

## VARC

**Q1. DIRECTIONS** *for question 1:* The sentences given below, when properly sequenced, form a coherent paragraph. Each sentence is labeled with a number (1, 2, 3, 4 or 5). Decide on the proper order for the sentences and key in the correct sequence of five numbers as your answer in the input box given below the question.

1. Netflix might be one such offering; Amazon another.
2. In a decade or so, TVs will once again have only a few channels, but each will run miles deep, with content that can be viewed on demand.
3. And other rich tech firms may join them.
4. Imagine a television which, as in the old days, has only a handful of channels to choose from instead of hundreds, as a typical cable set-up might offer today.
5. Both firms are spending billions making and buying TV shows to sell directly to viewers to watch when they like, and on devices other than the box in the corner of the room.

**Q2. DIRECTIONS** *for question 2:* In the following question, there are sentences or fragments of sentences that form a paragraph. Identify the sentence(s) or fragments of sentence(s) that is /are correct in terms of grammar and usage, including spelling, punctuation and logical consistency. Enter the number corresponding to the sentence(s) or fragments of sentence(s) in the input box provided below the question. [Note: Enter your answer in increasing order only. For example, if you think that the fragments (2) and (4) are correct, then enter 24 (but not 42) in the input box.]

1. Ravensbruck was a concentration camp 50 miles north of Berlin. It has received far little an attention than Auschwitz
2. and other Nazi death camps. What happened there was covered.
3. The buildings (and files) were burned as Allies drew near in 1945. In the late 1960s, some historians even started to question the existence of the gas chambers there.
4. Yet Ravensbruck deserves to be remembered. It was Hitler's only concentration camp specifically for women.
5. Towards the end of the war as other camps emptied it became the engine of the Nazi killing machine on the orders of Heinrich Himmler.

**DIRECTIONS** *for questions 3 to 8:* The long passage given below is followed by a set of six questions. Choose the best answer to each question.

The United States has a long history of critical intellectuals, but Chomsky does not quite fit into any American tradition of protest. He is not part of that long line of critics who bemoaned America's betrayal of its promise. He does not accept a vision of America as a well-intentioned, morally inclined power whose ideals embody the best aspirations of mankind. No American dream is part of his beliefs. Chomsky's analysis of America's most popular and

omnipresent self-images is thorough and devastating. His careful scrutiny reveals them to be neither accurate nor rational. Rather, they are part of an ideological ethos whose function is comparable with what all great powers require: an ideological rationale for their wealth and power. They manifest an adamant refusal to see that the United States secretes its own way of seeing the world, shaped to the needs of quite specific, powerful interests. ...

Lamentations about “American innocence” fit snugly with ruthless pursuit of self-interest by powerful institutions and individuals throughout US history. What is particular about Chomsky's perspective is that he does not merely ask why this is so, but why we should ever have expected otherwise given the world we live in. Why expect societies to expose their actual inner workings when suitable rationalizations serve powerful interests far more effectively? Why are we shocked that that great powers manufacture the rationales for their self-interested pursuits using the most noble-sounding rhetoric? Why are we surprised that nations themselves, rather than powerful, specific interests within them, are depicted as acting for the well-being of society in foreign affairs?

Chomsky's view is that the United States is not exempt from what is so reasonably expected from others. A rational approach will begin by looking for what is reasonable to expect of all nations. Chomsky expects to find great powers cloaking their aggressive self-interested quests in clouds of inspiring rhetoric, while all along a chorus of its supporters insist that it is uniquely exempt from the aggressive pursuits so easily depicted in its enemies. He suggests that a reasonable way to understand the foreign policy of any state begins by studying the domestic social structure. Who sets foreign policy? What interests do they represent? On what is their domestic power based? The policy that evolves can reasonably be expected to reflect the specific interests of those who shape it.

Further it is only reasonable to expect that the harsh facts of political life will be mystified if they threaten the faith; groups will emerge to disguise the obvious, to obfuscate the workings of power, to spin a web of mystification through transcendent, benign goals that allegedly guide national policy.

Quite understandably, such people will not see themselves as a caste of propagandists or as indoctrinators. They prefer to think of themselves as educators, religious leaders, often as fervent apostles of truth which place them in conflict with the state.

Yet to see just what the shared consensus is in a society, Chomsky suggests, look at what the “influential critics” do not challenge. There the extent to which they are submissive and obedient to the state can be expected to reveal itself.

Ferocious debates are not indications that consensus values are questioned. Doves and hawks can reasonably be expected to differ on the exact nature of the evil practices, real or imagined, of current enemies of the state, but the debates will go on within a quite expectable narrow set of patriotic premises. Both speak of the nation as the active agent in international affairs, not

specific groups within it. Both tend to argue that the “national interests” as articulated reflect such common interests as might be generally shared within society.

Chomsky skillfully demonstrates how this process works. Debates about Vietnam between hawks and doves might heatedly dispute whether the war was a costly mistake, an error or even a great tragedy. But responsible debate simply excludes from serious consideration that the war was wrong in principle or an act of aggression. Like George Orwell, Chomsky has an uncanny ability to suggest the ideological message in all its blatancy just beneath the apparently objective facade of argument. His statements startle – such as when he calls America's presence in South Vietnam an invasion. But his masterful use of comparisons exposes the ideological character underlying our political debate. Thus Chomsky compares South Vietnam and Afghanistan to show how little difficulty US observers have in spotting a Russian invasion of a country. If a puppet regime in Kabul requests Soviet military aid, there is no question that aggression is taking place. But when a puppet regime in South Vietnam requests US military aid, no aggression or invasion is even at issue.

**Q3.** Doves and hawks are terms applied to people based upon their views about a military conflict and the differences in their views play out ....

- a) within a broad set of patriotic premises, speaking of the nation as the active agent in international affairs.
- b) within a broad set of patriotic premises, speaking of the nation being the inactive agent in international affairs.
- c) within a narrow set of patriotic premises, both speaking of the special groups in the nation as the active agent.
- d) within a narrow set of patriotic premises, both speaking of the nation as a whole as an active agent in international affairs.

**Q4.** Which of the following can be understood from the passage?

- a) Because Chomsky does not belong to any intellectual school he is free to analyze as he thinks right.
- b) Being well-versed with the domestic social structure of a country is a justifiable way to comprehend foreign policy of any state.
- c) Chomsky's radical analysis of his country is tinged by remorse as he somehow identifies with the popular image portrayed by America.

d) Chomsky is happy with the fact that debates on the Vietnam war took into consideration not only the cost and economic losses that occurred but also acknowledged the fact that the act of war was wrong in principle or an act of aggression.

**Q5.** Where can the sentence given below be inserted in the passage?  
“Quite the contrary.”

- a) Between sentences 1 and 2 of para 1.
- b) At the end of para 7.
- c) At the end of para 4.
- d) At the end of para 3.

**Q6.** With which of the following would Chomsky not agree?

- 1. The foreign policy of the US is determined by the self-interests of those who shape it.
- 2. Often the US is guilty of the same offence that it accuses its enemies of.
- 3. The US stance on an issue is determined by powerful forces working within the US.
- 4. Their actions in pursuance of foreign policy point to the differences in intent between the US and the Soviet.
- 5. Ferocious debates on a subject are a means to divert attention from the main issue.

- a) a and e
- b) b and c
- c) c and d
- d) Only d

**Q7.** Why does the author regard Chomsky's approach to be 'rational'?

- a) Because he has no dreams for America and does not decry America's betrayal of its promise.
- b) Because Chomsky reveals that all great nations including his, work in the same manner.
- c) Because Chomsky is of the view that all nations, including his, should be judged by the same yardstick.

d) Because he does not think that America is a moral power having good intentions towards others.

**Q8.** The only “shared consensus” in a society according to Chomsky is Identify all that apply and enter the corresponding number in the input box given below. You must enter your answer in increasing order only. For example, if you think (2) and (4) apply, then enter 24 (but not 42) in the input box.

1. The so called ideological values of the state which are not questioned by the critic.
2. The values held dear which trigger controversies among members of a society.
3. The idiosyncratic factors that lie just below the surface in any argument.
4. The controversial aspects regarding which ferocious debates are voiced.
5. The implied agreement to protect national interest at the cost of other nations.

**Q9. DIRECTIONS** *for question 9:* Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

1. But its creators, a bunch of cryptography researchers, have tweaked it.
2. Competition between currencies is the stuff libertarian dreams are made on – and central bankers’ nightmares too.
3. Zcash is the newest crypto-currency and it is based on Bitcoin’s code.
4. The new digital cash is minted more quickly and the system can handle more transactions.
5. This makes for more liquidity and shorter transaction times.

**Q10. DIRECTIONS** *for question 10:* The sentences given below, when properly sequenced, form a coherent paragraph. Each sentence is labeled

with a number (1, 2, 3, 4 or 5). Decide on the proper order for the sentences and key in the correct sequence of five numbers as your answer in the input box given below the question.

1. They are packed with sensors, particularly accelerometers and GPS tracking devices, which can record movement, exercise, heart rate, pulse rate, weight etc.

2. Nor do they understand the strengths and weaknesses of existing treatments for Parkinson's – nor even the unmet needs of people who have the disease.

3. Smartphones, and other mobile devices worn or carried almost continuously by many, offer a way to do so.

4. Those researchers might understand better, though, if they were able to track the day to day symptoms of large numbers of people who suffer from Parkinson's.

5. Researchers do not really understand why people living with Parkinson's disease have good days and bad ones.

**DIRECTIONS** for questions 11 to 16: The long passage given below is followed by a set of six questions. Choose the best answer to each question. Timothy Fridtjof "Tim" Flannery (born 28 January 1956) is an Australian mammalogist, palaeontologist, environmentalist and global warming activist. He was the Chief Commissioner of the Climate Commission, a Federal Government body providing information on climate change to the Australian public. His sometimes controversial views on shutting down conventional coal-fired power stations for electricity generation in the medium term are frequently cited in the media. He is an environmental celebrity. His 2005 book, "The Weather Makers", about climate science and global warming, was a bestseller. His latest is his most ambitious book so far. The publisher calls "Here on Earth" a twin biography, of humanity and the planet it inhabits, but that description is inadequate. Mr Flannery's subject is the likely fate of humankind, and whether the powers granted to modern civilisation by science and technology will prove to be its downfall or its salvation. He muses on whether humanity counts as a superorganism (a classification usually reserved for bees and ants), why we have yet to discover intelligent aliens, the poorly understood effects of dumping industrial chemicals into the environment, the power of planet-watching networks of satellites and the benefits of aboriginal scrub-burning. There is an effort to organise the chapters around two competing models of human behaviour, a co-operative, far-sighted wisdom that Mr Flannery dubs the "Gaian" approach and a reckless, ultimately destructive short-termism that he calls "Medean", after the bloodthirsty enchantress of Greek myth.



The trouble is that the subject is far too big to fit comfortably into a book a little more than 300 pages long. Mr Flannery is a respected biologist with plenty of published papers to his name, but the book feels dilettantish, with a dizzying array of concepts introduced, briefly discussed, then dispensed with before the reader has had time to digest them. The question of whether modern democracies can successfully resist populist tyranny is raised and then abandoned within two paragraphs. A discussion of decarbonising the world's transport networks flashes by in a handful of pages. Fewer examples more deeply explored might have added up to a more convincing case, and an easier read.

That is a shame, because much of the material would repay a deeper look. The “Gaia” theory, which is the subject of the opening chapters, starts with the surprising observation that such things as the Earth's surface temperature and the salinity of its oceans have fluctuated remarkably little over billions of years despite, for instance, a significant increase in the power of the sun. James Lovelock, who first proposed the Gaia theory, used an analogy with living organisms, all of which can, to some degree, regulate conditions within their own bodies. The theory brings to mind New Age crankery, and some of the research Mr Flannery cites to underpin it is speculative at best. For example, he mentions a scientific paper that suggests that lichens, bacteria and the like may have been a driving force behind prehistoric geology and the formation of continents. Mr Flannery admits that the idea is “controversial”. But having shown the reader a glimpse of this fascinating byway, he speeds straight past, impatient to reach the next intellectual stop, while the tentative theory is simply accepted. If the book is not all it could be, it is still worth reading, though less for answers than for its interesting hypotheses. It is healthy to be reminded of the various ways in which humans are influencing their environment – most of them malign – and to recognise that even in an age of high technology, our prosperity and well-being depend on our natural environment, which furnishes us with air, water, food and the natural resources on which industrial civilisation relies.

**Q11.** Which of the following is inconsistent with the information presented in the passage?

- a) The Gaia Theory essentially deals with whether the biosphere can regulate the environment to suit itself, preventing the planet from freezing or boiling.
- b) Mr. Flannery succeeds in thumbing down the fundamentals of the “Gaia theory” in his book.

c) The “Gaia Theory” forms an introductory part of the book “Here on Earth”.

d) The Gaian approach adopted by Flannery helps draw attention to positive, cooperative possibilities in human behaviour.

**Q12.** What does 'that' stand for in “That is a shame... ?” (para 4)

a) The author's reluctance to discuss matters more deeply.

b) The author presenting two contrasting views without taking a stand.

c) The author's failure to delve deep into the subject he has just touched upon.

d) The author's selection of a subject that is not amenable to be covered in a 300 page book.

**Q13.** Which of the following about the book “Here an Earth” is not true?

1. The book focuses on what man might do to himself and his environment through the power he has acquired.

2. This is the first book of the author to become popular and make him well known.

3. The book ponders on some of men's actions without explaining them in totality.

4. The book looks at man in two contradictory roles.

5. It portrays the author as being a little wary because of the confusion and contradictions in the topic of discussion and unwilling to take sides in a debatable issue.

a) b and e

b) c, d and e

c) a and e

d) b and d

**Q14.** Tim Flannery, as per the passage, is all of the following EXCEPT?

1. A person who studies living beings, life processes, mammals and past geological periods as revealed by fossil remains.

2. An author who comes across as 'rambling' to a reader perusing his book “Here on Earth”.

3. A person who wonders whether the planet can be saved through science and technology.

4. A person who, though unsure about the validity of the Gaian and Medean approaches, uses them anyway, to explain the larger picture on Earth.

a) Only d

b) a and b

c) c and d



d) b and d

**Q15.** What, according to the reviewer, are the shortcomings of the book “Here on Earth”?

- a) The book deals perfunctorily with a wide range of topics.
- b) The book presents two models of humans that are at odds with each other.
- c) The book fails to account for man's inability to discover aliens.
- d) The book is difficult to read as it has only a few examples to illustrate difficult concepts.

**Q16.** In the final analysis, the reviewer's take on the book under review is that

- a) it falls short of expectations, not answering any of the questions raised.
- b) though cursory, it makes for an interesting read.
- c) it should be read as the book is a fitting reminder of our dependence on the environment.
- d) it should be avoided as the book cannot cover all the nuts and bolts of a broad scientific discipline.

**Q17. DIRECTIONS** *for question 17:* The following question has a paragraph from which a sentence has been omitted, leaving the paragraph incomplete. From the given options, choose the one that completes the blank in the paragraph in the most appropriate way. Enter the number alongside the correct answer choice in the input box given below the question.

The world of biology lies far beyond the naivety of selfish genes and their supposedly lonely pursuits of self-replication and self-immortalisation. Nature is not solely an arena for competitive and selfish replicators, even though everyone is busy looking for the next meal or the next mate. In all probability there has been, from the origin of life onwards, an intimate interaction between consenting genes and proteins as they learned the trick of producing successful, autonomously reproducing cells and organs.

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- 1. The recent discoveries in biology are challenging how we think about biological evolution.
  - 2. Evolution is the name of this game.
  - 3. Development then proceeded along predictable lines.
  - 4. Genes are born to cooperate.
  - 5. Our studies of these biological units have been facilitated by this understanding.

**Q18. DIRECTIONS** for question 18: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

1. But if governments wish to reverse the inequality big firms foment, reforms to the labour market are unlikely to do the trick.
2. Thomas Piketty's "Capital in the Twenty-First Century" has ignited a furious debate about inequality in the rich world.
3. Yet that disparity is ballooning, too: in America, for instance, the best paid 1% of workers earned 191% more in real terms in 2011 than they did in 1980, whereas the wages of the middle fifth fell by 5%.
4. He focuses on the increasingly unequal distribution of wealth, and pays less attention to the growing disparity in wages over the past three decades.
5. Similar trends can be observed all over the world, despite widely varying policies on tax, the minimum wage and corporate pay.

**DIRECTIONS** for questions 19 to 24: The long passage given below is followed by a set of six questions. Choose the best answer to each question. Indian culture has nurtured great management thinkers. Much has been written recently by both management thinkers and other observers about the uniquely Indian characteristics of successful business leaders operating in India. These characteristics include, it is claimed, a commitment to inclusive growth, a long-term perspective on business objectives, and the much vaunted proclivity for *jugaad* – the improvisational ability to find workable solutions around seemingly intractable problems in the business and academic space.

Indian thinking about management, leadership, or global strategy has been shaped by classical Indian literature such as the Bhagavad Gita. The Bhagavad Gita is a wise and wonderful poem, with much thoughtful commentary about both the conduct and the examination of life. The philosophical ideas it encapsulates have had a pervasive influence on Indian culture through the centuries and it is astonishing that a work of literature composed two and a half millennia ago should have such resonance today. While many Indians can recite a few shlokas from the Gita, and even aspire to some of its wisdom, the custom of attributing one's inspiration for ideas to the Gita seems to me to cheapen the influence, if for no other reason than the fact that most of these ideas are unlikely to match either the grandeur or the longevity of the Gita! Having said that, as far as India is concerned, if there is one source which distills the Indian ethics and values, it is the Bhagavad Gita. (Meeting the challenge of management depends on the value perceptions of the individual which in turn are in tune with societal values. Organizational culture is very much affected by values and ethos of a

given society). In fact, to understand Hindu thinking and management practices, there is no better guide than the Gita.

Every manager today has to operate in an environment of uncertainty and turbulence, the degree of which is enhanced by the fact that we have given up the permit-licence raj. In the era of licensing, competition was not so severe but in the era of economic liberalization, practically in every area there is going to be greater competition. The Indian economy is getting linked with the global economy. Competition and uncertainty are increasingly becoming a part of the management of enterprises in India.

The Bhagavad Gita becomes an excellent guide for any aspiring manager who wants to be successful. The manner in which the Bhagavad Gita was preached first is typical of the challenge faced by the manager. Arjuna was in the field facing a difficult war. There were ethical issues as well as issues of uncertainty regarding the outcome of the war. The first chapter of the Gita begins with a highly demoralized Arjuna but at the end of the 18th chapter of the Gita, Arjuna realizes the different dimensions of how he has to perform his duty and goes ahead to perform that task. So, from a purely practical point of view, the Bhagavad Gita can be studied every day by every manager who is looking for inspiration, because he will find echoes of the problems we are facing today in the verses of the Gita and find proper solutions through inspiration.

In today's uncertainty, the most important characteristic, required of any manager is the capacity for originality and creativity. One has to be a contrarian. One must be able to visualize things which others are not considering at the moment and it is by taking such a perspective that perhaps one can identify new niche markets. One must challenge the existing assumptions and conclusions so that one can arrive at new solutions. ...

Civil servants can also look upon themselves as managers in the public service and they must maintain the highest standards of excellence. The verse in the second chapter of the Gita brings out the fact that excellence in work is yoga. The concept of karma yoga is very much articulated by the Gita and shoddy work has no role to play. As the competition becomes severe, everybody is talking about the 'quality' jargon. Quality is nothing but a quest for perfection and excellence.

**Q19.** Why is the comparison of the modern day managers with Arjuna apt as can be surmised from para 4 of the passage?

- a) Today's manager is as demoralized as was Arjuna at the start of the war.
- b) Today's manager faces issues of unpredictability and of right and wrong as did Arjuna.
- c) Today's manager is in the world of cut-throat competition resembling a war.

d) Today's manager has to be on the morally correct side as Arjuna had to be.

**Q20.** Which of the following correctly represents the view of the author on 'jugaad' as expressed in the first para of the passage?

- a) It is a gnomonic term whose meaning can be interpreted as per the context and situation.
- b) It is the trait among persons of Indian origin that is most responsible for their success abroad.
- c) It is a positive aspect inherent to Indians that enables them to avoid difficult problems and find quick solutions.
- d) It is a characteristic that has set Indians apart from other nationals in their business and academic achievements.

**Q21.** What does the author mean when he says that a manager has to be a 'contrarian' (para 5)?

- a) He must always weigh the pros and cons of an action before undertaking it and should not be open to taking unnecessary risks.
- b) He must be flexible enough to accept contrary viewpoints.
- c) He must think in a way different from the common thinking.
- d) He must think neither think originally nor creatively.

**Q22.** Which of the following resonates with the point(s) of view(s) of the author in the second para of the passage?

- a) India's culture plays a role in the preponderance of influential Indian management thinkers.
- b) The Bhagavad Gita does not in any way influence the decision making process of Indian Managers.
- c) The Bhagavad Gita is primarily responsible for the ethos governing Indian managers.
- d) The Bhagavad Gita has not satisfactorily shaped the ethical foundation of Indian leaders.

**Q23.** Which of the following is true about the Bhagavad Gita as can be inferred from the passage?

1. The Bhagavad Gita helps management in achieving its goals by reflecting the values of Indian society.
2. The Bhagavad Gita enables one to develop a sense of detachment while performing his or her duty.
3. The advice contained in the Gita to a civil servant is that he must be unbiased and must do his or her duty without worrying about the results.

4. The Gita exhorts a civil servant to always strive for excellence in his or her work.

- a) a and d
- b) b and d
- c) a and c
- d) b and c

**Q24.** According to the passage, what is /are responsible for competition becoming severe now?

1. Globally, competition has become the indispensable feature of business enterprises.
2. The era of 'permit licence raj' has given place to the era of 'economic liberalization'.
3. Indian economy is fast becoming a part and parcel of global economy.
4. People's awareness enriched by the media.

- a) Only c
- b) a and b
- c) b and c
- d) b, c and d

**Q25. DIRECTIONS** for question 25: The sentences given below, when properly sequenced, form a coherent paragraph. Each sentence is labeled with a number (1, 2, 3, 4 or 5). Decide on the proper order for the sentences and key in the correct sequence of five numbers as your answer in the input box given below the question.

1. It is tempting to think that in a different era, Eleanor Roosevelt could have become president of the United States.
2. She was also fierce in support of her causes and she tirelessly lobbied her husband, Franklin Delano Roosevelt, to embrace her projects too.
3. FDR encouraged her independence and when he silenced her did so for reasons of state.
4. Widely loved, the longest-serving first lady was on the right side of history on virtually every subject, including civil rights, acceptance of European refugees and the ending of empires.
5. There was one of history's most powerful and enduring partnerships; she understood his needs and embarked on her own independent career.

**Q26. DIRECTIONS** for question 26: In the following question, there are sentences or fragments of sentences that form a paragraph. Identify the sentence(s) or fragments of sentence(s) that is /are correct in terms of grammar and usage, including spelling, punctuation and logical consistency. Enter the number corresponding to the sentence(s) or fragments of sentence(s) in the input box provided below the question. [Note: Enter your answer in increasing order only. For example, if you think that the fragments (2) and (4) are correct, then enter 24 (but not 42) in the input box.]

1. It began with a grove of sycamores. Since months environmentalists had been protesting against a government-backed plan
2. to chop the trees down to make rooms for a shopping and residential complex in Istanbul's Taksim Square.
3. They organised a peaceful sit-in with tents, singing and dancing. On May 31st, riot police staged a pre-dawn raid,
4. dousing up the protesters with jets of water and tear gas and setting fire to their encampment. Images for the brutality –
5. showing some protesters bloodied, others blinded by plastic bullets – spread as wildfire across social media.

**DIRECTIONS** for questions 27 to 29: The short passage given below is followed by a set of three questions. Choose the best answer to each question.

One of the most influential historians of the blues is Amiri Baraka who, writing as Leroi Jones in his first book *Blues People*, explores the African-American experience of the US through music. The blues, he explains, is the response of African abductees to their American enslavement, a cultural outpouring developed from work songs and spirituals which represents in microcosm the entire range and nuance of a people's adaptation to a foreign land they were given no choice but to make into a home. ...

Both Baraka and Albert Murray, another prominent African-American historian of uniquely American music, tell the story of jazz in such a way as to underscore its birth out of the blues. For Baraka, one of the more coherent ways of defining jazz is as a synthesis of European instrumentation and the African-derived polyrhythms that, fundamentally, are the blues – even as jazz developed its own trajectory. Murray's tracing of this history in *Stomping the Blues* reiterates this common heritage but concentrates so much on jazz and jazz musicians that a reader who comes to his book looking for an analysis of the blues may feel shortchanged. ...

Frank Kofsky tells the story of jazz through a narrative reminiscent of Thomas Kuhn's *Structure of Scientific Revolutions*, a story of problem-solving within



paradigms that finally break down and must be replaced. He too endorses the thesis that music and socio-political relations go hand in hand, arguing that we can see in the free jazz that emerged in the early 1960s a kind of “proto-nationalism” which presaged the black nationalist messages of Malcolm X, the Black Panthers, and other “do for self” movements in African-American communities during the 1960s. These movements stressed the need for community self-sufficiency in the face of a systemically racist white majoritarian society and although the black nationalist (black separatist) message was often simplistically opposed to the integrationism attributed to Martin Luther King and the Civil Rights Movement, their community development efforts – after-school arts programs for children, musical benefits to feed people struggling with food insecurity, “neighborhood watch” security efforts – still stand as tangible models for grassroots solidarity. The self-sufficiency message Kofsky finds in jazz proto-nationalism is a celebration of a unique African-American aesthetic, one that contested the aesthetic imperialism of the white critics who promoted the value and determined the negotiating power of the mostly black musicians within the system of white-owned recording and performance institutions. At the height of the free jazz movement, self-sufficiency imperatives were the driving force behind the independent recording facilities and cooperatively owned performance venues with which Coltrane and Coleman experimented.

**Q27.** Which of the following choices correctly captures the stance adopted by Baraka and Murray as can be inferred from the passage?

- a) Baraka focussed on jazz emphasizing its origin out of the blues while Murray concentrated on jazz without emphasizing its origin out of the blues.
- b) Murray thought of blues as an amalgamation of European instruments and African music while Baraka concentrated on jazz without analyzing the blues.
- c) While both Baraka and Murray initially focussed their attention on the birth of jazz out of the blues, they both finally embraced free jazz.
- d) Both Baraka and Murray looked at jazz as being born out of the blues which was an amalgamation of European instruments and African music but Murray later focussed all of his attention on jazz alone.

**Q28.** What is the style of the passage?

- a) Narrative.
- b) Descriptive.
- c) Analytical.
- d) Argumentative.

**Q29.** All of the following are true of the “self-sufficiency” that Frank Kofsky speaks of in jazz protonationalism EXCEPT?

- a) It rejected the Eurocentric ideal of the original jazz in favor of an understanding that one makes an original contribution when one adds one’s own perspective to an existing cultural product.
- b) It challenged the aesthetic imperialism of the racist white majoritarian society who controlled the black musicians in their recording and performance institutions.
- c) It led to the development of independent recording facilities and cooperatively owned performance venues in a white dominated society.
- d) It is at variance with the integrationism attributed to Martin Luther King and the Civil Rights Movement only in its approach.

**Q30. DIRECTIONS** *for question 30:* Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

- 1. The new venue, by Jean Nouvel, cost €386m (\$460m) and is in the unfashionable 19th arrondissement in the north-east of the city.
- 2. Construction of the Philharmonie, which began in 2011, has been anything but simple.
- 3. Until a few weeks ago, Parisians wanting to hear a great classical pianist or a world-class orchestra would head for the Salle Pleyel near the Champs Elysées.
- 4. Instead, from January 14th, top-tier orchestras and musicians, including Pleyel’s resident ensemble, the Orchestre de Paris, will move to the Philharmonie de Paris.
- 5. That option is no longer available as the venue will now be used for other kinds of music.

**Q31. DIRECTIONS** *for question 31:* The following question has a paragraph from which a sentence has been omitted, leaving the paragraph incomplete. From the given options, choose the one that completes the blank in the paragraph in the most appropriate way. Enter the number alongside the correct answer choice in the input box given below the question.

Every novel function in nature can be viewed as an interesting mix of adaptations, exaptations and adoptations. In our current state of knowledge we are not in any position to quantify the relative contributions of any of these three processes and their products for any given function. We are beginning to acquire the experimental tools to tease out the contribution of one or the other process in one or other function, which could help us relieve

some of our deepest ignorance of the world around us.

- 
1. This only shows how presumptuous we are in our assessment of our scientific abilities.
  2. There are realms of nature that will always remain beyond our ken.
  3. There can be no expansion of knowledge until we rid ourselves of this ignorance.
  4. However, researchers can hold their heads high, knowing that we are on the right track.
  5. We face an exhilarating prospect for the future, but cannot arrive at easy answers for the present.

**DIRECTIONS** *for questions 32 to 34:* The short passage given below is followed by a set of three questions. Choose the best answer to each question.

**Do the languages we speak shape the way we think?** Do English, Indonesian, Russian and Turkish speakers end up understanding and remembering their experiences differently simply because they speak different languages?

Take "Humpty Dumpty sat on a..." Even this nursery rhyme reveals how much languages can differ from one another. In English, we have to mark the verb for tense; we say "sat" rather than "sit." In Indonesian you need not change the verb to mark tense. In Russian, you would have to mark tense and also gender (changing the verb if Mrs. Dumpty did the sitting) and decide if the sitting event was completed or not. In Turkish, you would have to include in the verb how you acquired this information.

The question of whether languages shape the way we think goes back centuries; Charlemagne proclaimed that "to have a second language is to have a second soul." But the idea went out of favour with scientists when Noam Chomsky proposed that there is a universal grammar for all human languages which don't really differ from one another. It made no sense to ask whether linguistic differences led to differences in thinking.

Of course, just because people talk differently doesn't necessarily mean they think differently. In the past decade, cognitive scientists have begun to measure not just how people talk, but also how they think, asking whether our understanding of even such fundamental domains of experience as space, time and causality could be constructed by language.

Patterns in language offer a window on a culture's dispositions and priorities. For example, English sentence structures focus on agents, and in our criminal-justice system, justice has been done when we've found the transgressor and punished him or her accordingly (rather than finding the victims and restituting appropriately, an alternative approach to justice). So

does the language shape cultural values, or does the influence go the other way, or both?

To demonstrate the causal role of language in shaping thoughts, one needs studies that directly manipulate language and look for effects in cognition. It turns out that if you change how people talk, that changes how they think. When bilingual people switch from one language to another, they start thinking differently. If you take away people's ability to use language in a simple nonlinguistic task, their performance can change dramatically, making them look no smarter than rats or infants. New research shows us that the languages we speak not only reflect or express our thoughts, but also shape the very thoughts we wish to express. The structures that exist in our languages profoundly shape how we construct reality, and help make us as smart and sophisticated as we are.

**Q32.** Which of the following is the central theme of the passage?

- a) When we study language, we are uncovering in part what makes us human, getting a peek at the very nature of human nature.
- b) New cognitive research suggests that language profoundly influences the way people see the world.
- c) In English and in Russian, we need to mark the verb for tense but not necessarily so in Indonesian and Turkish.
- d) New evidence supports the growing belief that a cause-effect relationship exists between language and differences in thought.

**Q33.** Which of the following best captures the relationship between culture and language as can be understood from the passage?

- a) Language rules dictate how connotations of words need to vary greatly from culture to culture or from country to country.
- b) Language defines whole societies and can explain how a culture is caught in a vicious cycle of newness and obsolescence.
- c) Language can influence a culture's conceptions of justice, its inclinations and its values.
- d) Culture is the fruit of human language which discusses the importance given to human actions in a given culture.

**Q34.** What can be inferred from the statement "If you take away people's ability to use language in a simple nonlinguistic task, their performance can change dramatically, making them look no smarter than rats or infants." given in the last para of the passage?

- a) Language is evolutionary and words can influence our performance.
- b) Language has shaped human consciousness.
- c) There is a universal language common to all humans; which when taken away makes us no better than rats or infants.
- d) Devoid of language, humans would be incapable of interpreting and organizing reality.

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**DIRECTIONS** for questions 1 to 4: Answer these questions on the basis of the information given below.

On a particular day, exactly six persons – Amar, Bhanu, Chetan, Dinesh, Gaurav and Jitesh – visited a doctor for consultation, not necessarily in the same order. Each person paid a different amount to the doctor as consultation fee and each person consulted the doctor at a different time. At the end of the day, the doctor noticed that, except for the first two persons, the rest of the persons paid a consultation fee, which was equal to the average of the consultation fees paid by the previous two persons. The following information is known about the fees paid and the order in which they consulted the doctor:

1. The consultation fee paid by each person (in Rs.) was not necessarily an integer and no person paid more than Rs.2500.
2. Bhanu paid Rs.1000, which was the lowest among all the six persons, and she consulted the doctor immediately before Gaurav, who did not pay the highest amount.
3. Amar paid Rs.100 more than Dinesh, who consulted the doctor before both Amar and Jitesh.

**Q1. DIRECTIONS** for question 1: Type in your answer in the input box provided below the question.

What is the highest amount (in Rs.) paid for consultation by any of the six persons?

**Q2. DIRECTIONS** for questions 2 to 4: Select the correct alternative from the given choices.

Who was the last person to consult the doctor?

- a) Jitesh
- b) Gaurav

- c) Amar
- d) Chetan

**Q3. DIRECTIONS** for questions 2 to 4: Select the correct alternative from the given choices.

What is the total amount paid by all the six persons combined?

- a) Rs.8550
- b) Rs.8150
- c) Rs.6750
- d) Rs.7950

**Q4. DIRECTIONS** for questions 2 to 4: Select the correct alternative from the given choices.

Who among the six persons paid the second lowest amount for consultation?

- a) Chetan
- b) Dinesh
- c) Gaurav
- d) Jitesh

**DIRECTIONS** for questions 5 to 8: Answer these questions on the basis of the information given below.

An ancient tribe living in a Central African forest uses apples, oranges and bananas as their currency for all their transactions. Each apple is worth a certain number of oranges and each orange is worth a certain number of bananas. Any member of the tribe can exchange any number of the apples, oranges or bananas that he/she has with an equivalent number of other fruits. The three fruits are always traded whole, i.e., they are never cut into parts for the purpose of exchanging. The tribe does not have access to any other types of fruits.

On a particular day, Xio'tole, a member of this tribe, had with him four apples, three oranges and five bananas. He first exchanged one apple with one orange and three bananas. Later, he exchanged three oranges and one banana with two apples.



**Q5. DIRECTIONS** for question 5: Type in your answer in the input box provided below the question.

Today morning, Xi'jaee, the brother of Xio'tole, exchanged exactly one fruit and ended up with equal number of apples, oranges and bananas. What is the minimum total number of fruits that he could have had before he exchanged the fruit?

**Q6. DIRECTIONS** for questions 6 and 7: Select the correct alternative from the given choices.

If, immediately after Xio'tole exchanged the fruits, he purchased a boat, the maximum possible price of the boat is equivalent to

- a) 3 apples, 3 oranges, 8 bananas.
- b) 5 apples, 2 oranges, 5 bananas.
- c) 1 apple, 9 oranges, 4 bananas.
- d) 4 apples, 2 oranges, 10 bananas.

**Q7. DIRECTIONS** for questions 6 and 7: Select the correct alternative from the given choices.

Xigumbe, a member of this tribe, had with him 6 apples, 11 oranges and 9 bananas. What is the total number of fruits that he can exchange in order to be left with an equal number of apples, oranges and bananas?

- a) 3
- b) 4
- c) 5
- d) More than one of the above

**Q8. DIRECTIONS** for question 8: Type in your answer in the input box provided below the question.

De'yshan, a member of this tribe, had with her at least one fruit of each type. First, she exchanged two oranges and then she exchanged two apples. After this, she exchanged a certain number of bananas for exactly one apple and she ended up with an equal number of apples, oranges and bananas. What is the minimum number of fruits that she had with her after she exchanged the fruits?

**DIRECTIONS** for questions 9 to 12: Answer these questions on the basis of the information given below.

Exactly 100 students attempted a test which had two parts – Part A and Part B. Each part of the test has a different cut-off mark and the test also has a

total cut-off mark. Any student is said to have cleared the cut-off of a part of the test only if his score in that part is greater than or equal to the cut-off mark of that part. Any student is said to have cleared the test only if he cleared the cut-offs in both the parts and his total score in the test is greater than or equal to the total cut-off mark. Any student who scored less than any of the three cut-off marks is said to have failed the test. The following information is known about the number of students who cleared the cut-offs in each part of the test:

1. The number of students who cleared the cut-off in Part A is one-third the number of students who failed the test.
2. The number of students who did not clear the cut-off only in Part B is the same as the number of students who cleared only the total cut-off.
3. The number of students who did not clear the cut-off only in Part A is thirty less than the number of students who did not clear exactly two of the three cut-offs.
4. The number of students who cleared the cut-off only in Part B is two times the number of students who did not clear the cut-off only in Part A.
5. Exactly 34 students cleared at least two of the three cut-offs and exactly 87 students failed the test.
6. The number of students who did not clear any of the three cut-offs is 6 more than the number of students who cleared all the three cut-offs.

**Q9. DIRECTIONS** *for question 9:* Type in your answer in the input box provided below the question.

How many students did not clear exactly two of the three cut-offs?

**Q10. DIRECTIONS** *for questions 10 to 12:* Select the correct alternative from the given choices.

If the cut-off for Part A was 20 and the cut-off for Part B was 10, what is the minimum number of students who would have scored at least 30 marks in the test?

- a) 16
- b) 13
- c) 6
- d) 3

**Q11. DIRECTIONS** *for questions 10 to 12:* Select the correct alternative from the given choices.

What is the difference between the number of students who passed the test and the number of students who failed the test?

- a) 48
- b) 61

- c) 74  
d) 87

**Q12. DIRECTIONS** for questions 10 to 12: Select the correct alternative from the given choices.

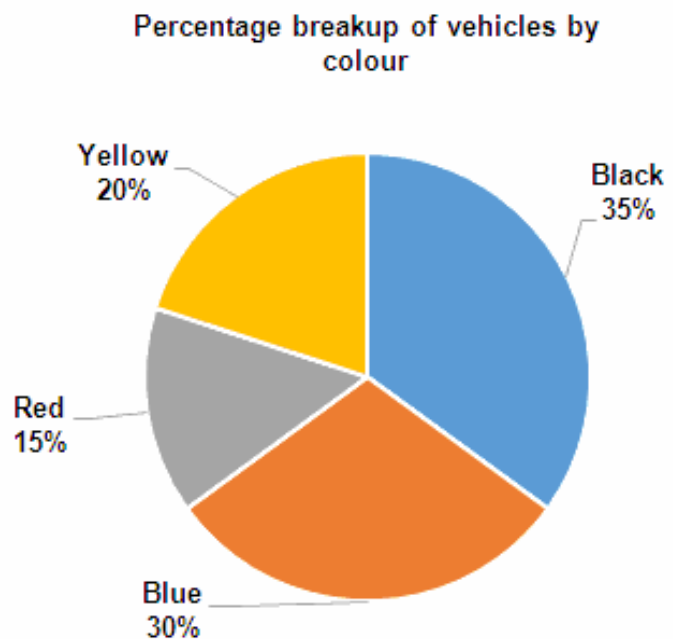
Which of the following is the highest?

- a) The number of students who cleared the cut-off in Part A.  
b) The number of students who cleared the cut-off in Part B.  
c) The number of students who cleared the total cut-off.  
d) The number of students who did not clear any of the three cut-offs.

**DIRECTIONS** for questions 13 to 16: Answer these questions on the basis of the information given below.

Hari works in a parking lot. On a particular day, he found that there were three types of vehicles parked in the parking lot – Cars, Bikes and Vans. Further, he also noticed that the colour of each vehicle was red, black, blue or yellow. The table below provides the number of vehicles by type of vehicle parked in the parking lot and the pie chart provides the percentage breakup of the number of vehicles by colour of the vehicle.

Vehicle Type	Number of Vehicles
Car	56
Bike	176
Van	68



**Q13. DIRECTIONS** for question 13: Type in your answer in the input box provided below the question.

If the number of red cars, black bikes and yellow vans are in the ratio 17 : 5 : 4, the number of blue bikes is at least

**Q14. DIRECTIONS** for questions 14 to 16: Select the correct alternative from the given choices.

If  $x\%$  of cars and  $x\%$  of bikes are blue in colour, what is the maximum possible value of  $x$  (there cannot be fraction of a car and bike)?

- a) 38.8%
- b) 37.5%
- c) **35%**
- d) **25%**

**Q15. DIRECTIONS** for questions 14 to 16: Select the correct alternative from the given choices.

If half of the bikes are of one colour and the other half of them are of another colour, what is the maximum possible number of blue cars in the parking lot?

- a) **2**
- b) **4**
- c) **40**
- d) **45**

**Q16. DIRECTIONS** for questions 14 to 16: Select the correct alternative from the given choices.

For any type of vehicle, if there are an equal number of black, blue, red and yellow vehicles of that type, they are said to be *equally distributed*. Which of the following statements is definitely false?

- a) Only cars are equally distributed.
- b) Only bikes are equally distributed.
- c) Both cars and bikes are *equally distributed*.
- d) None of the above.

**DIRECTIONS** for questions 17 to 20: Answer these questions on the basis of the information given below.

The city of Fleecewood conducted elections for electing four posts – Mayor, Councilman, Administrator and Commissioner. Each of five persons – Adam, Ben, Chris, George and Michael – contested for all the four posts. There are nine wards – Ward 1 through Ward 9 – in Fleecewood. Further, each citizen

casts exactly one vote, favouring any one of the five persons. After all the citizens voted, the four officials are elected based on the following criteria:

1. The candidate who received the highest number of votes across the nine wards combined is elected the Mayor.
2. For a candidate to be elected as the Councilman, he should have received at least 15% of the votes polled in a ward for each ward. Among the candidates who satisfy this condition, the candidate with the highest number of votes is elected the Councilman.
3. For a candidate to be elected as the Administrator, he should have received at least 15% of the votes polled in that ward for at least 6 wards. Among the candidates who satisfy this condition, the candidate who *topped* \* the maximum number of wards is elected the Administrator.
4. For a candidate to be elected as the Commissioner, he must have *topped*\* the maximum number of wards.

The same person can be elected to two or more posts.

\*A candidate is said to have *topped* a ward if he received a maximum number of votes across the five candidates in that ward

The following table provides the votes received by the five candidates in each ward of the city:

Ward	Adam	Ben	Chris	George	Michael
Ward 1	108	162	225	225	180
Ward 2	319	176	253	176	176
Ward 3	198	96	120	120	66
Ward 4	120	240	240	480	120
Ward 5	500	150	150	150	50
Ward 6	200	200	192	80	128
Ward 7	25	125	125	50	175
Ward 8	90	120	120	90	180
Ward 9	70	140	105	245	140

**Q17. DIRECTIONS** for questions 17 to 20: Select the correct alternative from the given choices.

What is the difference between the number of votes received by the Mayor in Ward 6 and the number of votes received by the Administrator in Ward 9?

- a) 45
- b) 95
- c) 52
- d) 28

**Q18. DIRECTIONS** for questions 17 to 20: Select the correct alternative from the given choices.

Who will be elected for more than one post?

- a) **Ben**
- b) Adam
- c) George
- d) None of them

**Q19. DIRECTIONS** for questions 17 to 20: Select the correct alternative from the given choices.

What is the difference between the total number of votes received by the Commissioner and the total number of votes received by the Councilman?

- a) **14**
- b) **97**
- c) **100**
- d) **83**

**Q20. DIRECTIONS** for questions 17 to 20: Select the correct alternative from the given choices.

If the total number of votes received by the Mayor, Councilman, Administrator and the Commissioner as a percentage of the total number of votes polled is a%, b%, c% and d%, which of the following is true?

- a)  $a > d > c > b$
- b)  $a > c = d > b$
- c)  $a > b = c > d$
- d)  $a = d > c > b$

**DIRECTIONS** for questions 21 to 24: Answer these questions on the basis of the information given below.

Ankit, a Marketing professor, has twelve students – A through L – enrolled in his class. He wanted to form study groups of these students, in the following manner, based on the marks that they scored in an examination:

For each study group that he wants to form, he first identifies the monitor of the study group. Any student whose marks fall within a 10% range of the marks of the monitor can be in the study group of that monitor. The monitors of the study groups can be any of the twelve students.

The size of a study group includes the monitor and all the members of the study group. Further, the size of each study group must be at least two and the size of all the study groups need not be the same. Each student must be a part of exactly one study group.

The following table provides the marks scored by the twelve students in the examination:



Student	A	B	C	D	E	F	G	H	I	J	K	L
Marks	78	67	79	81	94	84	74	63	85	89	71	88

**Q21. DIRECTIONS** for questions 21 to 24: Select the correct alternative from the given choices.

The students given in which of the following options can be the only students in a study group?

- a) A, B, D, F
- b) C, F, G, L
- c) C, I, J, L
- d) F, G, I, J

**Q22. DIRECTIONS** for questions 21 to 24: Select the correct alternative from the given choices.

Who among the following will definitely be in the same study group?

- a) A and C
- b) B and K
- c) D and I
- d) B and H

**Q23. DIRECTIONS** for questions 21 to 24: Select the correct alternative from the given choices.

If Ankit wanted all the study groups to have the same number of students, what is the minimum number of study groups that he must form?

- a) 2
- b) 3
- c) 4
- d) 6

**Q24. DIRECTIONS** for questions 21 to 24: Select the correct alternative from the given choices.

If D, G and L must be in the same group, who among the following cannot be a monitor?

- a) D
- b) A

- c) E  
d) L

**DIRECTIONS** for questions 25 to 28: Answer these questions on the basis of the information given below.

Himesh, the manager of a gym, has six different weighing machines – Machine A through Machine F – in his gym. However, except for one, none of the machines display the correct weight. On a particular day, Himesh measured his weight on each of the six machines and each machine displayed a different weight among 50 kg, 53 kg, 58 kg, 61 kg, 64 kg and 70 kg, in no particular order. The following information is known about the weights displayed by the machines:

1. The weight displayed by Machine A was more than that displayed by Machine D but neither of them displayed the correct weight.
2. The weight displayed by Machine F was 3 kg more than the correct weight of Himesh.
3. The machine that displayed the correct weight did not record the lowest weight among the six machines.
4. The weight displayed by Machine C was 6 kg more than that displayed by Machine B, which did not record the correct weight.

**Q25. DIRECTIONS** for questions 25 to 28: Type in your answer in the input box provided below the question.

What is the correct weight (in kg) of Himesh?

**Q26. DIRECTIONS** for questions 25 to 28: Type in your answer in the input box provided below the question.

What is the difference (in kg) between the weight displayed by Machine D and that displayed by Machine C?

**Q27. DIRECTIONS** for questions 25 to 28: Type in your answer in the input box provided below the question.

What was the weight (in kg) displayed by Machine A?

**Q28. DIRECTIONS** for questions 25 to 28: Type in your answer in the input box provided below the question.

If the error (in kg) in measurement of each machine is constant, what will be the weight displayed by Machine B for a dumbbell weighing 20kg?

**DIRECTIONS** for questions 29 to 32: Answer these questions on the basis of the information given below.

Eight delegates – A through H – attended a conference on climate change and were seated around a circular table with eight equally spaced chairs. Of the eight delegates, there were two delegates from each of China, India and USA and there was one delegate from Britain and one from France. The eight

delegates were asked to cast a vote on a proposal and each delegate voted either 'Yes' or 'No'. Further, no two delegates from the same country were sitting adjacent to each other and no two delegates from the same country casted the same vote for the proposal.

The following information is known about their positions, the countries they are from and their votes:

1. One of the delegates from China was sitting opposite F, who is from neither France nor India.
2. G was sitting adjacent to A, who is from USA and both of them cast the same vote.
3. B, who is from Britain, was sitting opposite H, who, in turn, is from India and H voted 'Yes'.
4. No three persons sitting consecutively cast the same vote.
5. No delegate from China was sitting adjacent to a delegate from Britain.
6. D, who is from China, is sitting opposite a delegate from India, who, in turn, cast the same vote as both C and D.
7. The delegate who is from France was sitting two places to the left of the delegate who is from Britain.

**Q29. DIRECTIONS** for questions 29 to 32: Select the correct alternative from the given choices.

How many delegates voted Yes?

- a) 3
- b) 4
- c) 5
- d) 6

**Q30. DIRECTIONS** for questions 29 to 32: Select the correct alternative from the given choices.

Which country is C from?

- a) USA
- b) India
- c) France
- d) China

**Q31. DIRECTIONS** for questions 29 to 32: Select the correct alternative from the given choices.

Who among the following is sitting two places away from G and is not from China?

- a) C

- b) **B**
- c) **E**
- d) F

**Q32. DIRECTIONS** for questions 29 to 32: Select the correct alternative from the given choices.

For how many delegates can it be said that at least one of the delegates sitting adjacent to them voted the same as them?

- a) **8**
- b) **7**
- c) **5**
- d) **3**

QA

**Q1. DIRECTIONS** for question 1: Type in your answer in the input box provided below the question.

The units digit of each of two natural numbers, X and Y, when expressed in

the number system to the base  $n$  is  $a$ . If the units digit of  $\left(\frac{X+Y}{2}\right)$  when expressed to the base  $n$  is either 2 or 5, find  $n$ .

**Q2. DIRECTIONS** for questions 2 to 7: Select the correct alternative from the given choices.

Yadav was using the following algorithm on his computer. In the algorithm, the function  $\text{Rem}(x/t)$  gives the remainder when  $x$  is divided by  $t$ .

- Step 1 : Read the positive integer  $x$ .  
           Let  $t = 2$ ,  $sum = 0$
- Step 2 :  $R = \text{Rem}(x/t)$ .
- Step 3 : If  $R = 0$ ,  $sum = sum + 1$  and  $x = x/t$ .  
           Go to step 2.
- Step 4 : If  $R \neq 0$ , then  $t = t + 1$ .
- Step 5 : If  $t < x + 1$ , then go to step 2.
- Step 6 : If  $t \geq x + 1$ , then print  $sum$  and stop.

If at the end of the program,  $sum = 7$ , which of the following could be a possible value of  $x$ ?

- a) **960**
- b) **840**
- c) **3600**

d) 1800

**Q3. DIRECTIONS** for questions 2 to 7: Select the correct alternative from the given choices.

When a new person is included, the average weight of a group increases by 1 kg. Instead, if the new person replaces one of the persons in the group, the average weight of the group decreases by 1 kg. If the weight of the replaced person is 50 kg, then which of the following statements is/are definitely true?

1. Twice the weight of the new person is more than the initial average weight of the group.
2. The initial number of members in the group is odd.
3. The magnitude, in kg, of the weight of the new person is an odd number.
4. The magnitude, in kg, of the initial average weight of the group is an odd number.

- a) Only II and IV
- b) Only II and III
- c) Only I and IV
- d) Only I and III

**Q4. DIRECTIONS** for questions 2 to 7: Select the correct alternative from the given choices.

If  $A = \{x : x \leq 10 \text{ and } x \in \mathbb{N}\}$ ,  $B = \{2\}$  and  $C = \{7\}$  and  $S$  is a subset of  $A$  such that  $n(S \cap B) = 1$  and  $n(S \cap C) = 0$ , how many such subsets are possible?

- a) 1023
- b) 255
- c) 818
- d) 256

**Q5. DIRECTIONS** for questions 2 to 7: Select the correct alternative from the given choices.

A trader marked a watch 40% above the cost price and then gave a discount of 10%. If he made a net profit of Rs.468 after paying a tax of 10% on the gross profit, find the cost price of the watch.

- a) Rs.1,800
- b) Rs.1,200
- c) Rs.2,000
- d) Rs.2,200

**Q6. DIRECTIONS** for questions 2 to 7: Select the correct alternative from the given choices.

There are two concentric circles. P, Q and R are three distinct points on the circumference of the outer circle such that PQ and PR are tangents to the inner circle. If the area of the outer circle is 36 sq.cm. and that of the inner one is 4 sq.cm., the area (in sq.cm) of the triangle PQR is

- a)  $\frac{256\sqrt{2}}{9\pi}$   
 b)  $\frac{128\sqrt{2}}{9\pi}$   
 c)  $\frac{64\sqrt{2}}{9\pi}$   
 d)  $\frac{32\sqrt{2}}{9\pi}$

**Q7. DIRECTIONS** for questions 2 to 7: Select the correct alternative from the given choices.

Three friends A, B and C have decided to complete a work together. The time taken by A, working alone, to complete the work is 12.5% more than the time taken by B and C, working together, to complete the work. The time taken by B, working alone, is  $426/7\%$  more than the time taken by A and C, working together, to complete the work. If C, working alone, takes 63 days to complete the work, find the time taken by all three of them together to complete the work.

- a)  $7\frac{7}{17}$  days  
 b)  $11\frac{7}{17}$  days  
 c)  $17\frac{7}{17}$  days  
 d) None of the above

**Q8. DIRECTIONS** for question 8: Type in your answer in the input box provided below the question.

Find the number of ordered pairs of positive integers (x, y) which satisfy the equation  $xy = y60$ .

**Q9. DIRECTIONS** for question 9: Select the correct alternative from the given choices.



In the equation  $(x - m)(x - n) - 4 = 0$ , if  $m$  is greater than  $n$ , which of the following is true about the roots of the equation?

- a) Both the roots lie in  $[n, m]$ .
- b) One root is in  $(-\infty, n)$  and the other root is in  $(m, \infty)$ .
- c) Both the roots are non-real.
- d) Both the roots lie in  $(n + 4, m + 4)$ .

**Q10. DIRECTIONS** for question 10: Type in your answer in the input box provided below the question.

A square of the greatest possible area is cut out from a rectangle, leaving behind a smaller rectangle. If the ratio of the length and the breadth of the smaller rectangle is equal to that of the original rectangle, then how many times the area of the smaller rectangle is area of the square cut out? Enter your answer accurate upto three decimal places.

**Q11. DIRECTIONS** for questions 11 to 17: Select the correct alternative from the given choices.

There are 12 numbers,  $p_1, p_2, \dots, p_{12}$ , satisfying the condition  $p_1 > p_2 > p_3 \dots p_{10} > p_{11} > p_{12}$ . How many sets of the form  $(a, b, c)$ , where  $a > b > c$ , can be formed from these 12 numbers?

- a) 120
- b) 150
- c) 180
- d) 220

**Q12. DIRECTIONS** for questions 11 to 17: Select the correct alternative from the given choices.

In a four-digit number, the sum of the first two digits is four-fifths of the sum of the last two digits, while the sum of the first digit and the last digit equals the sum of the other two digits. If the first digit is less than the second digit, how many such four-digit numbers exist?

- a) 2
- b) 3
- c) 4
- d) More than 4

**Q13. DIRECTIONS** for questions 11 to 17: Select the correct alternative from the given choices.

A single rail track exists between two stations, X and Y. A superfast train, S, leaves station X for station Y, at 8:00 a.m., and when it reaches Y, a passenger train, P, immediately starts from Y and reaches X by 9:30 a.m. The speed of the superfast train, S, is double that of another express train, E, which, in turn, is double that of the passenger train, P. On a particular day, due to a technical snag, the superfast train starts at X, 30 minutes behind the normal schedule. However, in order to maintain the schedule, both S and P increase their speeds. If S doubles its speed, what should be the ratio of the new speeds of the passenger train and the superfast train such that the passenger train reaches X exactly at the scheduled time on that day?

- a) 1 : 5
- b) 2 : 11
- c) 3 : 17
- d) 4 : 25

**Q14. DIRECTIONS** for questions 11 to 17: Select the correct alternative from the given choices.

If  $\log_n 54 = a$  and  $\log_n 72 = b$ , find  $\log_n 1728$ , in terms of  $a$  and  $b$ .

- a)  $\frac{1}{5}(15a - 7b)$
- b)  $\frac{1}{7}(15b - 3a)$
- c)  $\frac{1}{5}(27a - 3b)$
- d)  $\frac{1}{7}(12b - 27a)$

**Q15. DIRECTIONS** for questions 11 to 17: Select the correct alternative from the given choices.

A and B went to a market and found that the only fruits available there were bananas and mangoes. A purchased 23 mangoes more than the number of mangoes purchased by B. After that, both A and B purchased certain number of bananas as well. If A and B purchased a total of 30 and 40 fruits respectively and spent an equal amount of money on the fruits, find the price of a mango (in Rs.), given that it is Rs.10 more than that of a banana.

- a) 23
- b) 43
- c) 33
- d) 86

**Q16. DIRECTIONS** for questions 11 to 17: Select the correct alternative from the given choices.

If the non-reflex angle subtended by a chord of a circle at its centre equals the angle subtended by the chord on the minor arc, what is the ratio of the radius of the circle and the distance between two such parallel chords?

- a) 1 : 1
- b)  $\sqrt{2}$  : 1
- c) 1 :  $\sqrt{2}$
- d)  $\sqrt{3}$  :  $\sqrt{3}$

**Q17. DIRECTIONS** for questions 11 to 17: Select the correct alternative from the given choices.

Three filling pipes, R, S and T, together, can fill an empty tank in two hours. S can fill the tank four times faster than T. Initially, R alone is opened and after exactly  $x$  hours, it is closed and immediately S and T are opened together. The tank is full after exactly another  $y$  hours. If the tank was filled in a total of 4 hours, and  $x \neq y$ , find the time (in hours) that T alone would take to fill the tank.

- a) 6
- b) 12
- c) 20
- d) 24

**Q18. DIRECTIONS** for question 18: Type in your answer in the input box provided below the question.

What is the sum of all the odd numbers less than 1000 that can be formed using only the digits 0, 1, 2, 3 and 4, with repetitions being allowed?

**Q19. DIRECTIONS** for question 19: Select the correct alternative from the given choices.

If  $|x - 4| = |x| + |x - 3|$ , how many distinct values of  $x$  are possible?

- a) 1
- b) 2
- c) 3
- d) 4

**Q20. DIRECTIONS** for question 20: Type in your answer in the input box provided below the question.

Find the number of integral values of  $x$ , that satisfy the

inequality  $\frac{22}{(x-3)(x-4)} + \frac{12}{(x-3)} + 1 \leq 0$ .

**Q21. DIRECTIONS** for questions 21 and 22: Select the correct alternative from the given choices.

How many prime numbers are there which when divided by another prime number, give a quotient which is the same as the remainder?

- a) 0
- b) 1
- c) 2
- d) More than 2

**Q22. DIRECTIONS** for questions 21 and 22: Select the correct alternative from the given choices.

In a nuclear reaction, two species A and B are formed at different times. A reference time to ( $t_0 = 0$ ) is selected. At time  $t$  equal to  $-2 \mu\text{s}$  (microseconds), the age of A is  $18 \mu\text{s}$  more than three times that of B. When is the age of A exactly three times that of B?

- a)  $t = -7 \mu\text{s}$
- b)  $t = 7 \mu\text{s}$
- c)  $t = -9 \mu\text{s}$
- d)  $t = 9 \mu\text{s}$

**Q23. DIRECTIONS** for question 23: Type in your answer in the input box provided below the question.

What is the maximum number of planes that can be flying in a squadron of fighter planes, such that each plane in the squadron is equidistant from every other plane in the squadron?

**Q24. DIRECTIONS** for question 24: Select the correct alternative from the given choices.

In a 100 metre race, A can beat B by 10 m and C by 20 m. In a certain 500 m race, if A starts from a point 50 m behind the starting line, B starts from the starting line and C starts from a point 50 m ahead of the starting line, who finishes the race first?

- a) A

- b) **B**
- c) **C**
- d) All three finish the race at the same time.

**Q25. DIRECTIONS** for question 25: Type in your answer in the input box provided below the question.

The product of the lengths of the sides of a right-angled triangle is 33600. If its perimeter is 112, find the length of its hypotenuse.

**Q26. DIRECTIONS** for questions 26 to 29: Select the correct alternative from the given choices.

If  $a^{(p-q)} \cdot b^{(q-r)} \cdot c^{(r-p)} = 1$ , and  $a, b, c, p, q$  and  $r$  are rational numbers, then which of the following statements is necessarily true?

- a)  $a, b$  and  $c$  must all be equal.
- b)  **$p = q = r$**
- c) Either (A) or (B)
- d) None of the above

**Q27. DIRECTIONS** for questions 26 to 29: Select the correct alternative from the given choices.

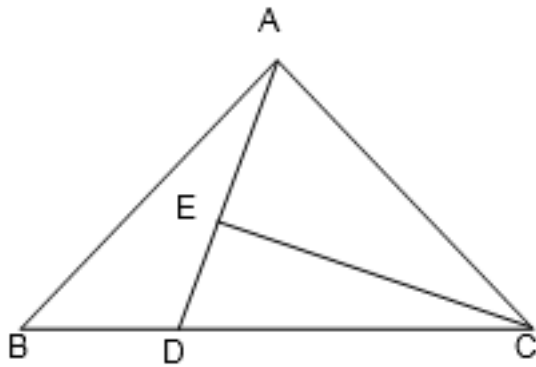
The expression  $54R - 44R$ , where  $R$  is an even number, is always divisible by which of the following numbers?

- (i) 9
- (ii) 41
- (iii) 881

- a) Only (i)
- b) Only (i) and (ii)
- c) (i), (ii) and (iii)
- d) None of the above

**Q28. DIRECTIONS** for questions 26 to 29: Select the correct alternative from the given choices.

$D$  is a point on side  $BC$  of triangle  $ABC$ , while  $E$  is a point on  $AD$ . Find the ratio  $AE : ED$ , if the area of triangle  $ABC$  is 87.5% greater than that of triangle  $AEC$  and  $CD$  is twice  $BD$ .



- a) 1 : 1
- b) 2 : 1
- c) 3 : 1
- d) 4 : 1

**Q29. DIRECTIONS** for questions 26 to 29: Select the correct alternative from the given choices.

In a school, 20 students play cricket, 30 play basketball and 50 play hockey. If the number of students who play exactly one game is 30 and the number of students who play exactly two games is 20, find the number of students who play all the three games.

- a) **15**
- b) 10
- c) **16**
- d) Cannot be determined

**Q30. DIRECTIONS** for question 30: Type in your answer in the input box provided below the question.

If  $y = \frac{30}{x} + x$  and  $x < 0$ , what is the greatest integer value that  $y$  can assume?

**Q31. DIRECTIONS** for questions 31 to 33: Select the correct alternative from the given choices.

Of 64 boxes of apricots, each box contains at least 60 and at most 81 apricots and not more than three boxes have the same number of apricots. What is the least number of apricots that can be there in all the boxes together?

- a) 4,532
- b) 4,391

- c) 4,491
- d) 4,492

**Q32. DIRECTIONS** for questions 31 to 33: Select the correct alternative from the given choices.

Chandrakanth took a loan of Rs.50,000, at an interest rate of 10% per annum, interest being compounded annually. If he repaid Rs.10,000 at the end of the first year and an equal amount at the end of each of the second, third and the fourth years, find the amount he has to pay at the end of the fifth year to repay the entire loan.

- a) Rs.20,050
- b) Rs.22,275.5
- c) Rs.26,795
- d) Rs.29,474.5

**Q33. DIRECTIONS** for questions 31 to 33: Select the correct alternative from the given choices.

The base radius and height of a right circular cone C1 are equal to the height and radius of a cylinder L1 respectively. The height and radius of C1 are interchanged to get another cone C2 and similarly the height and radius of L1 are interchanged to get another cylinder L2. If the volume of L1 is 9 times the volume of C1, what is the ratio of the volumes of L2 and C2?

- a) 1 : 9
- b) 1: 3
- c) 1 : 1
- d) 3 : 1

**Q34. DIRECTIONS** for question 34: Type in your answer in the input box provided below the question.

Find the remainder when  $2^{1783}$  is divided by 73.