

## PART 1

## Section A – Verbal Ability

Directions for questions nos. 1-2. Read the following sentences and choose the option that best arranges them in a logical order.

Q1. 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 standard electroweak model the Higgs sector consists of two chiral superfields of Higgs doublets ( $H_1$  and  $H_2$  with opposite hypercharges).

- A. 1, 3, 4, 5, 2
- ☒ B. 1, 4, 3, 5, 2
- C. 3, 4, 2, 5, 1
- D. 1, 5, 2, 3, 4
- E. 5, 4, 2, 3, 1

Q2. 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 the 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.

- A. 1, 2, 3, 5, 4
- B. 1, 2, 4, 5, 3
- C. 3, 1, 4, 5, 2
- D. 3, 5, 1, 2, 4
- ☒ E. 1, 4, 5, 3, 2



**Directions for question nos. 3-8:** Fill in the blanks with the most appropriate option that follows:

3. The defense proposes to show that the incident that the prosecution so \_\_\_\_\_ rejects as \_\_\_\_\_ did indeed take place.

- ☒ A. blithely, undesirable
- ☐ B. cavalierly, apocryphal
- ☐ C. vehemently, factual
- ☐ D. persuasively, pointless
- ☐ E. convincingly, inevitable

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

- ☒ A. retribution, camaraderie
- ☐ B. guilt, religion
- ☐ C. crime, religion
- ☐ D. love, austerity
- ☐ E. recrimination, insight

5. 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?

- ☐ A. in this book, we discuss application of bosonic particles and their consequences on physics.
- ☒ B. in this book, we discuss applications of a general algebraic theory of mixed Bose- Fermi systems to atomic nuclei.
- ☐ C. in this book, we discuss excitations of collective and single particles separately.
- ☐ D. in this book, we prove how collective excitations are bosonic and singular excitation are fermionic.
- ☐ E. in this book, we prove that collective and singular excitation cannot exist together.

6. 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.

- ☐ A. progressive development, exact, decline, decrease, tiny
- ☐ B. progress deterioration, exact, increase, decrease, tiny
- ☒ C. progressive development, precise, improvement, reduction, large
- ☐ D. progressive development, precise, increase, decrease, large
- ☐ E. gradual growth, exact, increase, decline, large

7. Clinical practitioners \_\_\_\_\_ integrated mindfulness \_\_\_\_\_ treatment of \_\_\_\_\_ host of emotional and behavioral disorders, \_\_\_\_\_ borderline personality disorder, major depression, chronic pain, or eating disorders. Number of such practitioners \_\_\_\_\_ increased substantially.

- ☒ A. have, in the, a, such as, has  
B. have, in the, the, like, have  
C. were, for, a, like, has  
D. have, for, a, like, has  
E. could, in the, the, such as, have

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

- ☒ A. often, a, but, such  
B. often, the, yet, such  
C. frequently, a, yet, such  
D. often, a, yet, these  
E. often, the, but, these

9. 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:

- A. 1-Noun, 2-Pronoun, 3-Adverb, 4-Adjective, 5-Adjective, 8-Conjunction  
B. 1-Noun, 3-Adjective, 4-Adjective, 6-Adverb, 7-Adverb, 8-Article  
C. 1-Noun, 2-Pronoun, 4-Adjective, 7-Adverb, 8-Conjunction  
D. 2-Pronoun, 3-Verb, 4-Adverb, 6-Adverb, 8-Article  
☒ E. 2-Pronoun, 3-Verb, 4-Adjective, 7-Verb, 8-Conjunction

10. 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, agricultural 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 tourists visiting the shrines in the uppermost reaches of Uttarakhand's sacred rivers. But the deluge spread far beyond the 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.

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

- A. Char Dhams were most affected by Uttarakhand disaster.
- B. Entire catchment of rivers flowing in Uttarakhand was affected.
- ☒ C. Media attention was on Char Dhams but the entire catchment area of rivers flowing in Uttarakhand was affected.
- D. Media cannot be trusted as it focuses only on important places and events.
- E. Voluntary organizations are better than media in reaching out to the affected people.

11. 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.

- ☒ A. capital of Bihar, but it is also one of the oldest
- B. capital of Bihar, nevertheless also one of the oldest
- C. Bihar's capital city, and it is also one of the older
- D. Bihar's capital, but it is also one of the older
- E. capital of Bihar, but it is also one of the older

**Directions for question nos. 12 – 13:** 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.

**Fact:** 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.

12. When you look at the people who make fundamental, revolutionary breakthroughs in any field, you keep noticing 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

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they over-compensate their disability through nonverbal communication, initiative and grit (6). And this overcompensation leads to greatness (7).

The best match would be:

- A. 1-Assumption, 2-Question, 3-Reason, 4-Fact
- B. 1-Assumption, 2-Question, 4-Reason, 7-Conclusion
- C. 1-Fact, 2-Question, 4-Reason, 6-Reason
- ☒ D. 1-Fact, 3-Question, 4-Reason, 7-Inductive Inference
- E. 3-Question, 4-Reason, 5-Fact, 6-Proposition

13. 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). That 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:

- A. 1-Fact, 2-Reason, 3-Deductive Inference
- B. 1-Reason, 2-Reason, 3-Inductive Inference
- C. 1-Inductive Inference, 2-Fact, 3-Inductive Inference
- ☒ D. 1-Inductive Inference, 2- Inductive Inference, 3-Inductive Inference
- E. 1-Reason, 2-Reason, 3-Reason

Analyze the following passage and provide appropriate answers for the questions 14 through 16 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 government which they will have. Government is at best but an expedient; but most governments are usually, and all governments are sometimes, inexpedient. The objections 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 the 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.

14. According to the author of the paragraph, army is \_\_\_\_\_?

- A. required
- B. fallible
- C. must
- D. necessary evil
- ☒ E. not required

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

- A. when it is fair.
- B. when it is right.
- C. when it abides by the law.
- D. when it is conscientious.
- ☒ E. such a government cannot exist.

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

- ☒ A. Men are bigger than the governments.
- B. Business houses are best for the growth of a society.
- ☒ C. Governments and armies are not required.
- D. Concept of nations is redundant.
- E. Democracy is best for citizens.

**Analyze the following passage and provide appropriate answers for the questions 17 through 19 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 a 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 contentless 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 the 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 are apparently psychophysically identical selling for prices that depend on their advertising budgets, we have a dull alternative hypothesis and an interesting one. The dull one is 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 the 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.

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

- A. Individuals are more rational than firms.
- B. Firms are rational.
- C. Firms are more rational than individuals.
- ☒ D. Firms are, most of the times, more rational than individuals.
- E. Market behavior of psychophysical goods would be the same as that of physical goods.

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

- A. To prove that molecules are elastic.
- ☒ B. To highlight that we should not compare apples and oranges.
- C. To hint that only very good students understood Physics taught by Rutherford.
- D. To equate beer with little hard elastic balls.
- E. To state that Mechanics is more amenable to application of Statistics than gasses.

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

- 1. Concrete
- 2. Car
- 3. Mobile Phone

- A. 1 and 2
- ☒ B. 2 and 3
- C. 1 and 3
- D. 1, 2 and 3
- E. None of these



Analyze the following passage and provide appropriate answers for the questions 20 through 22 that follow.

Ideas involving the theory of probability play a decisive part in modern physics. Yet we still lack a satisfactory, consistent 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 of probability statements*. My hope is that these 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'.

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

- A. probability of an event can always be checked with experience.
- B. probability of an event can only be gauged historically.
- ☒ C. probability is mathematical while experience is real.
- D. probability statements can become difficult to disprove without experience.
- E. probability is futuristic.

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

- A. The first task is sufficient to become the touchstone for the author to test his theory.
- B. The second task is sufficient to become the touchstone for the author to test his theory.
- C. Either of the tasks is sufficient for the author to test his theory.
- D. None of the tasks is sufficient for the author to test his theory.
- ☒ E. Both the tasks would be important for the author to test his theory.

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

- A. Physics is the only subject that borrows from the theory of probability.
- B. Physics is the only subject where the theory of probability is inaccurately applied.
- C. The theory of probability may be inaccurately applied in other subjects.
- ☒ D. Physics is highly mathematical.
- E. Experience relates to physical objects only.



Analyze the following passage and provide appropriate answers for the questions 23 through 25 that follow.

The ways by which you may get money almost without exception lead downward. 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, as 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.

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

- A. Setting up a factory in a rural area
- ☒ B. Advertising for tooth paste
- C. Studying in a business school
- ☒ D. Betting in a casino
- E. Working for an investment bank

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

- ☒ A. Money and Work
- B. God Rush
- C. Work is Worship
- D. In Search for God
- E. God is Gold

25. 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)?

- A. Economic growth of society
- ☒ B. Realization of self
- C. Happy family life
- D. Strong and powerful nation
- E. Distribution of wealth

Analyze the following passage and provide appropriate answers for the questions 26 through 28 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 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.

26. 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."*

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

- ☒ A. Manliness is no longer socially desirable.
- B. Boys will be boys and will always consume more.
- C. Men will be men and will always create and produce.
- D. Products that fulfill the desire will sell more.
- E. Consumers would like to buy more do-it-yourself kits.

27. 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?

- A. Pre-modern man was anti-social.
- B. Products that fulfill the desire of anti-social behavior will sell more.
- C. Modern men are always anti-social.
- ☒ D. Consumer will satisfy their desire of masculine identity through socially visible consumption.
- E. Men will fulfill their desires for maintaining their identity.

28. 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?

- A. Females in human society are creating personalized fashion narratives.
- ☒ B. It is socially desirable to resist all dominant norms.
- C. Feminists consider it socially desirable to resist dominant fashion norms that typify females in human society.
- ☒ D. Consumers often resist dominant fashion norms.
- E. Attractiveness increases if one is unique.

Y