VARC

DIRECTIONS *for questions 1 to 6:* The passage given below is followed by a set of six questions. Choose the best answer to each question.

In January 2009, as the United States waited for a new president to take office and tried to make sense of the most severe economic downturn since the Great Depression, *Esquire* published a short interview with Alice Cooper. "It used to be said: As GM goes, so goes America," declared the early shock-rocker and voice behind the anthem "School's Out." "Now it's: As Starbucks goes, so goes America." Leave it to someone from the cultural realm to detect this larger transformation in the American economy. During GM's reign as the nation's financial bellwether, business in the United States revolved around production, employment, and consumption – making things, creating good jobs, and selling big-ticket items. While Starbucks would never matter as much as GM – it never generated as much income, employed as many people, or sustained as many related industries – it was equally emblematic. During the days that the nation moved in tandem with Starbucks and latte sales, the American economy turned almost entirely on buying alone, not the trio of production, jobs, and purchasing. Through this epoch, buying drove the nation's economic engine, and even more, it shaped the daily lives identities, and emotions of the country's citizenry.

During the years that America went as Starbucks went, a period spanning roughly 1992 to 2007, most business analysts remained tied to the past, wedded to a GM-era kind of thinking. At no time was this more evident than when Starbucks itself started to falter. As the coffee company's stock price dropped and foot traffic in its stores fell in 2006, two years before the full onset of the "New Depression", commentators on MSNBC and in the *Wall Street Journal* explained the changes by relying on traditional, straightforward economic logic. They did so again in 2008, and in 2009, when Starbucks announced that after a fifteen-year uninterrupted run of nonstop growth, it would close hundreds of U.S. stores and lay off thousands of employees. Pundits blamed Starbucks' reversal of fortunes on the rising price of gasoline, competition from McDonald's and Dunkin' Donuts, the mortgage crisis, and a new frugality bred by rising joblessness. But the experts had it largely wrong, in terms of both the timing and the causes of Starbucks' decline. That's because they repeatedly fell back on culturally uninformed, old school economic reasoning to explain Starbucks' slip. More than they might be willing to admit, they expected buying decisions to revolve around utility, cost, and the physical qualities of a product but, as Starbucks' spectacular success had demonstrated, buying in post-GM, postindustrial America turned on more than price or functionality. During the twenty years before the latest Wall Street crash, as the economy went the way of Starbucks, buying became more than ever before not just a way for people to fulfil basic needs but an expression of longing, a source of entertainment, a strategy for mood management, and a

form of symbolic communication about class and social standing. The value of a particular good, therefore, depended on how well it met this broad range of needs, not on the physical qualities of the good itself. ...

Starbucks' hold on many in the United States grew out of another more fundamental and far-reaching transformation: the nearly wholesale replacement of civic society by a rapacious consumer society. Under the post-Reagan era, Milton Friedman-inspired free-market political economy of neoliberal, deregulated capitalism, brand-induced consumption oozed into every aspect of daily life. Yet hefty doses of buying, advertising, and marketing certainly weren't new to America. Neither was the branding of everything from fun runs to urinal covers to rock concerts. Nor was the commodification of consumers' deepest anxieties, desires, and aspirations all that new. It wasn't even that Americans suffered, in business writer Lucas Conley's telling phrase, from "obsessive branding disorder." What was new was the withering of nonmarket relationships and the public institutions that in the past had pushed back against the market and brands to challenge them for people's allegiances and identities.

Q1. Which of the following does the author mention in support of his claim that "business analysts remained tied to the past"?

 a) They failed to notice that the American economy moved in tandem with latte sales.
 b) They relied on traditional economic reasoning to explain why the American economy slowed down.
 c) They used old school metrics and logic to present the reason for Starbucks' reversal of fortune.
 d) They erroneously believed that the American economy depended on production, jobs and purchasing.

Q2. Which of the following is true regarding the change in the buying behaviour of people in the post-GM era as compared to the GM era?

 a) People stopped buying goods that catered to their basic needs in the post-GM era.
 b) In the post-GM era, price and functionality no longer played a part in buying.
 c) People cut back on purchasing big ticket items in the post-GM era.
 d) In the post-GM era, the value that people ascribed to a good no longer depended only on the physical qualities of the good.

Q3. Which of the following is a similarity between GM and Starbucks?

 a) Both the companies determined the direction in which the American economy moved.

b) Both the companies symbolized what the American economy depended on.
c) Both the companies were significant contributors to the growth of the American economy.
d) Both the companies shaped the daily lives and emotions of the country's citizenry.

Q4. Which of the following can be inferred about Starbucks from the passage?

a) Competition from other companies resulted in the fall of Starbucks' stock price.
b) The affordability of Starbucks' products is not the only reason for its spectacular success.
c) The stock price of Starbucks increased every year from 1992 till 2006.
d) Starbucks was instrumental in changing the nature of buying.

Q5. Which of the following cannot be inferred to be true regarding the society during the Reagan era?

a) The anxieties and aspirations of people were used for selling products.
b) Advertising and marketing were present almost everywhere in the society.
c) Brand played a major role in the presentation of products.
d) People suffered from "obsessive branding disorder".

Q6. Which of the following can be inferred to be a feature of a "rapacious consumer society"?

a) Public institutions do not counter the seductions of buying.
b) Markets and brands fulfil all the functions of the public institutions.
c) The civic society depends on branding to function efficiently.
d) Neither the markets and brands nor the public institutions function efficiently.

DIRECTIONS *for questions 7 to 12:* The passage given below is followed by a set of six questions. Choose the best answer to each question.
If a philosophy of society is to be effective, it must be as mobile and realistic as the forces which it would control. The weakness of an attitude which met the onset of insurgent economic interests with a generalized appeal to traditional morality and an idealization of the past was only too obvious. Thrown on to a helpless defensive by changes even in a slowly moving world of agriculture, medieval social theory found itself swept off its feet after the middle of the century by the swift rise of a commercial civilization, in which all traditional landmarks seemed to be submerged. The issue over which the

struggle between the new economic movements of the age and the scheme of economic ethics expounded by churchmen was most definitely joined, was not that of wages, but that of credit, money-lending and prices. The center of the controversy was the problem which contemporaries described by the word 'usury'.

In spite of property, Tudor England was still a Distributive State. It was a community in which the ownership of land, and of the simple tools used in most industries, was not the badge of a class, but the attribute of a society, and in which the typical worker was a peasant farmer, a tradesman, or a small master. In this world of small property-owners, of whose independence and prosperity English publicists boasted, in contrast with the "housed beggars" of France and Germany, the wage-earners were a minority and being, normally themselves the sons of peasants, with the prospect of stepping into a holding of their own, were often in a strong position vis-a-vis their employers.

The special economic malaise of an age is naturally the obverse of its special qualities. The grievance, which supplied fuel to social agitation, which evoked programs of social reform, and which prompted both legislation and administrative activity, sprang not from the exploitation of a wage-earning proletariat by its employers, but from the relation of the producer to his landlord, the dealer with whom he bought and sold, and the local capitalist to whom he ran into debt. The farmer must borrow money when the season is bad. The craftsman must buy raw materials on credit and get advances before his wares are sold. The young tradesman must scrape together a little capital before he can set up shop. Even the cottager must constantly ask the seller to "give day". Almost everyone has need of the money-lender who is a monopolist – 'a money-master', a corn monger, a rich priest – the solitary capitalist in a community of peasants and artisans. Naturally, he is apt to become their master.

It is not surprising that there should have been a popular outcry against extortion. The doctrine as to the ethics of economic conduct, which had been formulated by medieval Popes was rehearsed by the English divines of the sixteenth century, not merely as the conventional tribute paid by a formal piety to the wisdom of the past, but because the swift changes of the period in commerce and agriculture had, not softened, but accentuated, the problems of conduct for which it had been designed. Nor was it only against the particular case of the covetous moneylender that the preacher and the moralist directed their arrows. The essence of the medieval scheme of economic ethics had been its insistence on equity in bargaining – a contract is fair, St. Thomas had said, when both parties gain from it equally. The prohibition of 'usury' had been the kernel of its doctrines, not because the gains of the money-lender were the only species, _____

In reality, alike in the Middle Ages, the word 'usury' had not the specialized sense that it carries today. Like the modern profiteer, the usurer was a character so unpopular that most unpopular characters could be called

usurers, and by the average practical man almost any form of bargain which he thought oppressive would be classed as usurious. The interpretation placed on the word by those who expounded ecclesiastical theories of usury was equally elastic. ... If the common man was asked why usury was wrong, he would have quoted from scripture. If he was asked for a definition of usury, he would have repeated the words of a member of parliament who spoke on the Bill introduced in 1571: "It standeth doubtful what usury is; we have no true definition of it."

Q7. According to the passage, reforms in medieval ethical doctrine were required because

 a) the sweeping changes could not do away with the focus that affected ethical conduct.
 b) there was a great progress in the field of commerce and a conventional tribute needed to be paid to the wisdom of the past.
 c) the new changes had helped in solving the problems of conduct.
 d) the vast changing scenario had aggravated the problems of conduct.

Q8. From the sentence, "The special economic malaise of an age is naturally the obverse of its special qualities" (para 3), we infer that the author is referring to that aspect of society where

 a) the serious economic problems of an age are the reverse of its noteworthy traits.
 b) independence in vocation and dependence on external assistance go hand in hand.
 c) the remarkable economic feature of the society generally has an opposing trend.
 d) the distinctive aspect of a community is offset by its unusual virtuosity.

Q9. We understand, from the passage, that the absence of rigidity and impracticality in an ideology

 a) would enable it to absorb present trends in order to shape the future.
 b) would enable it to provide solutions for day-to-day problems.
 c) would render it efficacious in its role of regulation.
 d) would render it sound enough to help society face challenges.

Q10. According to the passage, 'Tudor England' was called a Distributive State because

 a) The capitalists were the proprietors of the industries and they played a role of rich landlords in medieval England.
 b) Most working people owned material resources.

c) An average worker was a peasant, a tradesman or a craftsman and land was freely distributed to them.
d) The beggars in England were not housed separately as compared to the "housed beggars" of France and Germany,

Q11. In the Middle Ages, the common man could not explain why 'usury' was wrong because

a) The word 'usury' had different connotations as it was a stretchable term.
b) The scriptures did not guide him adequately and hence he remained confused.
c) St. Thomas gave varied interpretations of 'usury' in his doctrines and St. Raymond's manual provided different definitions of 'usury'.
d) A member of parliament claimed that there was no true definition of 'usury'.

Q12. Which of the following will best conclude and complete the last sentence of the penultimate paragraph of the passage?

a) but because they were one subordinate element in a comprehensive system of social philosophy, which gave its poignancy to the controversy of which it became the center.
b) but because, in the economic conditions of the age, they were the most conspicuous species, of extortion.
c) but because the gains of the money-lender destroyed his own moral title – he had every man's living and did no man's duty.
d) but because extortion had become a way of life for many.

DIRECTIONS *for questions 13 to 15:* The passage given below is followed by a set of three questions. Choose the best answer to each question.
As homeowners contemplate how to salvage their drought-ravaged lawns this fall, Prof. Gordon T. Geballe would like them to consider a new approach. He is a forest microbiologist and assistant dean of the Yale Forestry School and an author of "Redesigning the American Lawn". Professor Geballe advocates a shift away from what he terms the flawless "industrial lawn" to the more informal "freedom lawn." He welcomes wildflowers and tolerates some weeds in his own lawn rather than achieve sweeping green perfection by overreliance on herbicides, fertilizers and water....
The Geballe family lives on the Branford shoreline and he is particularly alarmed about the perfect expanses of green lawn that border Long Island Sound, a tidal estuary of the Atlantic Ocean.

"Many Connecticut residents are concerned about the sewage that rushes into the Sound but it turns out that another source of the problem is nitrogen coming from fertilization of lawns, which also flows into the Sound," he said. Professor Geballe said that nitrogen also comes from fertilizer used in agriculture, on golf courses and public parks, but it is his hope that people will ask themselves how their own lawns, large or small, relate to the problems of the Sound.

He urges homeowners who use lawn services to discuss in detail what chemicals are being used. Less chemicals and fertilizer will make the lawn look less uniform and on the thorny matter of appearance, he admitted, "it will look different."

"Bad and good are terms that are used to express values," he said. "When I look at brown patches, I think they look beautiful because I didn"t use drinking water to water that patch during the drought."

Among his recommendations are to leave grass clippings on lawns, which will deliver nitrogen to the roots slowly. Applying inorganic fertilizer supplies instant nitrogen and he explained, "whatever the plant doesn"t get, if it"s watered or rained upon, gets below the roots and on its way somewhere else."

One suggestion he makes is simply to fertilize much less, but he would like people to ponder their individual lawn problems and come up with their own solutions.

Q13. Which of the following can be inferred to be a feature of a "freedom lawn"?

a) The lawn looks uniformly green and is maintained without using inorganic fertilizers and herbicides.
b) The lawn does not require any maintenance.
c) The lawn may have a few brown patches and weeds.
d) The plants in the lawn will have a deficit of nitrogen.

Q14. Why is Professor Geballe alarmed about "the perfect expanses of green lawn that border Long Island Sound"?

a) The nitrogen that runs into the Long Island Sound is not being used for fertilizing the surrounding lawn.
b) The green lawn that border the Sound offers stark contrast to the pollution of the Sound.
c) The polluted water in the Sound and the water that is used for maintaining the lawn both are being wasted unnecessarily.

d) The nitrogen used for maintaining the lawn runs into the Sound and further exacerbates the problems of the Sound.

Q15. Why does Professor Geballe advise against using inorganic fertilizers for maintaining lawns?

a) The nitrogen in inorganic fertilizers that plants do not absorb may flow into nearby waterbodies polluting it.
b) Plants tend to absorb high doses of nitrogen as inorganic fertilizers supply instant nitrogen.
c) Inorganic fertilizers must be used with large quantities of water and this is unacceptable in times of drought.
d) Using large quantities of inorganic fertilizers will make the lawn look uniformly green, which Professor Geballe does not find attractive.

DIRECTIONS *for questions 16 to 18:* The passage given below is followed by a set of three questions. Choose the best answer to each question.

Medical errors represent a serious public health problem and pose a threat to patient safety. As health care institutions establish "error" as a clinical and research priority, the answer to perhaps the most fundamental question remains elusive: What is a medical error? To reduce medical error, accurate measurements of its incidence, based on clear and consistent definitions, are essential prerequisites for effective action. Despite a growing body of literature and research on error in medicine, few studies have defined or measured "medical error" directly. Instead, researchers have adopted surrogate measures of error that largely depend on adverse patient outcomes or injury (i.e., are outcome-dependent). A lack of standardized nomenclature and the use of multiple and overlapping definitions of medical error have hindered data synthesis, analysis, comparison, collaborative work and evaluation of the impact of changes in health care delivery. ... Historically, patient safety researchers investigating the impact of error in medicine have adopted *outcome-dependent* definitions of medical error and its surrogate terms, and have limited their focus to patients experiencing adverse symptoms or injury as a consequence of medical care. Perhaps this tendency stems from a guiding principle of medical practice credited to Hippocrates, *prium no nocere*, which translates to "First, do no harm."… Outcome-dependent definitions of medical error have provided valuable insight into the costs, morbidity and magnitude of harm resulting from such events. Nonetheless, quality improvement initiatives require understanding of the *processes* that lead to such errors. Building a safer health care system will depend on our success at designing processes of care that ensure patients are protected from the threat of injury. Therefore, a definition of medical error should capture process or system failures that cause errors, irrespective of outcome. Ideally, process-dependent definitions of medical error should capture the full spectrum of medical errors, namely, errors that

result in adverse patient outcomes as well as those that expose patients to risk but do not result in injury or harm. Errors that do not result in injury are often referred to as near misses, close calls, potential adverse events or warning events.

Q16. Which of the following is a limitation of using outcome-dependent definitions of medical error?

 a) It is not possible to analyse the impact of medical errors.
 b) It is difficult to identify the reasons for the medical errors that occur.
 c) Not all the cases would be included in which the patient suffered an injury due to medical error.
 d) Even those cases would be included where there was no medical error involved.

Q17. Which of the following will be classified as a medical error according to a process-dependent definition but not according to an outcome-dependent definition?

 a) A surgeon mistakenly amputated the right leg of a patient instead of the left.
 b) A patient suffered an allergic reaction because the doctor forgot about the patient's allergy and prescribed a drug to which he was allergic.
 c) A doctor forgot to sterilize the needle before giving a patient an injection but the patient did not suffer from any adverse effect because of this.
 d) A doctor prescribed a higher dosage of antibiotics to a patient because a lower dosage was not working.

Q18. How is the Hippocrates' principle related to the outcome-dependent definition of medical error?

 a) Hippocrates' principle emphasizes not causing the patient any harm which is taken as the basis when developing an outcome-dependent definition of medical error.
 b) Hippocrates' principle implies that as long as the patient is not harmed, there is no medical error, which is the same as the outcome-dependent definition of medical error.
 c) Hippocrates' principle defines medical error as an incident in which patient suffers harm, which later came to be called the outcome-dependent definition of medical error.
 d) Hippocrates' principle and outcome-dependent definition of medical error both highlight not causing the patient any harm and the latter may be a reflection of the former.

DIRECTIONS *for questions 19 to 24:* The passage given below is followed by a set of six questions. Choose the best answer to each question.

Let's take Jared Diamond by the horns. He would like us to believe that the Maya decline was a tragic loss. I don't care if the Maya civilization collapsed. We shouldn't shed a single retrospective tear. I don't care whether the decline happened because of war / drought / disease ..... Because the Maya civilization in Mexico didn't amount to much. ...

Now gallery owners in New York will showcase the glories of Maya art. But glamorous talk of "kings", "lords" sounds better than a realistic description of murderous Maya chieftains who cared only about power, enslavement, and killing. The Maya wore spectacular feather head-dresses. But their hands dripped blood. As situations worsened, the Maya solution was "higher pyramids, foreign wars, more power to the kings, harder work for the masses." ...

Is it surprising that when the American John Stephens stumbled upon the Mayan ruins in Yucatan he should have been carried away? …

We went up to their desolate temples; and saw the evidence of their taste in arts. … We called back into life the strange people who gazed in sadness from the wall; pictured them in fanciful costumes. …"

Gazing upon the ruins Stephens conjures up in his imagination a world of "orators, warriors, statesmen." Yet Stephens didn't know that they weren't so much "gazing in sadness" as contorted with pain. Jared tells us that "archaeologists believed the ancient Maya to be gentle and peaceful." We now know that Maya warfare was chronic and unresolvable … and the sadness detected by Stephens was due to nasty customs:

"Captives were tortured (fingers, teeth and lower jaw were pulled out), and sacrificed (the captive whose arms and legs were bound together was rolled down steep stairs)." …

The Maya, and the Aztecs, offered barbarism plus pyramids. But we expect a civilization to be ennobling, to lift us up, to look beyond the endless cyclical violence of the barbaric past, however interesting its art may be. We expect a moral and philosophical perspective on human existence. The "examined life" as Socrates put it, with the fruit of this examination religiously incorporated. Egypt, India and China had this. Not the Maya. One needs a developed form of writing to record evidence that life has been examined, thought about, and critically assayed. It is true the Maya had a rudimentary script ... and a philosophical interest in time. Ronald Wright comments that "using their advanced arithmetic in a calendar (Long Count), the Maya charted the mystery of time, recording astronomical events and running mythological calculations far into the past and future." My own impression is that however successful they were in "charting the mystery of time", Maya calendrical calculations mainly reflected a mistaken devotion to

astrology and numerology – and a more sterile dead-end it would be hard to find.

What I look for in a civilization is Mind at Work. That's what we find in ancient Greece when Heraclitus maintained that *everything* changes, and Parmenides retorted that *nothing* changes. A serious religion with a seriously uplifting ethic is also welcome: failing that, as among the Greeks, let's have a serious freethinker like Xenophanes, who wondered why the faithful always imagine that their gods look like themselves:

"If oxen or horses or lions had hands, and could paint with their hands, and produce works of art as men do, horses would paint the forms of gods like horses, and oxen like oxen." ...

Eratosthenes used simple instruments and elementary geometry to measure the earth's diameter as 7,850 miles – about fifty miles short of the truth. … What Pythagoras said about right-angled triangles led to the discovery of incommensurables and in Bertrand Russell's words, his argument convinced the Greek mathematicians that geometry must be established independently of arithmetic.

In connection with Greek science, Democritus had cried: "I would rather find a single causal law than be king of Persia!" …. The civilization of the Maya never got past contesting blood-soaked patches of ground. In Greece, an enlightened tradition of political thought, had already received its quintessential expression under Pericles: "Our administration favors the many instead of the few in Athens: that is why it is called 'democracy'". ... The ripples of Greek civilization spread globally, and deserved to. There were no ripples from the Maya. No enlightenment. Just art and masonry and the dried blood of sacrificial victims.

Q19. The author's view is that the Maya civilization in Mexico didn't amount to much. All of the following statements by other anthropologists serve to strengthen this view EXCEPT?

a) "A serious civilization has to get beyond ritual, beyond charades and dressing up and sacred mumbo jumbo and human sacrifice. You have to see Mind at Work."
b) "There must be an attempt to move politics and economics of a geographical setting beyond the turmoil of barbarian chiefs everlastingly contesting blood-soaked patches of ground."
c) "For any civilization to have an everlasting impact on humanity, it should enable architecture, sculpture, painting and other art forms to flourish."
d) "It is sheer romantic fantasy to mourn the passing of an aristocracy of hypersensitive native aesthetes, but like bellicose tribal populations, the

Maya did little more than strain the carrying capacity of the land, wage war with neighbours, and appease their gods."

Q20. The author has a lot of reservations towards and is apprehensive about the actual contributions of the Maya civilization to humanity. Which saving grace gets admitted, directly or indirectly, by the author in the article?

 a) Maya art can be appealing.
 b) Ancient Maya were gentle and peaceful; but as war, drought and disease increased, the Maya became more pugnacious.
 c) The Mayans' philosophical interest in time led to phenomenal breakthroughs that has helped the cause of modern astronomy.
 d) Even the Maya, in the ancient world, had a moral and philosophical explanation for human life.

Q21. Which of the following statements regarding some prominent Greek(s) is correct, as can be inferred from the article?
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 (1) and (4) apply, then enter 14 (but not 41) in the input box.

　　1.　Democritus wasted away the golden opportunity of being the king of Persia by devoting his energies to the pursuit of law.
　　2.　Heraclitus and Parmenides, through their statements, implied that *everything* changes *nothing* and hence Mind is at work.
　　3.　Bertrand Russell convinced the mathematicians of his day to segregate geometry from algebra.
　　4.　Xenophanes complemented an idea in religion with a seriously uplifting ethic by quoting that animals would make their gods in the image of their several kinds.
　　5.　Eratosthenes narrowly missed the exact measure of the earth's diameter which he had made using simple instrumentation and his knowledge of basic geometry.
　　6.　Pericles was the first proponent of democracy in Athens.

Q22. The author has made a splenetic attack on the Maya civilization in the article. His criticism is chiefly dependent on which of the following premises?

 a) Murderous Maya chieftains who cared only about power, enslavement, and killing made the civilization a despotic, barbaric and decadent one.
 b) The Maya elite became extremists, and ultra-conservatives, squeezing the last drops of profit and blood from nature and humanity.

c) Maya warfare was chronic and unresolvable and the Maya civilization was caught in a sterile dead-end due to their excessive faith in astro-numerology.

d) The Maya contributed little to the spiritual, intellectual, moral and political compass needed to serve as a beacon light for the progress of the human race on earth.

Q23. Which of the following can be inferred from the passage?

     1.   The author believes that the Maya civilization did not have a moral perspective and a philosophical outlook towards life.

     2.   The Maya had only a rudimentary script because they spent all their time waging wars.

a) Only a
b) Only b
c) Both a and b
d) Neither a nor b

Q24. Which of the following would the author definitely agree with?

a) The Maya were endowed with superior knowledge of arithmetic, but increased warfare and an obsession with their own short term concerns led to their decline.

b) Mind was at work in Ancient Greece but not necessarily so in Ancient Egypt, India, China and Mexico.

c) John Stephen's response on gazing upon the Maya ruins was a natural and wholly aesthetic response.

d) The quality and quantity of art and architecture evident in the ruins of a civilization is a direct indicator of the degree of civility in a civilization.

Q25. DIRECTIONS *for questions 25 to 28:* 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.   Excluding South Africa, African countries issued $6.75 billion of dollar debt last year, just short of the record $7 billion sold in 2014.

     2.   Of all the countries south of the Sahara, only South Africa had ever sold a dollar-denominated bond to foreign investors.

     3.   But depreciating currencies, low commodity prices and a rise in interest rates in America are taking the shine off.

     4.   Ten years ago African bonds were a rare sight.

     5.   Since then, 16 more have.

Q26. DIRECTIONS *for questions 25 to 28:* 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.   This will give us a clearer picture of what the high country of the mind is like and also to prepare the way for an understanding of Phaedrus' thoughts.

    2.   Kant is always superbly methodical, persistent, regular and meticulous as he scales that great snowy mountain of thought concerning what is in the mind and what is outside the mind.

    3.   For this eighteenth-century German philosopher, he feels a respect that rises not out of agreement but out of appreciation for Kant's formidable logical fortification of his position.

    4.   It is, for modern climbers, one of the highest peaks of all, and I want now to magnify this picture of Kant and show a little about how he thought and how Phaedrus thought about him.

    5.   Phaedrus is a bizarre person when contrasted to the twentieth-century midwestern Americans who surround him, but when he is seen studying Immanuel Kant he is less strange.

Q27. DIRECTIONS *for questions 25 to 28:* 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.   As for agriculture, steady increases in grain production have kept the prices down.

    2.   Though humans could fertilize crops through clever use of their own waste, they instead rely on phosphorus from a diminishing supply of phosphate-containing rocks.

    3.   Even if firms continue to turn up new sources of commodities "in the ground", for example, new fossil fuels will only add to the amount of carbon in the atmosphere, increasing global warming.

    4.   It is in the nature of pessimists to find fresh reasons to fret.

    5.   But Mr Jeremy Grantham, a money manager, points out that higher production is mostly a result of rising yields, which are in turn supported by ever more intensive application of fertilizer; which, he argues, cannot continue.

Q28. DIRECTIONS *for questions 25 to 28:* 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.   Even so, one can easily imagine the use of orbiting sun-mirrors to alter the hours of light for agricultural, industrial or even psychological reasons.

     2.   The present natural light-dark cycle is tied to human biological rhythms in ways that are, as yet, unexplored.

     3.   Could have *The Seventh Seal* or *Winter Light,* two Swedish drama-fantasy films written and directed by Ingmar Bergman, been conceived in another climate?

     4.   To put the matter only half-facetiously, what happens to Bergman's brooding art when Stockholm's brooding darkness is lifted?

     5.   For example, the introduction of longer days into Scandinavia could have a strong influence on the culture and personality types now characteristic of that region.

Q29. DIRECTIONS *for questions 29 to 32:* 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.   Customers would receive their TV over the internet, and pay less for it.

     2.   The high cost of cable TV in America, combined with dire customer service and the rise of appealing on-demand streaming services as inexpensive substitutes, would drive millions to "cut the cord" with their cable providers.

     3.   The future of television was meant to have arrived by around now, in a bloodbath worthy of the most gore-flecked scenes from "Game of Thrones".

     4.   To stanch this flow, cable operators can offer "triple-play" packages that combine broadband, television and telephone service, which gives them a pricing advantage.

     5.   Those that do chop the cord almost never come back, joining the ranks of millennials who avoid signing up for cable in the first place, dubbed "cord-nevers" by media executives.

Q30. DIRECTIONS *for questions 29 to 32:* 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.   Out of apartheid and the Rwandan genocide came a boon for international justice and Mandela's government played a central role.

2.   So strongly felt was this mission that South Africa incorporated the ICC's founding treaty into its own domestic laws.

3.   Many South Africans see the decision to leave the ICC not as a triumph for pan-Africanism but as another moment in the country's descent under Mr Jacob Zuma, the current President.

4.   Under Nelson Mandela's government, South Africa championed the creation of a court to try the world's worst criminals.

5.   "Our own continent has suffered enough horrors emanating from the inhumanity of humans towards other humans," Mr Mandela said ahead of the Rome statute adopted in 1998, which established the International Criminal Court (ICC).

Q31.   DIRECTIONS *for questions 29 to 32:* 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 more rapidly the environment changes, the shorter the life span of organization forms.

2.   In short, the organizational geography of superindustrial society can be expected to become increasingly kinetic, filled with turbulence and change.

3.   To conclude, we are moving from bureaucracy to adhocracy.

4.   In administrative structure, just as in architectural structure, we are moving from long-enduring to temporary forms, from permanence to transience.

5.   The high rate of turnover is most dramatically symbolized by the rapid rise of what executives call "project" or "task-force" management.

Q32.   DIRECTIONS *for questions 29 to 32:* 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.   It has echoed around Chinese lecture halls in recent months.

2.   Mr Zhang and Mr Lin, for their part, are not about to declare a truce and if Keynes and Hayek are any guide, the dust will never settle on the planned debate or verbal clash between the two.

3.   Perhaps the most famous debate in the history of economics was that between John Maynard Keynes and Friedrich Hayek – a clash over the benefits and perils of government intervention that exploded in the 1930s and still reverberates today.

4.   It is not quite Keynes-Hayek, but Lin-Zhang is a marvel in its own right.

5.   Justin Lin, a former chief economist of the World Bank, who leans to Keynesian faith in public spending, has squared off against Zhang Weiying, a self-professed Hayekian who doubts bureaucrats can ever beat the free market.

Q33. DIRECTIONS *for questions 33 and 34:* Four alternative summaries are given below the text. Choose the option that best captures the essence of the text. Enter the number of the correct choice in the input box given below the question.

The fallacious idea that some characteristics of an organism are explained by the organism's intrinsic nature, whilst others reflect the influence of the environment is an ancient one. The distinction between innate and acquired traits in an organism might be understood within the area of psychology only as other fields such as molecular developmental biology and genetics have not been able to pinpoint the same. Recent philosophical analyses of the innate/acquired distinction can be classified into four types. The first identifies innate traits with those characteristic of an entire species and identifies acquired traits with those that vary between populations and individuals. The second identifies innate traits with those that can be explained by natural selection. The third, and most influential, identifies innate traits with those produced by a particular patterns of interaction between genes and environment. The fourth is different and suggests that labelling a trait 'innate' is a way to indicate that it lies outside the domain of psychology. Philosophical scepticism about innateness draws on a longstanding tradition of scepticism in developmental psychobiology. This research tradition interprets many of its own results as demonstrating the inadequacy of the innate /acquired distinction. Once again, this suggests that the distinction may be best understood via its actual use in psychological research.

1.   The distinction between innate and acquired traits is largely a psychological one since it has not been supported by genetics or molecular developmental biology. Any relationship between genetic causation and the innate/acquired distinction will be far more complex than saying that innate traits are 'caused by genes' whilst acquired traits are 'caused by the environment'.

2.   The age-old debate between innate and acquired traits has not yet been resolved due to the reliance on genetics and molecular biology

instead of psychological research. The idea that genetics and molecular developmental biology measure the degree to which a characteristic is innate is a vulgar fallacy. While three types of philosophical analyses explain the innate /acquired distinction, the fourth type draws our attention towards philosophical scepticism about innateness. Psychological research surfaces as the best area to study innateness.

      3.   Psychology still remains the only area within which the distinction between innate and acquired traits might be understood as other areas have failed to clarify the distinction. While three types of philosophical analyses explain the innate /acquired distinction, the fourth type is unique as it highlights the scepticism in proving the adequacy of the innate/acquired distinction.

      4.   The distinction between innate and acquired traits holds no water since studies have shown that no single property of a trait corresponds to its being innate. While genetics itself is well understood, its relationship to the innate/acquired distinction remains highly controversial.

Q34. DIRECTIONS *for questions 33 and 34:* Four alternative summaries are given below the text. Choose the option that best captures the essence of the text. Enter the number of the correct choice in the input box given below the question.

About a century ago, writing in the crucible of the early Cold War, American historians were convinced that something ran deep among U.S. citizens linking them to one another -- a national personality or fundamental essence that made Americans *American*. "By some alchemy," as Henry Steele Commager put it, "out of the blending of inheritance, environment, and experience, there came a distinctive American character." The very concept of national character went out of fashion in the 1960s when political and cultural events (not to mention challenges from New Left historians) made it harder to think of America in singular terms. There seemed to be too much conflict and diversity to locate a core. Social historians turned away from sweeping claims about all Americans in favor of detailed local studies of specific groups: slaves, pioneers, farmers, mill hands, shopkeepers, and immigrants. Suspicious of attempts to plot a unitary tradition, they disavowed not just previous definitions of American character but the notion of defining one at all.

      1.   A century ago American historians believed in national personality that linked all Americans because of their inheritance, environment and experience, but in the 1960s, political and cultural events including challenges from New Left historians seemed to disallow this oneness. Preferencing detailed local studies of specific groups over indiscriminate claims of oneness, social historians repudiated the very idea of national character.

2.   A century ago American historians believed in national personality that linked all Americans because of the blending of inheritance, environment and experience, but in the 1960s, political and cultural events from New Left historians seemed to disallow the oneness as their indiscriminate claims for detailed local studies of specific groups repudiated the notion of national character.

3.   Though American historians were convinced about the national character for the oneness of America a half-century ago, the conflict and diversity by specific groups like slaves, pioneers, farmers, mill hands, shopkeepers, and immigrants supported by the New Left historians, disallowed it. Hence the social historians repudiated the very idea of one national character in the 1960s.

4.   A century ago American historians believed in national personality that linked all Americans because of their inheritance, environment and experience, but in the 1960s, political and cultural events including challenges from New Left historians seemed to disallow this oneness. Social historians suspiciously disavowed the notion of defining one at all, as it turned away from sweeping claims about specific groups.

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DIRECTIONS *for questions 1 to 4:* Answer these questions on the basis of the information given below.
Five children – Lalit, Manoj, Pavan, Salman and Tarun – were studying in Class V in a school at the beginning of 2009. Towards the end of each year, the school conducts annual examinations for the students of each class and any child who clears the annual examination is promoted to the next class by the beginning of the next year. Any child who fails the exam has to repeat that class for another year. It is known that by the end of 2016, all the five children had cleared the Class X annual examinations. In 2012, Pavan and Salman were in the same class, while Manoj and Tarun were in the same class, which was not the same as the one that Salman was in. Further, in that year, Lalit was not in the same class as the one in which either Manoj or Pavan was. From 2009 to 2016, Salman did not fail the annual examinations in any year, while Pavan and Lalit failed twice and each of the rest failed exactly once.

Q1.   DIRECTIONS *for question 1:* Type in your answer in the input box provided below the question.
The number of children who were in the same class in 2011 can be at most

Q2.   DIRECTIONS *for question 2:* Select the correct alternative from the given choices.
Who among the following was definitely in Class VIII in 2014?

 a) Lalit
 b) Pavan
 c) Manoj
 d) Tarun

Q3.   DIRECTIONS *for question 3:* Type in your answer in the input box provided below the question.
What is the maximum possible number of years in which both Pavan and Tarun were in the same class?

Q4.   DIRECTIONS *for question 4:* Select the correct alternative from the given choices.
If, from 2010 to 2013, Manoj and Pavan were never in the same class, in which class would Manoj be in 2011?

 a) Class V
 b) Class VI
 c) Class VII
 d) Cannot be determined

DIRECTIONS *for questions 5 to 8:* Answer these questions on the basis of the information given below.
Six persons, A through F, went to an amusement park, in which there were exactly six rides. Each person took a few rides a certain number of times. Each time any person took a ride, he had to buy a ticket. The table below provides the price of a ticket for each of the six rides along with partial information about the number of times each person took each ride and the total amount spent by each person. Assume that no one spent any amount in the amusement park except on the rides.

Game	Ticket Price (in Rs.)	Number of times rides were taken					
		A	B	C	D	E	F
Rockin' Tug	12	2	1	3	7	1	
Rock-O-Plane	26	1	1		1	3	2
Balloon Race	15		3	6	4	2	
Cliffhanger	17	3	2	4	3		3
Devil's Wheel	31	0		1	1	4	2
Hayride	19		3			3	4
Total Amount Spent (in Rs.)		207	329	391	385	386	322

Q5. DIRECTIONS *for questions 5 to 8:* Select the correct alternative from the given choices.
Among the six persons, who took the Hayride the maximum number of times?

a) **A**
b) **C**
c) **D**
d) **F**

Q6. DIRECTIONS *for questions 5 to 8:* Select the correct alternative from the given choices.
What is the total number of times the six of them took the Balloon Race?

a) **17**
b) **18**
c) **19**
d) **20**

Q7. DIRECTIONS *for questions 5 to 8:* Select the correct alternative from the given choices.
For how many persons was the amount that they spent on any single ride at least 30% of the total amount that they spent?

a) **5**
b) **4**
c) **3**

d) **2**

Q8. DIRECTIONS *for questions 5 to 8:* Select the correct alternative from the given choices.
What is the total number of times that F took any ride?

a) **17**
b) **16**
c) **15**
d) **19**

DIRECTIONS *for questions 9 to 12:* Answer these questions on the basis of the information given below.
Harsh, a contractor, landed a civil engineering project. To manage the project more effectively, he divided the project into seven tasks – Task 1 through Task 7. Among the seven tasks, certain tasks cannot be started until some prerequisite tasks are completed.
Harsh assigns each of the seven tasks to exactly one person among five persons, A through E. However, only certain persons are competent to finish certain tasks and a task can be assigned only to a person competent to finish the task. For any task, any person who is competent to finish the task takes the same number of days to finish that task. Further, each person can work on only one task at a time and any person who finishes a task assigned to him takes one week's rest before he starts any other task.
The table below provides, for each task, the number of days required to finish the task, the persons who are competent to finish that task and the prerequisite tasks, if any, which need to be completed.

Task	Number of Days	Competent Persons	Prerequisite Tasks
Task 1	14	A, B	Task 5
Task 2	24	C, E	-
Task 3	23	C, D	Task 7
Task 4	16	B, D	Task, 3, Task 5
Task 5	19	C, E	Task 2, Task 7
Task 6	20	A, B	Task 1, Task 4
Task 7	25	B, C, E	-

Q9. DIRECTIONS *for question 9:* Type in your answer in the input box provided below the question.
What is the minimum number of days required for completing the project?

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

If the project is completed in the minimum number of days, to which of the following persons will the maximum number of tasks be assigned?

a) **A**
b) **C**
c) **D**
d) All of the above will be assigned equal number of tasks.

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

If only two persons were assigned all the seven tasks, what is the minimum number of days by which Task 1 can be finished?

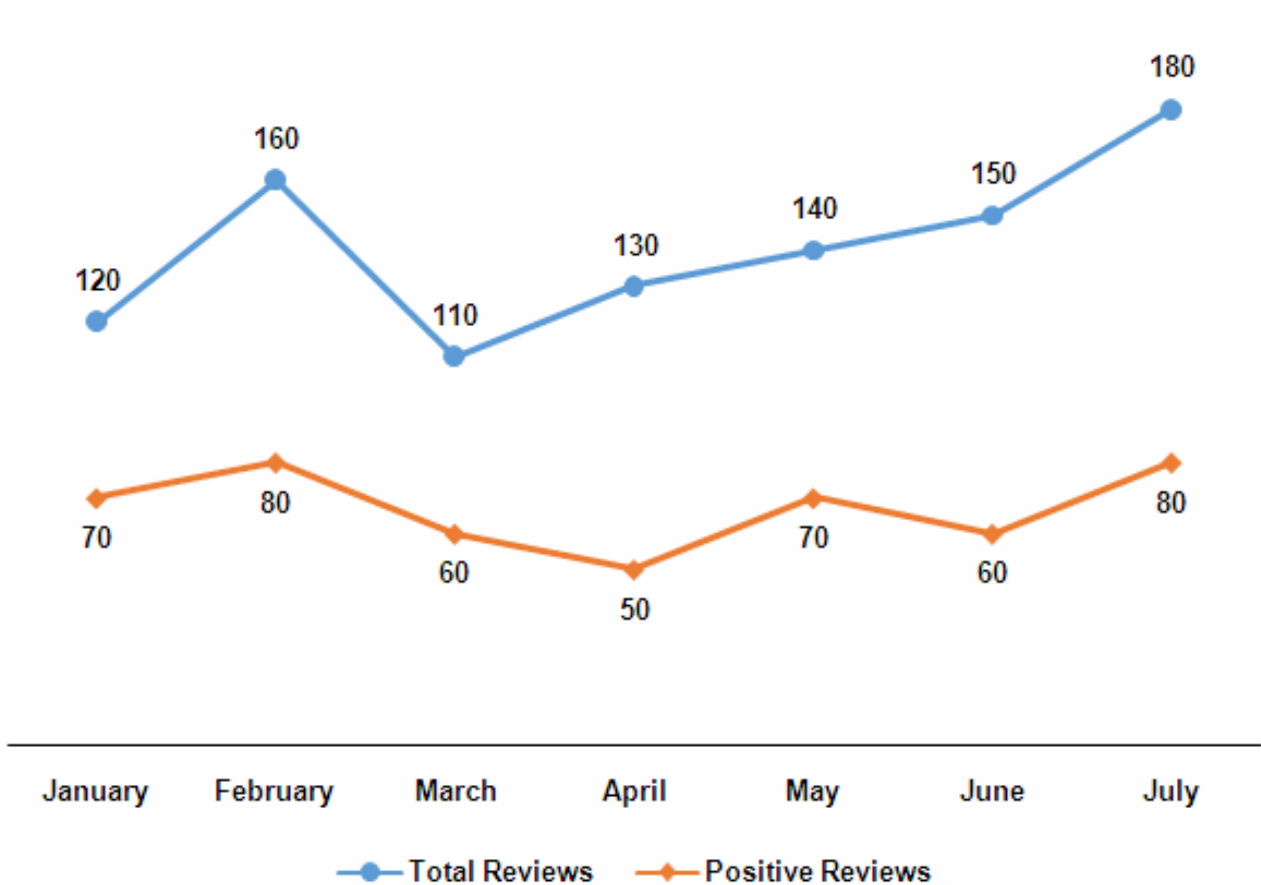a) **48**
b) **64**
c) **80**
d) **94**

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

If only two persons were assigned all the seven tasks, what is the minimum number of days required for completing the project?

a) **144**
b) **153**
c) **115**
d) **123**

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

Foodless Bistro is a fine dining restaurant. Some of its customers post reviews about the restaurant on social media. Customers post only two types of reviews – positive and negative. The following line graph provides, for each of the seven months from January to July, the total number of persons who posted a review of the restaurant and the number of persons who posted a positive review:

Total Reviews (by month): January 120, February 160, March 110, April 130, May 140, June 150, July 180
Positive Reviews (by month): January 70, February 80, March 60, April 50, May 70, June 60, July 80

Q13. DIRECTIONS *for questions 13 to 16:* Select the correct alternative from the given choices.
On how many months, from February to July, did the number of positive reviews as a percentage of the total number of reviews decrease as compared to the previous month?

a) **2**
b) 3
c) **4**
d) **5**

Q14. DIRECTIONS *for questions 13 to 16:* Select the correct alternative from the given choices.
On how many months, from January to July, did the number of positive reviews exceed the number of negative reviews by more than 20%?

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

Q15. **DIRECTIONS** *for questions 13 to 16:* Select the correct alternative from the given choices.

What is the maximum percentage increase in the number of negative reviews in any month as compared to that in the previous month, from February to July?
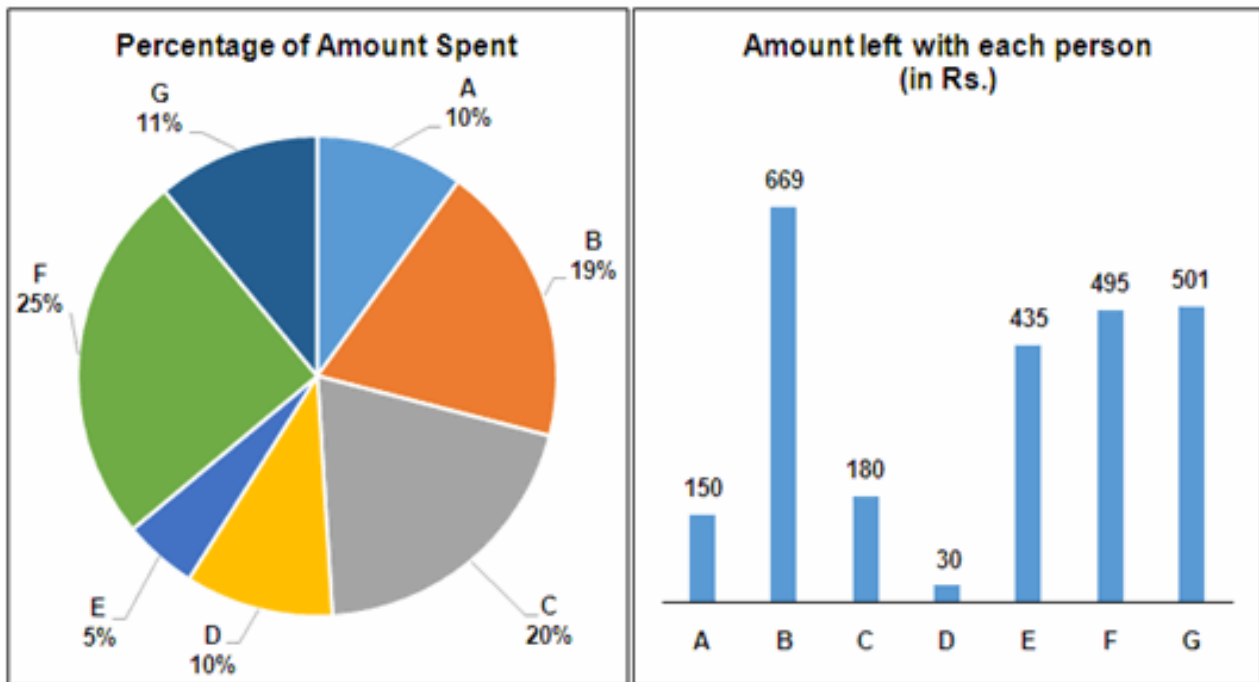
 a) **50%**
 b) 60%
 c) 28.57%
 d) 52.14%

Q16. **DIRECTIONS** *for questions 13 to 16:* Select the correct alternative from the given choices.

For how many of the seven months were the total number of negative reviews posted from January till the end of that month greater than the total number of positive reviews posted from January till the end of that month?

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

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

Seven persons, A through G, went on a trip. At the beginning of the trip, each person had with him a certain amount of money. The amount of money with the seven persons at the beginning of the trip was in the ratio 1 : 2 : 3 : 4 : 5 : 6 : 7, not necessarily in that order. Further, each person spent a certain amount of money during the trip. None of the persons spent more money than what he had at the beginning of the trip. The following pie chart provides the amount spent by each person during the trip as a percentage of the total amount spent by all the seven persons during the trip and the bar chart provides the amount left with each person at the end of the trip:

Percentage of Amount Spent

G 11% | A 10% | B 19% | C 20% | D 10% | E 5% | F 25%

Amount left with each person (in Rs.)

A	B	C	D	E	F	G
150	669	180	30	435	495	501

Q17. **DIRECTIONS** *for question 17:* Type in your answer in the input box provided below the question.
What is the highest amount (in Rs.) that any person had with him at the beginning of the trip?

Q18. **DIRECTIONS** *for question 18:* Select the correct alternative from the given choices.
What is the least amount spent by any person as a percentage of the total amount with him at the beginning of the trip?

a) 8.225%
b) 16.667%
c) 9.375%
d) 10.275%

Q19. **DIRECTIONS** *for question 19:* Type in your answer in the input box provided below the question.
What is the total amount (in Rs.) spent by the seven persons combined?

Q20. **DIRECTIONS** *for question 20:* Select the correct alternative from the given choices.
How many persons spent at least 30% of the amount that they had at the beginning of the trip?

a) **2**

b) **6**
c) **5**
d) **4**

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

Rahul has five e-mail IDs, each with a different e-mail service provider among AMail, BMail, CMail, DMail and FMail. The maximum size of an e-mail that can be sent using an e-mail ID of a service provider is called the Mail Limit of that service provider. The Mail Limit for each of the five e-mail service providers is a distinct value among 5 MB, 10 MB, 15 MB, 20 MB and 25 MB, not necessarily in that order.

On a particular day, Rahul sent exactly seven e-mails, each to a different friend among Virat, Shikhar, Rohit, Parthiv, Ashish, Ravi and Ashwin. The following information is known about the e-mails that he sent:

    1.   He sent at least one e-mail using each e-mail ID.
    2.   The Mail Limit of AMail is greater than 15 MB but he did not send an e-mail using AMail to Shikhar.
    3.   He sent two e-mails, one to Rohit and one to Parthiv, using the same e-mail ID, the Mail Limit of which was 10 MB.
    4.   He used DMail to send an e-mail of size 11 MB to Virat and the maximum size of any e-mail that he sent to any of the seven persons was 23 MB.
    5.   He used the e-mail ID with a Mail Limit of 15 MB to send an e-mail only to Ashwin.
    6.   He used BMail to send exactly two e-mails, one of which was to Ashish, and used FMail to send an e-mail of size 12 MB.

Q21. **DIRECTIONS** *for question 21:* Select the correct alternative from the given choices.
Rahul sent an e-mail using BMail to which of the following persons?

a) Rohit
b) Ashwin
c) Ravi
d) Shikhar

Q22. **DIRECTIONS** *for question 22:* Type in your answer in the input box provided below the question.
What is the Mail Limit (in MB) of FMail?

Q23. DIRECTIONS *for questions 23 and 24:* Select the correct alternative from the given choices.
Using which of the following e-mail service providers did Rahul send e-mails to two different persons?

 a) AMail
 b) CMail
 c) DMail
 d) FMail

Q24. DIRECTIONS *for questions 23 and 24:* Select the correct alternative from the given choices.
Which of the following can be the size of the e-mail that he sent to Shikhar?

 a) 3 MB
 b) 6 MB
 c) 13 MB
 d) More than one of the above

DIRECTIONS *for questions 25 to 28:* Answer these questions on the basis of the information given below.
Raghu was travelling on a train to his hometown. On the way, the train stopped at exactly six different stations – Ambanagar, Rajnagar, Bhagnagar, Tamnagar, Padhnagar and Udainagar – not necessarily in the same order. In a few of the six stations, Raghu purchased a different item and the following information is known about the stations and the items that he purchased:

1.   When the train stopped at one of the stations, Raghu purchased Fried Rice as he was feeling hungry.
2.   After the train left the station at which he purchased the Fried Rice, he realized that he did not have any spoon to eat the Fried Rice with. So, he purchased a spoon at one of the stations after that but it was not at Rajnagar.
3.   After the train left the station at which he purchased the spoon, he realized he needed some Ketchup to go along with his Fried Rice. Therefore, he purchased the ketchup at one of the stations after that, which was the station immediately after Ambanagar.
4.   Tamnagar was neither the first station nor the last station that the train stopped at, while Udainagar was the fifth station.
5.   The last of the six stations that the train stopped at was Raghu's hometown and he got down the train at this station. He did not purchase anything at the last station.

6.   The train stopped at Rajnagar immediately after it stopped at Bhagnagar, while the station immediately before Udainagar was not Ambanagar.

Q25.   DIRECTIONS *for questions 25 to 28:* Select the correct alternative from the given choices.
What is Raghu's hometown?

a) Padhnagar
b) Ambanagar
c) Rajnagar
d) Cannot be determined

Q26.   DIRECTIONS *for questions 25 to 28:* Select the correct alternative from the given choices.
In which station did Raghu purchase the Spoon?

a) Tamnagar
b) Ambanagar
c) Udainagar
d) Cannot be determined

Q27.   DIRECTIONS *for questions 25 to 28:* Select the correct alternative from the given choices.
Which item did Raghu purchase in Tamnagar?

a) Fried Rice
b) Spoon
c) Ketchup
d) He did not purchase anything in Tamnagar

Q28.   DIRECTIONS *for questions 25 to 28:* Select the correct alternative from the given choices.
In which station did Raghu purchase the Fried Rice?

a) Bhagnagar
b) Rajnagar
c) Ambanagar
d) Cannot be determined

DIRECTIONS *for questions 29 to 32:* Answer these questions on the basis of the information given below.
Gaurav, a chemist, wanted to study the reaction between metals and acids. He selected five metals – Iron, Copper, Silver, Gold and Aluminium – and five acids – Hydrochlonic Acid, Sulmuric Acid, Nipric Acid, Carboxyc Acid and

Borocilic Acid. In each reaction, he mixed one metal with one acid and he used any metal or acid exactly once. Each reaction between a metal and an acid left a precipitate which was of a different colour among Red, Brown, Blue, Green and Grey.

The following information is known about the reactions:

1.   He did not mix Gold with Sulmuric Acid but the reaction involving Gold left a Brown precipitate.

2.   The reaction involving Borocilic Acid left a Blue precipitate, while the reaction involving Carboxyc Acid left a Green precipitate.

3.   He did not mix Aluminium with Carboxyc Acid.

4.   The reaction involving Copper left a Red precipitate, while the reaction involving Iron did not leave a Blue precipitate.

5.   The reaction involving Aluminium did not leave a Blue precipitate, while the reaction involving Hydrochlonic Acid did not leave a Grey precipitate.

Q29.   DIRECTIONS *for questions 29 to 32:* Select the correct alternative from the given choices.
What is the colour of the precipitate in the reaction involving Aluminium?

 a) Green
 b) Blue
 c) Grey
 d) Cannot be determined

Q30.   DIRECTIONS *for questions 29 to 32:* Select the correct alternative from the given choices.
Which acid was Silver mixed with?

 a) Carboxyc Acid
 b) Borocilic Acid
 c) Sulmuric Acid
 d) Cannot be determined

Q31.   DIRECTIONS *for questions 29 to 32:* Select the correct alternative from the given choices.
Which of the following can be the colour of the precipitate in the reaction involving Sulmuric Acid?

 a) Grey
 b) Green
 c) Blue
 d) None of the above

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

If the reaction involving Nipric Acid left a Grey precipitate, which acid was Copper mixed with?

a) Hydrochlonic Acid
b) Nipric Acid
c) Sulmuric Acid
d) Borocilic Acid

QA

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

If p and q are real and $p2 + q2 - 6p + 18q + 90 = 0$, find the value of $p2 + 9q2 - 6pq$.

Q2. **DIRECTIONS** *for questions 2 to 5:* Select the correct alternative from the given choices.

If x and y are real numbers such that

$$5^{\log_2 x} = \frac{7}{2} + \frac{7}{4} + \frac{7}{8} \ldots \quad \text{and} \quad 5^{\log_7 y} = 1 + \frac{1}{2} + \frac{1}{4} \ldots, \text{ find } x - y.$$

a) **2log75**
b) **7log52**
c) 14log52
d) None of the above

Q3. **DIRECTIONS** *for questions 2 to 5:* Select the correct alternative from the given choices.

N is a positive integer, which when divided by 16, 17 and 18 leaves remainders of 6, 7 and 8 respectively. If M = N2 + 5N + 6, find the remainder when M is divided by 12.

a) **2**
b) **6**
c) 8
d) **4**

Q4. **DIRECTIONS** *for questions 2 to 5:* Select the correct alternative from the given choices.

Three dogs D1, D2 and D3 undergo a training programme to walk. After the training, the dogs had the following pattern of walking: the distances covered by 3 steps of D1, 4 steps of D2 and 5 steps of D3 are all equal. Further, in the time taken by D1 to take 5 steps, D2 takes 4 steps and D3 takes 6 steps. What is the ratio of the speeds of walking of D1, D2 and D3 respectively?

a) 25 : 15 : 18
b) 15 : 18 : 25
c) 25 : 18 : 25
d) 18 : 25 : 15

Q5. DIRECTIONS *for questions 2 to 5:* Select the correct alternative from the given choices.
There are eight switches in a row, from left to right, on a switch board. At least one of the eight switches is switched on. In how many ways is this possible, if all the switches which are switched on are next to each other?

a) **28**
b) **32**
c) **36**
d) **64**

Q6. DIRECTIONS *for question 6:* Type in your answer in the input box provided below the question.

If $f(x) = \dfrac{25^x}{25^x + 5}$, then find the value of $f\left(\dfrac{1}{99}\right) + f\left(\dfrac{2}{99}\right) + \ldots + f\left(\dfrac{98}{99}\right)$.

Q7. DIRECTIONS *for questions 7 to 12:* Select the correct alternative from the given choices.
I asked my friend to calculate the sum of the first *n* natural numbers. He gave me the answer as 660. I later observed that my friend had missed out a number. The number missed out by him was

a) **22.**
b) 6.
c) **12.**
d) **16.**

Q8. DIRECTIONS *for questions 7 to 12:* Select the correct alternative from the given choices.

Ajay can complete a work in 32 days. Bhanu can complete the same work in half the time taken by Ajay. Chandu completes the work in half the time taken by Bhanu. Dinesh completes the work in half the time taken by Chandu. They are paired into two groups of two each. If the first group takes $\frac{2}{3}$ times the time taken by the other group to complete the work, the second group comprises

a) Ajay and Chandu.
b) Bhanu and Chandu.
c) Ajay and Dinesh.
d) Bhanu and Dinesh.

Q9. DIRECTIONS *for questions 7 to 12:* Select the correct alternative from the given choices.
A shopkeeper sells two items – A and B. The selling price of A is 80% of that of B. The marked prices of A and B are in the ratio of 2 : 3 respectively.

Further, there is a 33 $\frac{1}{3}$ % discount offered on B and the cost prices are in the same ratio as the respective marked prices. If the cost price and profit percentage of A are Rs.50 and 60% respectively, find the marked price of B.

a) Rs.150
b) Rs.100
c) Rs.90
d) Rs.120

Q10. DIRECTIONS *for questions 7 to 12:* Select the correct alternative from the given choices.
Let t_n be the nth term of a series for which $t_{n + 1} = t_n + t_{n - 1}$, for all n greater than 1. If $t_1 = 1$ and $t_2 = 1$, which of the following is equal to the sum of the squares of the first thirty terms of the series?

a) $t_{32} \times t_{31}$.
b) $(t_{30})^2 + t_{30}$.
c) $(t_{29} + 1) \times (t_{30} + 1)$.
d) $t_{31} \times t_{30}$.

Q11. DIRECTIONS *for questions 7 to 12:* Select the correct alternative from the given choices.
Find the length of the common chord of two circles of radii 156 cm and 65 cm, whose centres are 169 cm apart.

a) 60 cm

b) $52\sqrt{11}$ cm
c) 104 cm
d) 120 cm

Q12. **DIRECTIONS** *for questions 7 to 12:* Select the correct alternative from the given choices.
If $a + b + c + d = 13$, find the minimum possible value of $a3 + b3 + c3 + d3$, given that a, b, c and d are all positive integers.

a) **142**
b) **145**
c) **108**
d) **127**

Q13. **DIRECTIONS** *for question 13:* The question given below is followed by two statements, I and II. Study the information given in the two statements and assess whether the information given in the statements is sufficient to answer the question and choose the appropriate option among the given choices.
Is $a = b$?

1.　$(a + b)^{\left(\frac{1}{a} + \frac{1}{b}\right)} = 4$
2.　$(a - 50)2 = (b - 50)2$

a) The question can be answered by using one of the statements alone, but cannot be answered by using other statement alone.
b) The question can be answered by using either statement alone.
c) The question can be answered by using both statements together, but cannot be answered by using either statement alone.
d) The question cannot be answered even by using both the statements together.

Q14. **DIRECTIONS** *for question 14:* Select the correct alternative from the given choices.
There are three varieties of tea – I, II, III – available in the market. Mani bought a certain quantity of each variety. The average cost per kg of varieties I and II for the quantities he bought worked out to be Rs.50. The same for varieties II and III is Rs.60 and that for varieties I and III is Rs.68. Which of the following cannot be the average cost per kg of all the three varieties of tea that he bought?

a) Rs.56
b) Rs.61
c) Rs.63

d) Rs.65

Q15. DIRECTIONS *for question 15:* Type in your answer in the input box provided below the question.

In a polygon, let X be the number of triangles that can be formed by joining any three of the vertices of the polygon, such that exactly one of the sides of the triangle is also a side of the polygon, and let Y be the number of triangles which can be formed in a similar manner, but with exactly two of sides of the triangle also being the sides of the polygon. If, in a regular convex polygon, P, X + Y = 28, find the number of sides of the polygon.

Q16. DIRECTIONS *for questions 16 to 19:* Select the correct alternative from the given choices.

Two functions $f(x)$ and $g(x)$ are defined for any real value of x as follows:

$f(x) = x3 + 1$.
$g(x) = x2 + x$.

Which of the following statements is true?

a) $f(x) > g(x)$ for any x.
b) $f(x) < g(x)$ for any x.
c) $f(x) > g(x)$ for $x > 1$ and $f(x) < g(x)$ for $x < 1$.
d) $f(x) > g(x)$ for $x > 1$ and $f(x) < g(x)$ for $x < -1$.

Q17. DIRECTIONS *for questions 16 to 19:* Select the correct alternative from the given choices.

Vessel 1 contains 5 litres of alcohol; vessel 2 contains 5 litres of water. From vessel 1, one mug of alcohol is taken and added to vessel 2. One mug of the mixture is now poured back into vessel 1. What can be said about the percentage of alcohol in vessel 2 and the percentage of water in vessel 1?

a) The former is greater than the latter.
b) The two are equal.
c) The latter is greater than the former.
d) Nothing can be said, as the volume of the mug is not known.

Q18. DIRECTIONS *for questions 16 to 19:* Select the correct alternative from the given choices.

Two identical tanks are provided with inlets of different flow rates, such that the first tank can be filled in 10 minutes, while the second tank can be filled in 20 minutes. If the two tanks are placed at the same level and connected at the bottom, and both the inlets are opened simultaneously, how long does it take for both of them to be filled?

a) 15 minutes

b) $13\dfrac{1}{3}$ minutes

c) $16\dfrac{2}{3}$ minutes

d) $14\dfrac{1}{4}$ minutes

Q19. DIRECTIONS *for questions 16 to 19:* Select the correct alternative from the given choices.

If *a*, *b*, *c*, are positive numbers in continued proportion and none of them is equal to 1, the maximum value of (log$_b$*a* × log$_b$*c*) is

a) 1
b) 2
c) *e*

d) $\dfrac{1}{e}$

Q20. DIRECTIONS *for questions 20 and 21:* Type in your answer in the input box provided below the question.
A building has a height of 30 m. An observer stands on the ground at a point, A, and observes that the angle of elevation of a point, P, on the second floor, which is 10 m above the ground, is the same as the angle subtended by the rest of the building above the point P. Ignoring the height of the observer, find the approximate distance (in m) between the observer and the foot of the building.
Enter your answer value rounded off and accurate up to two decimal places.

Q21. DIRECTIONS *for questions 20 and 21:* Type in your answer in the input box provided below the question.
If *a* + *b* + *c* = 25 and (1 + *b*) (*a* + *c*) = 144, find the value of $b^2 - 24b$.

Q22. DIRECTIONS *for questions 22 and 23:* Select the correct alternative from the given choices.
In a management entrance test there are 150 questions. Six marks are awarded for each correct answer, two marks are deducted for each wrong answer and one mark is deducted for each question left unattempted. Which of the following could be the number of questions left unattempted by a candidate who got a net score of 360?

a) 24
b) 26
c) **28**
d) 30

Q23. DIRECTIONS *for questions 22 and 23:* Select the correct alternative from the given choices.

It has been planned to connect the five cities Delhi, Mumbai, Chennai, Kolkata and Bangalore through a network of super-expressways, with certain conditions. Each of the five cities should be connected to at least three other cities. Also, Delhi, being the national capital, should be connected to all the other cities. What is the minimum number of super-expressways required for this plan?

a) 8
b) 10
c) 7
d) 9

Q24. DIRECTIONS *for questions 24 and 25:* Type in your answer in the input box provided below the question.

If x and y are positive real numbers such that $6xy + 10x + 15y = 39$, find the minimum value of $2x + 3y$.

Q25. DIRECTIONS *for questions 24 and 25:* Type in your answer in the input box provided below the question.

Find the remainder when 528528528 ……… upto 528 digits is divided by 27.

Q26. DIRECTIONS *for question 26:* Select the correct alternative from the given choices.

If two of the sides of a right-triangle are 10 cm and 10.5 cm and its inradius is 3 cm, what is its circumradius?

a) 14.5 cm
b) 5 cm
c) 5.25 cm
d) 7.25 cm

Q27. DIRECTIONS *for question 27:* The question given below is followed by two statements, I and II. Study the information given in the two statements and assess whether the information given in the statements is sufficient to answer the question and choose the appropriate option among the given choices.

Triangle ABC is right angled at B. What is the value of AB + BC?

1. Diameter of the circle inscribed in the triangle ABC is 10 cm.
2. Diameter of the circle circumscribing the triangle ABC is 27 cm.

a) The question can be answered by using one of the statements alone, but cannot be answered by using the other statement alone.
b) The question can be answered by using either statement alone.
c) The question can be answered by using both statements together, but cannot be answered by using either statement alone.
d) The question cannot be answered even by using both the statements together.

Q28. DIRECTIONS *for questions 28 to 31:* Select the correct alternative from the given choices.
Little Euclid was playing with a cuboidal box, with a square base, and 14 identical wooden spheres. He observed that he could snugly and perfectly arrange exactly nine of the fourteen spheres at the bottom of the box in a single layer comprising three rows and three columns. He then placed another layer of four spheres, stably and symmetrically on top of the bottom layer (i.e., such that each sphere in the second layer touched exactly four spheres of the bottom layer). Finally, he placed the last sphere, stably and symmetrically, on top of the second layer and observed that he could then just close the lid of the box. Find the ratio of the height of the box to the radius of each sphere.

a) $2\left(2\sqrt{3}-1\right)$

b) $2\left(\sqrt{2}+1\right)$

c) $2\left(\sqrt{3}+1\right)$

d) $3\left(2\sqrt{2}-1\right)$

Q29. DIRECTIONS *for questions 28 to 31:* Select the correct alternative from the given choices.
A survey about preferred TV channels was conducted among a group of 10,000 people. The following were the results:
93% liked Sony TV,
89% liked Zee TV,
81% liked Star Plus,
75% liked Zee Cinema,
78% liked MTV,
and 100 people did not like any of these five channels.
Find the minimum number of people who like all these five channels.

a) 1500

b) 1000
c) 2500
d) 2000

Q30. DIRECTIONS *for questions 28 to 31:* Select the correct alternative from the given choices.
In a triangle ABC, the four points B, C, the orthocenter O and the incentre I are concyclic. If the four points are all distinct, find the measure of $\angle$ A.

a) 30°
b) 45°
c) **60°**
d) Cannot be determined

Q31. DIRECTIONS *for questions 28 to 31:* Select the correct alternative from the given choices.
If A, B, C and D are natural numbers such that AD + BD = CD, then which of the following is true?

a) D $\geq$ min (A, B, C)
b) D $\geq$ max (A, B, C)
c) D < min (A, B, C)
d) None of the above

Q32. DIRECTIONS *for question 32:* Type in your answer in the input box provided below the question.
A man rowing upstream in a river accidentally dropped his hat into the river. After travelling a distance of 3x, he noticed his loss and immediately turned back to retrieve his hat. He caught up with his hat after it had covered a distance of 2x. If the speed of the stream was k percent of the speed at which he rows in still water, find k.
Enter your answer value rounded off and accurate up to two decimal places.

DIRECTIONS *for questions 33 and 34:* Answer the questions on the basis of the information given below.
Set A is formed by selecting some of the numbers from the first 100 natural numbers such that the HCF of any two numbers in the set is the same.

Q33. DIRECTIONS *for questions 33 and 34:* Type in your answer in the input box provided below the question.
If every pair of numbers of set A has to be relatively prime and set A has the maximum number of elements possible, then in how ways can the set A be selected?

Q34. **DIRECTIONS** *for questions 33 and 34:* Type in your answer in the input box provided below the question.

If the HCF of any two numbers in set A is 3, what is the maximum number elements that set A can have?