest. But a government in which the majority rules in all cases cannot be based on justice, even as far as men understand it. Can there not be a government in which the majorities do not virtually decide right and wrong, but conscience? -- in which majorities decide only those questions to which the rule of expediency is applicable? Must the citizen ever for a moment or in the least degree, resign his conscience to legislator? Why has every man a conscience then? I think that we should be men first, and subjects afterward. It is not desirable to cultivate a respect for the law, so much as for the right The only obligation which I have a right to assume is to do at any time what I think right. It is truly enough said that a corporation has no conscience; but a corporation of conscientious men is a corporation with a conscience. Law never made men a whit more just; and, by means of their respect for it, even the well-disposed are daily made the agents on injustice.

20. According to the author of the paragraph, army is _____ ?

   (1) required   (2) fallible
   (3) must   (4) necessary evil
   (5) not required

21. *In general,* when would government of majority be good for minorities?

   (1) when it is fair.
   (2) when it is right.
   (3) when it abides by the law.
   (4) when it is conscientious.
   (5) such a government cannot exits.

22. Which of the following statements would the author agree the most with?

   (1) Men are bigger than the governments.
   (2) Business houses are best for the growth of a society.
   (3) Governments and armies are not required.
   (4) Concept of nations is redundant.
   (5) Democracy is best for citizens.

Directions for questions 23 to 25: Analyze the following passage and provide appropriate answers for the questions that follow.

The assumption of rationality puts an economist in a position to "explain" some features of market behavior, such as the dispersion of prices of psychophysically identical goods such as beer according to the amount spent on advertising them (no doubt, the fact that most beer is bought by individuals rather than as raw material by firms, which could be expected to be more rational than individuals, is part of the explanation.) Clearly something is wrong somewhere with the usual model of a competitive market with perfect information, for the virtually content less advertising cannot be considered as increasing the utility of beer in an obvious way. But if one can keep the assumption of rational actors, one need not get into the intellectual swamp of sentiment nor of preferences that depend on price. If one agrees, for example, that consumers use advertising as an index of the effort a producer will put into protecting its reputation and so as a predictor of quality control efforts, one can combine it

with the standard mechanism and derive testable consequences from it

But why, logically speaking, does it not matter that any of us, with a few years' training, could disprove the assumptions? It is for the same reason that the statistical mechanics of gases is not undermined when Rutherford teaches a lot of only moderately bright physicists to use X-ray diffraction to disprove the assumption that molecules are little hard elastic balls. The point is, departures that Rutherford teaches us to find from the mechanism built into statistical mechanics are small and hardly ever systematic at level of gases. Ignorance and error about the quality of beer is also, unlikely to be systematic at the level of the consumers' beer market, though it would become systematic if buyers imposed quality control procedures on sellers in contracts of sale (as corporations very often do in their contracts with suppliers). So when we find beers that advertising can make the ignorance and error systematic at the level of markets, just as lasers with wavelengths resonant with the internal structures and sizes of molecules can make molecular motions in gases systematic. The interesting one is that virtually content-less advertising is nevertheless information to a rational actor.

23. Which of the following statements would be the closest to the arguments in the passage?

   (1) Individuals are more rational than firms.
   (2) Firms are rational.
   (3) Firms are more rational than individuals.
   (4) Firms are, most of the times, more rational than individuals.
   (5) Market behavior of psychophysical goods would be the same as that of physical goods.

24. Why has the author referred to Rutherford in the passage?

   (1) To prove that molecules are elastic.
   (2) To highlight that we should not compare apples and oranges.
   (3) To hint that only very good students Physics taught by Rutherford.
   (4) To equate beer with little hard elastic balls.
   (5) To state that Mechanics is more amenable to application of statistics than gasses.

25. Which of the following, as per author, are psychophysical goods?

   1. Concrete
   2. Car
   3. Mobile Phone

   (1) 1 and 2   (2) 2 and 3
   (3) 1 and 3   (4) 1, 2 and 3
   (5) None of these

Directions for questions 26 to 28: Analyze the following passage and provide appropriate answers for the questions that follow.

The ways by which you may get money almost exception lead downwards. To have done anything by which you earned money merely is to have been truly idle or worse. If the laborer gets no more than the wages which his employer pays him, he is cheated, he cheats himself. If you would get money as a writer or lecturer, you must be popular, which is to go down perpendicularly. Those services which the community will most readily pay for, it is most disagreeable to render. You are paid for being something less than a man. The State does not commonly reward a genius any more wisely. Even the poet laureate would rather not have to celebrate the accidents of royalty. He must be bribed with a pipe of wine; and perhaps another poet is called away from his muse to gauge that very pipe. The aim of the laborer should be, not to get his living, to get "a good job." but to perform well a certain work; and even in a pecuniary sense, it would be economy for a town to pay its laborers so well that they would not feel that they were working for low ends, for a livelihood merely, but for scientific, or even moral ends. Do not hire a man who does your work for money, but him who does it for love of it.

The community has no bribe that will tempt a wise man. You may raise money enough to tunnel a mountain, but you cannot raise money enough to hire a man who is minding his own business. An efficient and valuable man does what he can, whether the community pays him for it or not. The inefficient offer their inefficiency to the highest bidder, and are forever expecting to be put into office. One would suppose that they were rarely disappointed. God gave the righteous man a certificate entitling him to food and raiment, but the unrighteous man found a

facsimile of the same in God's coffers, and appropriated it, and obtained food and raiment like the former. It is one of the most extensive systems of counterfeiting that the world has seen. I did not know that mankind was suffering for want of gold. I have seen a little of it. I know that it is very malleable, but not so malleable as wit. A grain of gold will gild a great surface, but not so much as a grain of wisdom.

26. Which of the following would the author disagree most with?

    (1) Setting up a factory in a rural area
    (2) Advertising for tooth paste
    (3) Studying in a business school
    (4) Betting in a casino
    (5) Working for an investment bank

27. Which of the following could be a good title for the above passage?

    (1) Money and Work
    (2) God Rush
    (3) Work is Worship
    (4) In Search for God
    (5) God is Gold

28. The author of the passage went on to say: *"We are provincial, because we do not find at home our standards; because we do not worship truth, but the reflection of truth; because we are warped and narrowed by an exclusive devotion to trade and commerce and manufactures and agriculture and the like, which are but means, and not the end."*

    Which of the following, as per author, could have been *the end* (last words in the lines above)?

    (1) Economic growth of society
    (2) Realization of self
    (3) Happy family life
    (4) Strong and powerful nation
    (5) Distribution of wealth

Section B – Decision Making

Directions for questions 29 to 31: Read the following case – let and answer the that follow

Ms. Banerjee, class teacher for 12th standard, wants to send teams (based on past performance) of three students each to district, state, national, and international competition in mathematics. Till now, every student of the class has appeared in 100 school level tests. The students had following distribution of marks in the tests, in terms of "average" and "number of times a student scored cent per cent marks".

Student	Average	Number of times a student scores cent per cent
1	70	7
2	60	15
3	65	8
4	70	1
5	65	6
6	65	10
7	65	4
8	60	12
9	65	3
10	60	8
11	70	1
12	65	6
13	70	2
14	60	20
15	65	5

Ms. Banerjee has carefully studied chances of her school winning each of the competitions. Based on in-depth calculations, she realized that her school is quite likely to win district level competition but has low chances of winning the international competition. She listed down the following probabilities of wins for different competitions. Prize was highest for international competition and lowest for district level competition (in that order).

Competition	Probability of win
District	0.95
State	0.6
National	0.1
International	0.05

All the students are studying in the school for last twelve years. She wanted to select the best team for all four competitions (Ms. Banerjee had no other information to select students).

29. Which of three members should form the team for the International competition?

(1) 4, 11, 14   (2) 2, 8, 14
(3) 1, 6, 12   (4) 13, 14, 15
(5) 1, 3, 4

30. Which of the following members should constitute the team for the district level competition?

(1) 4, 11, 14   (2) 1, 4, 11
(3) 4, 5, 6   (4) 4, 11, 13
(5) Any team can win the competition

31. Ms. Banerjee has to select the team for national competition after she has selected the team for international competition. A student selected for international competition cannot be a part of national competition. Which is the best team for the national competition?

(1) 1, 7, 4
(2) 8, 9, 10
(3) 2, 8, 14
(4) 3, 6, 1
(5) Any of remaining students, as it would not matter

Directions for questions 32 to 35: Answer questions based on information that is provided.

32. The main issues of interpretation arising from the work of professionally trained anthropologists are that they are late in colonial/post – colonial trajectories, because professional training shapes their interpretations. However, within field of interest and training, their works are most thorough and systematic

The best conclusion drawn from the above paragraph is analogous to:

(1) Heisenberg uncertainty principle, which states that speed and position cannot be determined simultaneously.

(2) Cultural relativism, which states that two or more than two cultures cannot be compared.

(3) Personal relativism, which states that one should not study anthropological phenomenon for personal gains.

(4) Conclusive relativism, which states that anthropologists should not knowingly color their findings.

(5) Communicative relativism, which states that anthropologists should not be selective in communicating their findings.

33. Consider merit pay for teachers. Schools face constant pressure to change their management approaches to improve performance, which is usually assessed by standardized reading, math, and science scores. In most school teacher's pay is determined by seniority, years of total teaching experience, and credentials. Pay is rarely based on performance, which is contrary to the belief among parents and private sector. Parents and business leaders lament that there are no carrots/sticks used to motivate teachers. Consequently, there has been greater push to implement some form of merit pay to improve the motivation

Which of the following statements will disapprove the claim of the parents and business leaders?

(1) A recent study suggested that teachers are self – motivated.

(2) Teachers are largely motivated, by financial incentives; so pay for performance will induce greater and more effective effort.

(3) Learning cannot be measured reliably and accurately by a test given once a year.

(4) Teaching is a solo – activity, there is a little interdependence with other co – curricular and extra – curricular activities in the school.

(5) To err is human. And hence *stick* should be used to reduce errors.

34. Read the following newspaper report:

In a new study by Harvard School of Public Health (HSPH), researchers explored how caffeine can serve as a "mild anti – depressant". They concluded that "drinking several cups of coffee daily appears to reduce the risk of suicide". Data pulled in from three large studies in the US showed that the suicide risk of those who drank two to four cups of caffeinated coffee a day was about half of those who drank decaffeinated coffee or very little or no coffee. In the studies, a respondent's caffeine consumption was assessed every four years through a questionnaire. The respondents were all adults, and the study was published online. The authors, however, cautioned the public from increasing coffee intake as it could result in "unpleasant side effects". "Overall, our results suggest that there is little further benefit for consumption above two to three cups/day or 400 mg of caffeine/day," wrote the researchers. The authors observed that there` was no major difference in suicide risk for adults who drank two to three cups a day from those who drank four cups or more.

Which of the following shaped graph would best capture the above paragraph(x – axis represents "coffee intake" and "Y – axis represents "suicidal tendency")?

(1) A straight line   (2) Saw tooth curve

(3) S shaped curve   (4) U shaped curve

(5) L shaped curve

35. A group of nine runners will finish the 400 meters race in a certain order. The runners are: Ashok, Benjamin, Chetan, Divya, Eshant, Girish, Himani, and Irravaty. They all finish at different times, and their finishing order is as follow:

- Faneesh finishes before Ashok
- Divya finishes before Benjamin and Eshant
- Irravaty finishes after Chetan
- Girish finishes after Ashok

Which is the best position Girish can finish?

(1) First   (2) Second

(3) Third   (4) Fourth

(5) Fifth

Directions for questions 36 to 39: Read the following case – let and answer the question that follow

Krishna Reddy was the head of a pharmaceutical company that was trying to develop a new product. Reddy, along with his friend Prabhakar Rao, assessed that such products had mixed success. Reddy and Rao realized that if a new product (a drug) was a success, it may result in sales of 100 crores but if it is unsuccessful, the sales may be only 20 crores. They further assessed that a new drug was likely to be successful 50% of times. Cost of launching the new drug was likely to be 50 crores.

36. How much profit can the company expect to earn if it launches the new drug(suppose there are no additional costs)?

(1) 12 crores   (2) 10 crores
(3) 10.5 crores   (4) 11 crores
(5) 11.5 crores

Now, Reddy and Rao were in a quandary whether the company should go ahead and market the drug. They contacted Raj Adduri, a common friend for advice. Adduri was of the opinion that given the risky nature of launch, it may be a better idea to test the market. Rao and Reddy realized test marketing would cost 10 crores. Adduri told them the previous test marketing results have been favorable 70% of times and success rate of products favorably tested was 80%.Further, when test marketing results were unfavorable; the products have been successful 30% of the times.

37. How much profit can the company expect to make if the product is launched after favorable test marketing results.(assume there are no additional costs)?

(1) 11.5 crores   (2) 10 crores
(3) 8.5 crores   (4) 13.8 crores
(5) 6 crores

38. What is the probability of product failure if Reddy and Rao decides to test market it?

(1) 0.21   (2) 0.35
(3) 0.14   (4) 0.28
(5) Cannot be computed

39. If Rao and Reddy decides to launch the product despite unfavourable test marketing, how much profit can the company expect to earn?

(1) 13.2 crores   (2) 36.8 crores
(3) 46.8 crores   (4) 16 crores
(5) 10 crores

Directions for questions 40 to 42: Read the following case – let and answer the questions that follow

Intercontinental Business Manufacturing (IBM) was doing a roaring business. Demand of the products was high and supply of raw – material was abundant. IBM was manufacturing three different products Some customers bought two types of products and some bought only one. The three products were "quickie – quick", "run – of – the – mill", and "maxi – max". Customers were not complaining loudly.
Ram, the product manager, was confused! Demand for "quickie – quick "was increasing .Raw material suppliers wanted to supply lower quality at cheaper price. It was profitable for the company to increase production .Quality department was not happy with the product. Ram met Rahim, the CEO, who, as always, wanted higher profits. He said that IBM will set up a committee for improving the quality.

40. What *must not* be done by Ram?

(1) Only produce "quickie – quick" as it gives highest profits.
(2) Increase the production for "quickie – quick" and ask the supplier for better quality raw material.
(3) Maintain the level of production for "quickie – quick" and ask the supplier for better quality raw material.
(4) Reduce the production of "quickie – quick" till committee submits its report.
(5) Stop production of "quickie – quick" till committee submits its report.

41. Rahim set up a "brand" committee comprising of a few selected managers, headed by Robert. The committee proposed that IBM should continue to manufacture the three differently branded products. It also proposed to recruit a new brand manager for improving brand image of the products. It agreed with Rahim that the company

should increase the price. Rocket Singh, head of sales, was confused because he realized that customers were miffed with "run – of – the – mill" and "maxi – max".

What should Rocket Singh do?

(1) Launch one more product to increase sales.
(2) Stop production of quickie – quick.
(3) Launch a campaign on social media to increase awareness about company's products.
(4) Send an anonymous email to all the employees highlighting customer dissatisfaction.
(5) Conduct a research study to find out the reason for customer's dissatisfaction.

42. Some of the managers in production department were discussing the problems faced in shipping products in time. They complained that they had to undertake responsibility of creating financial and marketing plans in addition to responsibility of production planning. At the same time, finance and marketing managers were to be involved in preparing production plans. It was expected that this will reduce customer complaints. It was rumored that these changes were initiated by the managers educated in the U.S.

Which of the following is the best possible course of action available to the affected managers?

(1) Create a union to safeguard their rights.
(2) File a law suit against the company.
(3) Create a forum for discussion and resolution of issues.
(4) Register a complaint with the human rights body.
(5) Go for further education to the U.S.

Directions for questions 43 to 46: Please read the three reports (newspaper articles) on ranking of different players and products in smart phones industry and answer the questions that follow.

Report 1: (Feb, 2013)

Apple nabs crown as current top US mobile phone vendor

Apple's reign may not be long, as Samsung is poised to overtake Apple in April, 2013.

For the first time since Apple entered the mobile phone market in 2007, it has been ranked the top mobile phone vendor in the US. For the latter quarter of 2012, sales of its iPhone accounted for 34 percent of all mobile phone sales in the US - including feature phones – according to the latest data from Strategy Analytics.

While the iPhone has consistently been ranked the top *smartphone* sold in the US, market research firm NPD noted that feature phone sales have fallen off a cliff recently, to the point where 8 out of every 10 mobile phones sold in the US are now smartphones. That ratio is up considerably from the end of 2011, when smartphones had just cracked the 50 percent mark. Given this fact it's no surprise that Apple, which only sells smartphones, has been able to reach the top of the overall mobile phone market domestically.

For the fourth quarter of 2012, Apple ranked number one with 34 percent of the US mobile market, up from 25.6 percent year over year. Samsung grew similarly, up to 32.3 percent from 26.9 percent – but not enough to keep from slipping to second place. LG dropped to 9 percent from 13.7 percent, holding its third place spot. It should be noted that Samsung and LG both sell a variety of feature phones in addition to smartphones.

Looking only at smartphones, the ranking is a little different according to NPD. Apple holds the top spot with 39 percent of the US smartphone market, while Samsung again sits at number two with 30 percent. Motorola manages to rank third with 7 percent, while HTC dropped to fourth with 6 percent. In the US smartphone market, LG is fifth with 6 percent. Note how the percentages aren't all that different from overall mobile phone market share – for all intents and purposes, the smartphone market is the mobile phone market in the US going forward.

Still, Samsung was the top mobile phone vendor overall for 2012, and Strategy Analytics expects Samsung to be back on top soon. "Samsung had been the number one mobile phone vendor in the US since 2008, and it will surely be keen to recapture that title in 2013 by launching improved new models such as the rumored Galaxy S4".

And while Apple is the top vendor overall among smartphones, its iOS platform is still second to the Android platform overall. Samsung is the largest vendor selling Android-based smartphones, but Motorola, HTC, LG, and others also sell Android devices, giving the platform a clear advantage over iOS both domestically and globally.

Report 2: Reader's Response (2013, Feb)

I don't actually believe the numbers for Samsung. Ever since the debacle in early 2011, when Lenovo called into question the numbers Samsung was touting for tablet shipments, stating that Samsung had only sold 20,000 of the 1.5 million tablets they shipped into the US the last quarter of 2010, Samsung (who had no response to Lenovo) has refused to supply quarterly sales numbers for smartphones or tablets. That's an indication that their sales aren't what analysts are saying.

We can look to several things to help understand why. In the lawsuit between Apple and Samsung here last year, both were required to supply real sales numbers for devices under contention. The phones listed turned out to have sales between one third and one half of what had been guessed by IDC and others. Tablet sales were even worse. Of the 1.5 million tablets supposedly shipped to the US during that time, only 38,000 were sold.

Then we have the usage numbers. Samsung tablets have only a 1.5% usage rate, where the iPad has over 90%. Not as much a difference with the phones but it's still overwhelmingly in favor of iPhone.

The problem is that with Apple's sales, we have actual numbers to go by. The companies who estimate can calibrate what they do after those numbers come out. But with Samsung and many others, they can't ever calibrate their methods, as there are no confirming numbers released from the firms. A few quarters ago, as a result, we saw iSupply estimate Samsung's

smartphone sales for the quarter at 32 million, with estimates from others all over the place up to 50 million. Each time some other company reported a higher number for that same quarter, the press dutifully used that higher number as THE ONE. But none of them was the one.

Without accurate self-reporting of actual sales to the end users, none of these market share charts are worth a damn!

43. If you analyze the three reports above, which of the following statements would be the best inference?

(1) Newspapers publish completely wrong data.
(2) All three reports have been bought by the companies.
(3) Newspapers may report selectively.
(4) Apple is leading but its dominance in Korean market is definitely under threat.
(5) Customer's response, in report 2, is neutral and objective.

44. Assume report1 and report3 are both correct, which of the following can be a reason for seemingly divergent ranks of different companies and their products?

(1) iPhone4, another product from Apple, could have been the best seller in the U.S.
(2) HTC-One was the most preferred device in Japan.
(3) OnDevice included Google in the list because it is an important player in Android market.
(4) Customer satisfaction never leads to higher customer loyalty.
(5) None of the above.

45. If report1 and report3 are both correct, which of the following can be a reason for seemingly divergent ranks reported for different companies and their products?

(1) OnDevice has been paid by Motorola to publish.
(2) Customers in France, in report3, have voted Samsung as the favorite company.
(3) Customers in Japan, in report3, have voted Samsung as the favorite company.
(4) Sales and satisfaction may not be perfectly related with each other.
(5) None of the above.

46. Which of the following is more likely to be a correct conclusion about the respondent/reader in report2?

(1) The reader is an Apple user.
(2) If the reader is an Apple user, his usage rate is higher.
(3) The reader is a frequent user of HTC One.

(4) The reader does not like Android platform.
(5) The reader wants more objective data to be released by the companies.

Direction for questions 47 to 49: Read the following case-let and choose the best alternative for the questions that follow.

Ajay was thinking deeply about a problem that his organization, a business consulting company, faced. Globalization had affected his company like many other companies. Despite the downturn, the current revenues remained healthy. However, Ajay knew it was inevitable that the company could not do business the same way. The complexity of managing the business had increased with time. Consultants were under pressure to deliver good and innovative solutions. The organization had consultants from different age groups having a good mix of domain and industry expertise. It was a flat organization with three levels. The biggest challenge for Ajay was to have consultants with latest knowledge who would also earn revenues. Getting additional business was a challenge as all the consultants were busy and it was very difficult to hire new consultants.

47. Some of the consultants were adept at applying old solutions to new problems. Ajay was not very sure if this would work for long. Some of the clients had complained about the performance of old and reputed consultants. Ajay was mulling over the following five solutions to tackle this problem.

1. Decrease time spent on client interaction and increase time spent for generating solutions.
2. Increase support staff to help consultants to remain updated.
3. Decrease the number of simultaneous projects handled by consultants.
4. Make it compulsory for consultants to work on inter-industry and inter-domain problems.
5. Recruit more consultants.

Which of the following would be the best sequence of decisions taken by Ajay (starting from immediate to distant)?

(1) 3, 2, 1, 5, 4   (2) 4, 3, 2, 1, 5
(3) 5, 4, 3, 2, 1   (4) 2, 4, 5, 1, 3
(5) 1, 5, 4, 3, 2

48. After Ajay implemented some of the steps mentioned above, consultants wanted to renegotiate their contract with the organization. It seems that the organization had never mentioned that consultants have to work across industries and domains. Some of the old consultants were reluctant to change their ways, while many of the younger consultants were willing to follow Ajay's advice. Which of the following decision can be taken by Ajay to handle this situation?

(1) Retrench old consultants and recruit young consultants.

(2) Pressurize non-conformists by giving preferential treatment to the conformists.

(3) Negotiate with the old consultants and communicate that the new rules would apply to the new consultants only.

(4) Do nothing and wait for a right solution to emerge, as with time resistance would die down.

(5) Discuss the issue in an open house and let solutions emerge democratically.

49. Ajay was to retire in five years and he wanted to leave behind a legacy. Order the following activities, from the most important to the least important, that Ajay should undertake in next five year:

1. Do nothing.
2. Set a future direction for the organization in these challenging times.
3. Benchmark performance with respect to the best consulting company in industry.
4. Empower senior consultants and at the same time seek opinion of all others for handling future challenges.
5. Infuse fresh thinking by hiring outsiders.

Choose the best option from the following sequences

(1) 1, 2, 3, 4   (2) 2, 3, 4, 5
(3) 3, 4, 2, 1   (4) 2, 5, 3, 1
(5) 2, 5, 4, 3

Direction for questions 50 to 52: Read the following case-let and answer the questions that follow

Rajinder Singh was 32 years old from the small town of Bhathinda, Punjab. Most of the families living there had middle class incomes, with about 10% of the population living below the poverty level. The population consisted of 10 percent small traders, 30 percent farmers, besides others. Rajinder liked growing up in Bhathinda, where people knew and cared about each other.

Even as a youngster it was clear that Rajinder was smart and ambitious. Neighbors would often say, "Someday you're going to make us proud!" He always had a job growing up at Singh's General Store – Uncle Balwant's store. Balwant was a well-intentioned person. Rajinder loved being at the store and not just because Balwant paid him well. He liked helping customers, most of who were known by the nicknames. Setting up displays and changing the merchandise for different seasons and holidays was always exciting. Uncle Balwant had one child and off late, his interest in business had declined. But he had taught Rajinder 'the ins and outs of retailing'. He had taught Rajinder everything, including ordering merchandise, putting on a sale, customer relations, and keeping the books.

The best part about working at the store was Balwant himself. Balwant loved the store as much as Rajinder did. Balwant had set up the store with a mission to make sure his neighbors got everything they needed at a fair price. He carried a wide variety of goods, based on the needs of the community. If you needed a snow shovel or piece of jewelry for your wife, it was no problem – Singh's had it all. Rajinder was impressed by Balwant's way of handling and caring for customers. If somebody was going through "hard times", Balwant somehow knew it. When they came into the store, Balwant would make them feel comfortable, and say something like, "you know Jaswant, let's put everything on credit today". This kind of generosity made it easy to understand why Balwant was loved and respected throughout the community.

Rajinder grew up and went to school and college in Bhathinda. Later on, he made it to an MBA program in Delhi. Rajinder did well in the MBA course and was

goal oriented. After first year of his MBA, the career advisor and Balwant advised Rajinder for an internship at Bigmart. That summer, Rajinder was amazed by the breadth and comprehensiveness of the internship experience. Rajinder got inspired by the life story of the founder of Bigmart, and the value the founder held. Bigmart was one of the best companies in the world.

The people that Rajinder worked for at Bigmart during the internship noticed Rajinder's work ethic, knowledge, and enthusiasm for the business. Before the summer ended, Rajinder had been offered a job as a Management Trainee by Bigmart, to start upon graduation. Balwant was happy to see Rajinder succeed. Even for Rajinder, this was a dream job – holding the opportunity to move up the ranks in a big company. Rajinder did indeed move up the ranks quickly, from management trainee, to assistant store manager, to supervising manager of three stores, to the present position – Real Estate Manager, North India. This job involved locating new sites within targeted locations and community relations.

One day Rajinder was eagerly looking forward to the next assignment. When he received email for the same, his world came crashing down. He was asked to identify next site in Bhathinda. It was not that Rajinder didn't believe in Bigmart's explanation. What was printed in the popular press, especially the business press, only reinforced Rajinder's belief in Bigmart. An executive viewed as one of the wisest business persons in the world was quoted as saying, "Bigmart had been a major force in improving the quality of life for the average consumer around the world offering great prices on good, giving them one stop solution for almost everything." Many big farmers also benefitted through low prices, as middlemen were removed. At the same time, Rajinder knew that opening a new Bigmart could disrupt small business in Bhathinda. Some local stores in small towns went out of business within a year of the Bigmart's opening.

In Bhathinda, one of the local stores Singh's, now run by Balwant's son, although Balwant still came in every day to "straighten out the merchandise." As Rajinder thought about this assignment, depression set in, and the nightmares followed. Rajinder was frozen in time and space. Rajinder's nightmares involved Balwant screaming something- although Rajinder could not make out what Balwant was saying. This especially troubled Rajinder, since Balwant never raised his voice.

Rajinder didn't know what to do – who might be helpful? Rajinder's spouse, who was a housewife? Maybe talking it through could lead to some positive course of action. Rajinder's boss? Would Bigmart understand? Could Rajinder really disclose the conflict without fear? Uncle Balwant? Should Rajinder really disclose the situation and ask for advise? He wanted a solution that would make all satkeholders happy.

50. Who is the best person for Rajinder to talk to?

    (1) Wife
    (2) Boss
    (3) Let time take its own course
    (4) Balwant
    (5) His colleagues in the office

51. After delibertation with many people and a lot of research, Rajinder came across a study published in leading journal, which stated that most local farmers benefited because Bigmart bought agricultural produce directly from the farmers.

Which of the following actions would you prefer Rajinder to take, after he got this fresh information?

(1) Since farmers benefit from Bigmart's presence, Rajinder should be happy with Bigmart's presence in Bhatinda

(2) Rajinder should undertake a new study to find out influence of Bigmart on local farmers

(3) Rajinder should see this as an opportunity to take concerns of local traders to the top management of Bigmart in India. It may help Bigmart to develop new solutions that can benefit Bigmart, retailers, farmers and consumers.

(4) Quit job at Bigmart and start another big retail chain to compete with Bigmart

(5) Request his boss to transfer him to new location, which has a low percentage of mom and pop stores. This would reduce Rajinder's discomfort.

52. Which is the right ascending order, in terms of proportion of population, benefitting from Bigmart, in and around Bhathinda?

    (1) Consumers, farmers, retailers

    (2) Farmers, consumers, retailers

    (3) Retailers, farmers, consumers

    (4) Farmers, retailers, consumers

    (5) Consumers, retailers, , farmers

Section C – Quantitative Ability

53. x, 17, $3x – y^2 – 2$, and $3x + y^2 – 30$, are four consecutive terms of an increasing arithmetic sequence. The sum of the four number is divisible by:

(1) 2   (2) 3   (3) 5

(4) 7   (5) 11

54. In quadrilateral PQRS, PQ = 5 units, QR = 17 units, RS = 5 units, and PS = 9 units. The length of the diagonal QS can be:

(1) > 10 and < 12   (2) > 12 and < 14

(3) > 14 and < 16   (4) > 16 and < 18

(5) cannot be determined

55. Consider the formula,

$S = \dfrac{\alpha * \omega}{\tau + \rho + \omega}$, where all the parameters are

positive integers. If ω is increased and α, τ and ρ are kept constant, then S:

(1) increases

(2) decreases

(3) increases and then decreases

(4) decreases and then increases

(5) cannot be determined

56. Prof. Suman takes a number of quizzes for a course. All the quizzes are out of 100. A student can get an A grade in the course if the average of her scores is more than or equal to 90.Grade B is awarded to a student if the average of her scores is between 87 and 89 (both included). If the average is below 87, the student gets a C grade. Ramesh is preparing for the last quiz and he realizes that he will score a minimum of 97 to get an A grade. After the quiz, he realizes that he will score 70, and he will just manage a B. How many quizzes did Prof. Suman take?

(1) 6   (2) 7   (3) 8

(4) 9   (5) None of these

57. A polynomial "$ax^3 + bx^2 + cx + d$" intersects x-axis at 1 and –1, and y-axis at 2. The value of b is:

(1) – 2   (2) 0   (3) 1

(4) 2   (5) Cannot be determined

58. The sum of the possible values of X in the equation $|X + 7| + |X – 8| = 16$ is:

(1) 0   (2) 1   (3) 2

(4) 3   (5) None of the above

59. There are two windows on the wall of a building that need repairs. A ladder 30 m long is placed against a wall such that it just reaches the first window which is 26 m high. The foot of the ladder is at point A. After the first window is fixed, the foot of the ladder is pushed backwards to point B so that the ladder can reach the second window. The angle made by the ladder with the ground is reduced by half, as a result of pushing the ladder. The distance between points A and B is

(1) < 9 m

(2) ≥ 9 m and < 9.5 m

(3) ≥ 9.5 m and < 10 m

(4) ≥ 10 m and < 10.5 m

(5) ≥ 10.5 m

60. Amitabh picks a random integer between 1 and 999, doubles it and gives the result to Sashi. Each time Sashi gets a number from Amitabh, he adds 50 to the number, and gives the result back to Amitabh, who doubles the number again. The first person, whose result is more than 1000, loses the game. Let 'x' be the smallest initial number that results in a win for Amitabh. The sum of the digits of 'x' is:

(1) 3   (2) 5   (3) 7

(4) 9   (5) None of these

61. Consider four natural numbers: x, y, $x + y$, and $x – y$. Two statements are provided below:

  I. All four numbers are prime numbers.

  II. The arithmetic mean of the numbers is greater than 4.

Which of the following statements would be sufficient to determine the sum of the four numbers?

(1) Statement I.
(2) Statement II.
(3) Statement I and Statement II.
(4) Neither Statement I nor Statement II.
(5) Either Statement I or Statement II.

62. Triangle ABC is a right angled triangle. D and E are mid points of AB and BC respectively. Read the following statements.

  I.   AE = 19
  II. CD = 22
  III. Angle B is a right angle.

Which of the following statements would be sufficient to determine the length of AC?

(1) Statement I and Statement II.
(2) Statement I and Statement III.
(3) Statement II and III.
(4) Statement III alone.
(5) All three statements.

63. There are two circles C_1 and C_2 of radii 3 and 8 units respectively. The common internal tangent, T, touches the circles at points P_1 and P_2 respectively. The line joining the centers of the circles intersects T at X. The distance of X from the center of the smaller circle is 5 units. What is the length of the line segment P_1P_2?

(1) ≤ 13   (2) > 13 and ≤ 14
(3) > 14 and ≤ 15   (4) > 15 and ≤ 16
(5) > 16

64. The probability that a randomly chosen positive divisor of 10^{29} is an integer multiple of 10^{23} is: a^2/b^2, then '$b - a$' would be:

(1) 8   (2) 15   (3) 21
(4) 23   (5) 45

65. Circle C_1 has a radius of 3 units. The line segment PQ is the only diameter of the circle which is parallel to the X axis. P and Q are points on curves given by the equations $y + a^x$ and $y = 2a^x$ respectively, where $a < 1$. The value of a is:

(1) $\dfrac{1}{\sqrt[6]{2}}$ (2) $\dfrac{1}{\sqrt[6]{3}}$ (3) $\dfrac{1}{\sqrt[3]{6}}$

(4) $\dfrac{1}{\sqrt{6}}$ (5) None of the above

66. There are two squares S_1 and S_2 with areas 8 and 9 units, respectively. S_1 is inscribed within S_2, with one corner of S_1 on each side of S_2. The corners of the smaller square divides the sides of the bigger square into two segments, one of length 'a' and the other of length 'b', where, $b > a$. A possible value of 'b/a', is:

(1) ≥ 5 and < 8   (2) ≥ 8 and < 11
(3) ≥ 11 and < 14   (4) ≥ 14 and < 17
(5) > 17

67. Diameter of the base of a water – filled inverted right circular cone is 26 cm. A cylindrical pipe, 5 mm in radius, is attached to the surface of the cone at a point. The perpendicular distance between the point and the base (the top) is 15 cm. The distance from the edge of the base to the point is 17 cm, along the surface. If water flows at the rate of 10 meters per minute through the pipe, how much time would elapse before water stops coming out of the pipe?

(1) < 4.5 minutes
(2) ≥ 4.5 minutes but < 4.8 minutes
(3) ≥ 4.8 minutes but < 5 minutes
(4) ≥ 5 minutes but < 5.2 minutes
(5) ≥ 5.2 minutes

68. Aditya has a total of 18 red and blue marbles in two bags (each bag has marbles of both colors). A marble is randomly drawn from the first bag followed by another randomly drawn from the second bag, the probability of both being red is 5/16. What is the probability of both marbles being blue?

(1) $\dfrac{1}{16}$ (2) $\dfrac{2}{16}$ (3) $\dfrac{3}{16}$

(4) $\dfrac{4}{16}$ (5) None of the above.

69. Consider a rectangle ABCD of area 90 units. The points P and Q trisect AB, and R bisects CD. The diagonal AC intersects the line segments PR and QR at M and N respectively. What is the area of the quadrilateral PQMN?

(1) > 9.5 and ≤ 10   (2) > 10 and ≤ 10.5
(3) > 10.5 and ≤ 11   (4) > 11 and ≤ 11.5
(5) > 11.5

70. Two numbers, 297_B and 792_B, belong to base B number system. If the first number is a factor of the second number then the value of B is:

(1) 11   (2) 12   (3) 15
(4) 17   (5) 19

71. A teacher noticed a strange distribution of marks in the exam. There were only three distinct scores: 6, 8 and 20. The mode of the distribution was 8. The sum of the scores of all the students was 504. The number of students in the in most populated category was equal to the sum of the number of students with lowest score and twice the number of students with the highest score. The total number of students in the class was:

(1) 50   (2) 51   (3) 53
(4) 56   (5) 57

72. Read the following instruction carefully and answer the question that follows:

Expression $\sum_{n=1}^{13} \frac{1}{n}$ can also be written as $\frac{x}{13!}$

What would be the remainder if x is divided by 11?

(1) 2   (2) 4   (3) 7
(4) 9   (5) None of the above

73. A rectangular swimming pool is 48 m long and 20 m wide. The shallow edge of the pool is 1 m deep. For every 2.6 m that one walks up the inclined base of the swimming pool, one gains an elevation of 1 m. What is the volume of water (in cubic meters), in the swimming pool? Assume that the pool is filled up to the brim.

(1) 528   (2) 960   (3) 6790
(4) 10560   (5) 12960

74. The value of the expression:
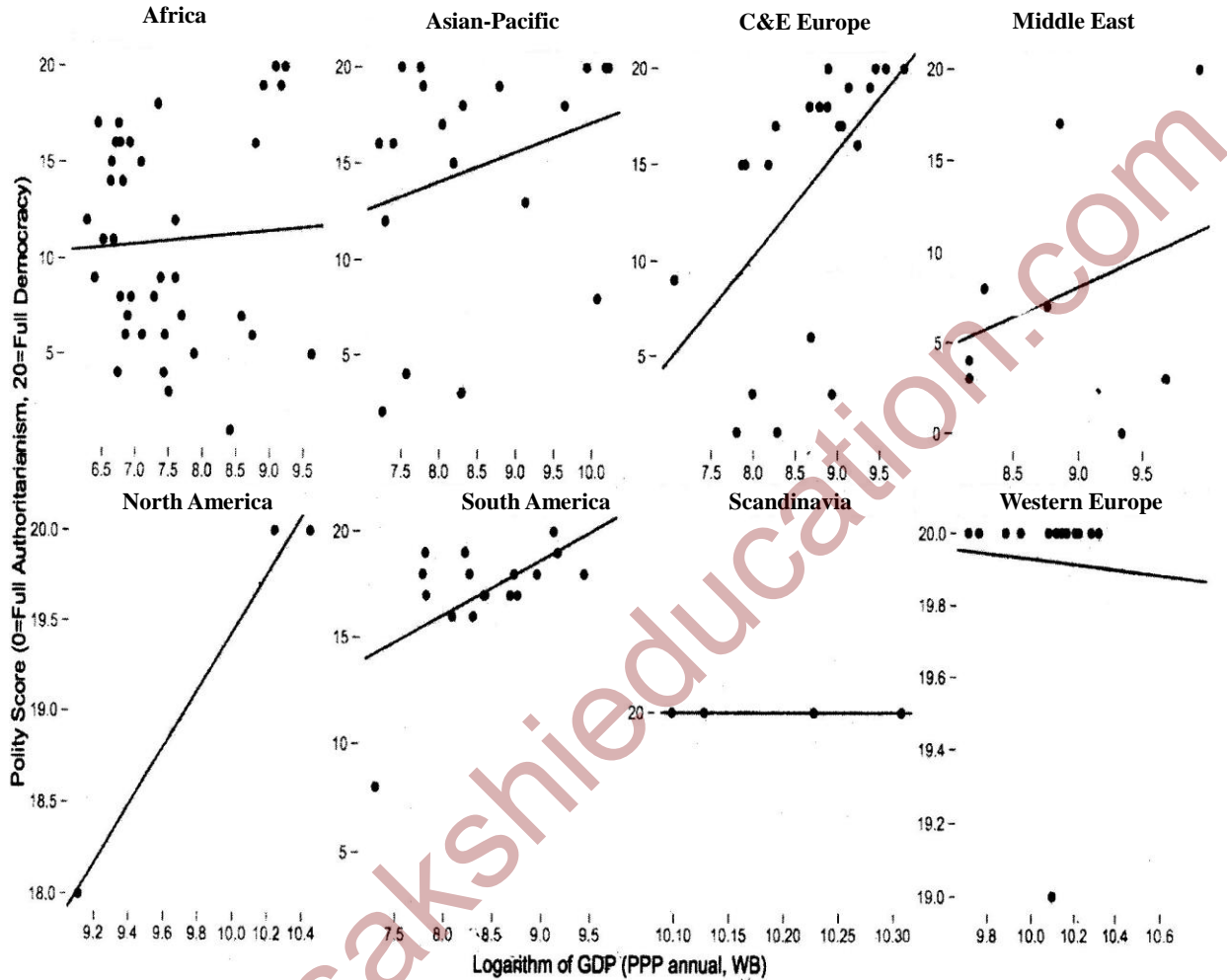
$$\sum_{i=2}^{100} \frac{1}{log_i 100!} \text{ is:}$$

(1) 0.01   (2) 0.1   (3) 1
(4) 10   (5) 100

Directions for questions 75 to 77: Answer the questions based on the *trends lines* from the following graphs.

Note: Left side of *X* axis represents countries that are "poor" and right side of *X* axis represents countries that are "rich", for each region. GDP is based on purchasing power parity (*PPP*).
These are World Bank (*WB*) estimates.

75. Which of the following could be the correct ascending order of democratic regions for poor?

   (1) North America, C and E Europe, South America, Middle East, Asia Pacific
   (2) Scandinavia, Western Europe, Africa, Asia Pacific, Middle East
   (3) Scandinavia, Western Europe, North America, C and E Europe, Middle East
   (4) C and E Europe, Africa, South America, Western Europe, Scandinavia
   (5) Africa, South America, Western Europe, North America, Scandinavia

76. Which region has the highest disparity, of democratic participation, between rich and poor?

   (1) North America   (2) C and E Europe   (3) Africa
   (4) South America   (5) Western Europe

77. The maximum GDP of African region is higher than the maximum GDP of South American region by factor of:

   (1) 10   (2) 100   (3) 2
   (4) 4   (5) None of these

Directions for questions 78 to 80: Answer the questions based on the given data on the tourism sector in India.

Years	Foreign Tourist Arrivals in India (in million)	Foreign Exchange Earnings from Tourism in India (in US $ million)	Foreign Exchange Earnings from Tourism in India (in Rs. Crore)	Number of Indian Nationals Departures from India (in million)	Number of Domestic Tourist Visits to all States/ Uts (in millions)
1997	2.37	2889	10511	3.73	159.88
1998	2.36	2948	12150	3.81	168.2
1999	2.48	3009	12951	4.11	190.67
2000	2.65	3460	15626	4.42	220.11
2001	2.54	3198	15083	4.56	236.47
2002	2.38	3103	15064	4.94	269.6
2003	2.73	4463	20729	5.35	309.04
2004	3.46	6170	27944	6.21	366.27
2005	3.92	7493	33123	7.18	392.01
2006	4.45	8634	39025	8.34	462.32
2007	5.08	10729	44360	9.78	526.56
2008	5.28	11832	51294	10.87	563.03
2009	5.17	11136	53700	11.07	668.8
2010	5.78	14193	64889	12.99	747.7
2011	6.29	16564	77591	14.21	850.86

78. In which of the following years the percentage increase in the number of *Indians going abroad* was greater than the percentage increase in the number of *domestic tourists*?

(1) 2004 and 2005   (2) 2005 and 2006
(3) 2005 and 2007   (4) 2006 and 2008
(5) 2004, 2005 and 2006

79. In which of the following years was the rupee cheapest with respect to the dollar?

(1) 2001   (2) 2002   (3) 2007   (4) 2010   (5) 2011

80. Let 'R' be the ratio of *Foreign Exchange Earnings from Tourism in India* (in US $ million) to *Foreign Tourist Arrivals in India* (in million). Assume that R increases linearly over the years. If we draw a pie chart of R for all the years, the angle subtended by the biggest sector in the pie chart would be approximately:

(1) 24   (2) 30   (3) 36   (4) 42   (5) 48

Directions for questions 81 to 83: Answer the questions based on the following information given below.

The exhibit given below compares the countries (first column) on different economic indicators (first row), from 2000-2010. A bar represents data for one year and a missing bar indicates missing data. Within an indicator, all countries have same scale.
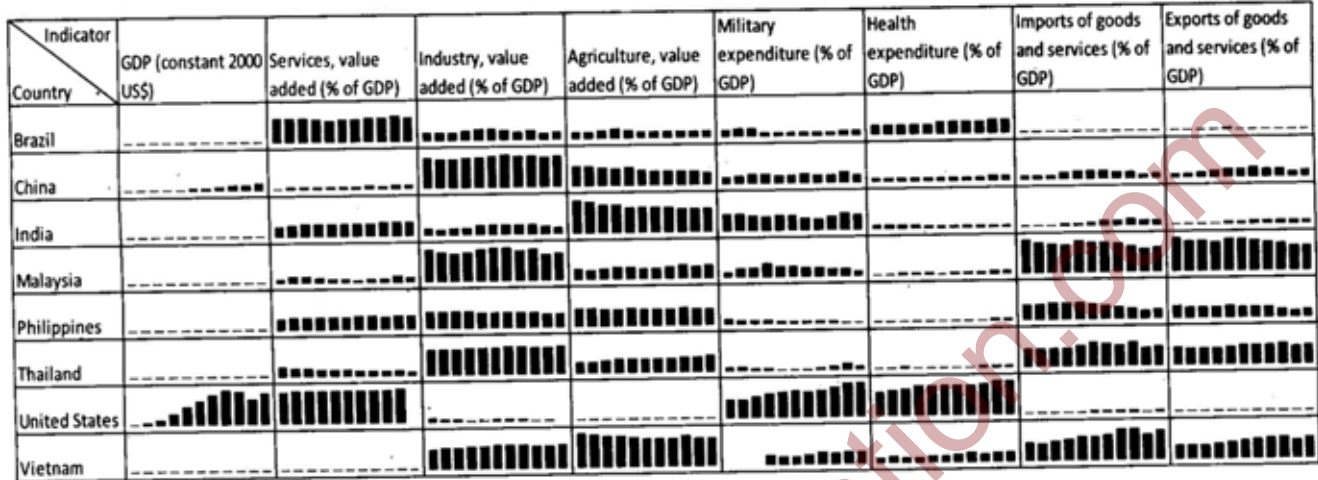

Table given below contains data of GDP in constant 2000 US Dollar (in billions).

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Brazil	645	653	671	678	717	740	769	816	858	855	919
China	1,198	1,298	1,416	1,558	1,715	1,909	2,151	2,457	2,693	2,940	3,246
India	475	498	518	559	603	659	720	790	821	888	973
Malaysia	94	94	99	105	112	118	125	133	140	137	147
Philippines	81	83	86	91	97	101	107	114	119	120	129
Thailand	123	125	132	141	150	157	165	174	178	174	187
United States	9,899	10,007	10,190	10,450	10,814	11,146	11,443	11,661	11,619	11,209	11,548
Vietnam	31	33	36	38	41	45	48	53	56	59	63

81. Which of the following countries, after United States, has the highest spending on military as % of GDP, in the period 2000-2010?

(1) Vietnam   (2) China   (3) India   (4) Brazil   (5) Thailand

82. Which country (and which year) has witnessed maximum year-to-year decline in "industry as percentage of GDP"? Given that the maximum value of industry as percentage of GDP is 49.7% and the minimum value of industry as percentage of GDP is 20.02%, in the chart above.

(1) United States in 2002-3   (2) Brazil in 2006-7
(3) India in 2009-10   (4) Malaysia in 2008-9
(5) China in 2008-9

83. Which of the following countries has shown maximum increase in the "services, value added as % of GDP" from year 2000 to year 2010?

(1) Brazil   (2) India
(3) United States   (4) Philippines
(5) None of the above

PART II

General Knowledge

84. The factor that least influences exchange rate fluctuations:

(1) Industrial Production
(2) Investor sentiments
(3) Interest Rates
(4) Consumer Price Index
(5) Goods and Service Tax

85. The sequence that contains a *wrong* match between car manufacturers and their country of origin

(1) Bugatti - France, Opel- Germany, Ferrari - Italy, Jaguar - England
(2) Cherry Automoblie - U.K, Rolls-Royce - U.K, Austin - U.K, Kia - Korea
(3) First Automobile Works – China, The First Cars – Japan, Lancia – Italy, Saab - Sweden
(4) Volvo – Sweden, Audi – Germany, Skoda – Czech Republic, Tatra - Australia
(5) Volkswagen – Germany, Audi-Germany, Opel – Germany, Mercedes Benz - Germany

86. As per the Constitution, which among the following is not a fundamental right granted to the citizens of India ?

(1) Right to Equality
(2) Right to Freedom
(3) Right Against Exploitation
(4) Right to Property
(5) Right to Freedom of Religion

87. Jawaharlal Nehru declared 'Poorna Swaraj' at:

(1) Surat (1907)   (2) Belgaum (1924)
(3) Lahore (1929)   (4) Tripuri (1939)
(5) Calcutta (1938)

88. Who among the following was known as the 'Saint of the Gutters'

(1) Baba Amte   (2) Mother Teresa
(3) C.F. Andrews   (4) Jyotirao Phule
(5) Dr. Bindeshwar Pathak

89. 'Long Walk To Freedom' is the autobiography of the following Bharat Ratna recipient

(1) Jawaharlal Nehru
(2) S. Radhakrishnan
(3) Khan Abdul Ghaffar Khan
(4) Nelson Mandela
(5) C. Rajgopalachari

90. Which seventh century Indian mathematician was the first in the world to treat 'zero' as a number and show its mathematical operations ?

(1) Aryabhatta
(2) Medhatithi
(3) Brahmagupta
(4) Bhaskaracharya
(5) Panini

91. Which city houses the headquarters of International Atomic Energy Agency (IAEA)

(1) Tokyo (Japan)
(2) Vienna (Austria)
(3) Geneva (Switzerland)
(4) New York (U.S.A)
(5) Brussels (Belgium)

92. Which Indian region is the only place in the world where the Asiatic Wild Ass is Found ?

(1) Sunderban
(2) Leh and Ladakh
(3) Coromandel
(4) Rann of Kutch
(4) Andaman and Nicobar Islands

93. The number of officially recognized lnguges according to the Eight Schedule of the Indian Constitution is

(1) 22   (2) 15   (3) 19
(4) 25   (5) 12

94. The ancient civilization of Sumer flourished in a region, which is a part of the following country in the modern world

(1) Iraq   (2) Syria

(3) Sumeria   (4) Egypt

(5) None of the above

95. The following women have been honoured with The Nobel Peace Prize, *except:*

(1) Mother Teresa

(2) Wangari Mutta Maathai

(3) Aung San Suu Kyi

(4) Doris Lessing

(5) Shirin Ebadi

96. The correct ascending prder of the countries based on the latest Gross Domestic Product data (Purchasing Power Parity) from IMF is:

(1) Brazil, Japan, India, China, USA

(2) Germany, Japan, India, China, USA

(3) Brazil, India, Japan, China, USA

(4) Germany, Russia, Japan, China, USA

(5) Russia, India, Japan, China, USA

97. The distance covered in half marathon is approximately:

(1) 21 km   (2) 42 km   (3) 11 km

(4) 7.5 km   (5) 5 km

98. The newest country in the world is:

(1) Palau   (2) Kosovo

(3) Eritrea   (4) East Timor

(5) South Sudan

99. The G-7 is a group consisting of:

(1) the heads of the states of US, UK, France, Germany, Italy, Canada, and Japan

(2) the finance ministers of US, UK, France, Germany, Italy, Canada, and Japan

(3) the heads of the states of US, UK, France, Germany, Russia, Canada, and Japan

(4) the finance ministers of US, UK, France, Germany, Russia, Canada, and Japan

(5) the heads of the states of US, UK, France, Germany, Russia, Italy, and Japan

100. The correct match between countries and their official languages is:

(1) Brazil - Spanish, Barbados – English, Haiti – Portuguese, Chile - French

(2) Brazil - Spanish, Barbados – Portuguese, Haiti – French, Chile - Spanish

(3) Brazil - Portuguese, Barbados – English, Haiti – French, Chile - Spanish

(4) Brazil - Portuguese, Barbados – French, Haiti – Spanish, Chile - French

(5) Brazil - Portuguese, Barbados – French, Haiti – Portuguese, Chile - Spanish

101. The correct match between the following mountain ranges and their highest peaks is:

(1) Alps : Mont Blanc, Rockies – Mount Albert, Andes – Mount Aconcagua, Karakoram – K2

(2) Alps : Mount Albert, Rockies – Aconcagua, Andes – Mont Blanc, Karakoram – K2

(3) Alps : Mount Albert, Rockies – Aconcagua, Andes – K2, Karakoram – Mont Blanc

(4) Alps : Mont Blanc, Rockies – Aconcagua, Andes – Mount Albert, Karakoram – K2

(5) Alps : Aconcagua, Rockies – Mount Albert, Andes – Mont Blanc, Karakoram – K2

102. The acronym "YAHOO" stands for:

(1) A song sung by Shammi Kapoor

(2) Yet Another Hierarchical Object Orientation

(3) Yet Another Hierarchical Officious Oracle

(4) Young American Hi-tech Organization in Ohio

(5) None of these

103. The list of persons not containing an RBI governor is:

(1) Raghuram Rajan, D. Subbarao, I.G Patel, R.N Malhotra

(2) Y.V Reddy, Bimal Jalan, C. Rangarjari, S. Venkitaraman

(3) Manamohan Singh, A. Ghosh, D. Subbarao, K.R Puri

(4) Raghuram Rajan, D. Subbarao, Y.V Reddy, James Taylor

(5) None of the above

XAT 2014 - Answer Key

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