CAT 2003 Re-test Question Paper

Common Admission Test · Indian Institutes of Management

Time Allowed: 2 Hours **150 Questions**

General Instructions

(i) This paper contains **150 questions** from **CAT 2003 Re-test**, held on **15 February 2004**. The original examination was a **paper-based test** with a **120-minute** duration.

(ii) The question groups appear in their original sequence: **Verbal Ability and Reading Comprehension** (50 questions); **Quantitative Ability** (50 questions); **Data Interpretation** (50 questions).

(iii) Each question has **four choices**. Select the single best answer, using the shared passage, table or diagram wherever indicated.

(iv) Read the directions for every question group carefully. Question numbers continue across the paper.

(v) Passages and questions may continue onto the following page. Read each question and all its choices before answering.

(vi) This is the **replacement test held on 15 February 2004** for the cancelled CAT 2003 sitting.

Questions 1 to 5

The invention of the gas turbine by Frank Whittle in England and Hans von Ohain in Germany in 1939 signalled the beginning of jet transport. Although the French engineer Lorin had visualized the concept of jet propulsion more than 25 years earlier, it took improved materials and the genius of Whittle and von Ohain to recognize the advantage that a gas turbine offered over a piston engine, including speeds in excess of 350 miles per hour. The progress from the first flights of liquid propellant rocket and jet-propelled aircraft in 1939 to the first faster-than-sound (supersonic) manned airplane (the Bell X-1) in 1947 happened in less than a decade. This then led very rapidly to a series of supersonic fighters and bombers, the first of which became operational in the 1950s. World War II technology foundations and emerging Cold War imperatives then led us into space with the launch of Sputnik in 1957 and the placing of the first man on the moon only 12 years later — a mere 24 years after the end of World War II.

Now a hypersonic flight can take you anywhere in the planet in less than four hours. British Royal Air Force and Royal Navy and the air forces of several other countries are going to use a single-engine cousin to the F/A-22, called the F-35 Joint Strike Fighter. These planes exhibit stealthy angles and coatings that make it difficult for radar to detect them, among aviation's most cutting-edge advances in design. The V-22, known as tilt-rotor, part helicopter, part airplane, takes off vertically, then tilts its engine forward for winged flight. It provides speed, three times the payload, five times the range of the helicopters it's meant to replace. The new fighter, F/A-22 Raptor, with more than a million parts, shows a perfect amalgamation of stealth, speed, avionics and agility.

It seems conventional forms, like the Predator and Global Hawk are passé, the stealthier unmanned aerial vehicles (UAVs) are in. They are shaped like kites, bats and boomerang, all but invisible to the enemy radar and able to remain over hostile territory without any fear of getting grilled if shot down. Will the UAVs take away pilots' jobs permanently? Can a computer-operated machine take a smarter and faster decision in a war-like situation? The new free-flight concept will probably supplement the existing air traffic control system by computers on each plane to map the altitude, route, weather and other planes; and a decade from now, there will be no use of radar any more.

How much bigger can the airplanes get? In the '50s they got speed, in the '80s they became stealthy. Now they are getting smarter thanks to computer automation. The change is quite huge: from the four-seater to the A380 airplane. It seems we are now trading speed for size as we build a new superjumbo jet, the 555 seater A380, which will fly at almost the same speed of the Boeing 707, introduced half a century ago, but with an improved capacity, range, greater fuel economy. A few years down the line will come the truly larger model, to be known as 747X. In the beginning of 2005, the A380, the world's first fully double-decked superjumbo passenger jet, weighing 1.2 million punds, may carry a load of about 840 passengers.

Barring the early phase, civil aviation has always lagged behind the military technologies (of jet engines, lightweight composite materials, etc.). There are two fundamental factors behind the decline in commercial aeronautics in comparison to military aeronautics. There is no collective vision of our future such as the one that drove us in the past. There is also a need for a more aggressive pool of airplane design talents to maintain an industry that continues to find a multibillion dollar-a-year market for its product.

Can the history of aviation technology tell us something about the future of aeronautics? Have we reached a final state in our evolution to a mature technology in aeronautics? Are the challenges of

coming out with the 'better, cheaper, faster' designs somehow inferior to those that are suited for 'faster, higher, further'? Safety should improve greatly as a result of the forthcoming improvements in airframes, engines, and avionics. Sixty years from now, aircraft will recover on their own if the pilot loses control. Satelites are the key not only to GPS (global positioning system) navigation but also to in-flight communications, uplinked weather, and even in-flight e-mail. Although there is some debate about what type of engines will power future airplanes — lightweight turbines, turbocharged diesels, or both — there is little debate about how these power plants will be controlled. Pilots of the future can look forward to more and better on-board safety equipment.

1. Why might radars not be used a decade from now?

(A) Stealth technology will advance so much that it is pointless to use radar to detect aircraft.

(B) UAVs can remain over hostile territory without any danger of being detected.

(C) Computers on board may enable aircraft to manage safe navigation on their own.

(D) It is not feasible to increase the range of radars.

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2. According to the author, commercial aeronautics, in contrast to military aeronautics, has declined because, among other things.

(A) Speed and technology barriers are more easily overcome in military aeronautics.

(B) The collective vision of the past continues to drive civil and commercial aeronautics.

(C) Though the industry has a huge market, it has not attracted the right kind of aircraft designers.

(D) There is a shortage of materials, like light weight composites, used in commercial aeronautics.

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3. According to the first paragraph of the passage, which of the following statements is NOT false?

(A) Frank Whittle and Hans von Ohain were the first to conceive of jet propulsion.

(B) Supersonic fighter planes were first used in World War II.

(C) No man had travelled faster than sound until the 1950s.

(D) The exploitation of jet propulsion for supersonic aviation has been remarkably fast.

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4. What is the fourth paragraph of the passage, starting, "How much bigger . . . ", about?

(A) Stealth, speed, avionics, and agility of new aircraft.

(B) The way aircraft size has been growing.

(C) Use of computer automation in aircraft.

(D) Super-jumbo jets that can take more than 500 passengers.

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5. What is the most noteworthy difference between V-22 and a standard airplane?

(A) It can take off vertically.

(B) It has winged flight.

(C) It has excellent payload.

(D) Its range is very high.

Questions 6 to 10

Pure love of learning, of course, was a less compelling motive for those who became educated for careers other than teaching. Students of law in particular had a reputation for being materialistic careerists in an age when law was becoming known as 'the lucrative science' and its successful practice

the best means for rapid advancement in the government of both church and state. Medicine too had its profit-making attractions. Those who did not go on to law or medicine could, if they had been well trained in the arts, gain positions at royal courts or rise in the clergy. Eloquent testimony to the profit motive behind much of 12th-century education was the lament of a student of Abelard around 1150: "Christians educate their sons . . . for gain, in order that the one brother, if he be a clerk, may help his father and mother and his other brothers, saying that a clerk will have no heir and whatever he has will be ours and the other brothers." With the opening of positions in law, government and the church, education became a means for advancement not only in income but also in status. Most who were educated were wealthy, but in the 12th century, more often than before, many were not and were able to rise through the ranks by means of their education. The most familiar examples are Thomas Becket, who rose from a humble background to become chancellor of England and then archbishop of Canterbury, and John of Salisbury, who was born a 'plebeian' but because of his reputation for learning died as bishop of Chartres.

The instances of Becket and John of Salisbury bring us to the most difficult question concerning 12th-century education: To what degree was it still a clerical preserve? Despite the fact that throughout the 12th century the clergy had a monopoly of instruction, one of the outstanding medievalists of our day, R. W. Southern, refers with good reason to the institutions staffed by the clergy as 'secular schools'. How can we make sense out of the paradox that 12th-century schools were clerical and yet 'secular'?

Let us look at the clerical side first. Not only were all 12th-century teachers except professionals and craftsmen in church order, but in northern Europe students in schools had clerical status and looked like priests. Not that all really were priests, but by virtue of being students all were awarded the legal privileges accorded to the clergy. Furthermore, the large majority of 12th-century students, outside of the possible exception of Italy, if not already priests became so after their studies were finished. For these reasons, the term 'cleric' was often used to denote a man who was literate and the term 'layman' one who was illiterate. The English word for cleric, clerk, continued for a long time to be a synonym for student or for a man who could write, while the French word clerc even today has the connotation of intellectual.

Despite all this, 12th-century education was taking on many secular qualities in its environment, goals, and curriculum. Student life obviously became more secular when it moved out from the monasteries into the bustling towns. Most students wandered from town to town in search not only of good masters but also of worldly excitement, and as the 12th century progressed they found the best of each in Paris. More important than environment was the fact that most students, even though they entered the clergy, had secular goals. Theology was recognized as the 'queen of the sciences', but very few went on to it. Instead they used their study of the liberal arts as a preparation for law, medicine, government service, or advancement in the ecclesiastical hierarchy.

This being so, the curriculum of the liberal arts became more sophisticated and more divorced from religion. Teaching was still almost exclusively in Latin, and the first book most often read was the Psalter, but further education was no longer similar to that of a choir school. In particular, the discipline of rhetoric was transformed from a linguistic study into instruction in how to compose letters and documents; there was a new stress on logic; and in all the liberal arts and philosophy texts more advanced than those known in the early Middle Ages were introduced.

Along with the rise of logic came the translation of Greek and Arabic philosophical and scientific works. Most important was the translation of almost all the writings of Aristotle, as well as his sophisticated Arabic commentators, which helped to bring about an intellectual revolution based on Greek rationalism. On a more prosaic level, contact with Arabs resulted in the introduction in the

12th century of the Arabic numeral system and the concept of zero. Though most westerners first resisted this and made crude jokes about the zero as an ambitious number 'that counts for nothing and yet wants to be counted', the system steadily made its inroads first in Italy and then throughout Europe, thereby vastly simplifying the arts of computation and record-keeping.

6. According to the passage, what led to the secularisation of the curriculum of the liberal arts in the 12th century?

(A) It was divorced from religion and its influences.

(B) Students used it mainly as a base for studying law and medicine.

(C) Teaching could no longer be conducted exclusively in Latin.

(D) Arabic was introduced into the curriculum.

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7. According to the author, in the 12th century, individuals were motivated to get higher education because it

(A) was a means for material advancement and higher status.

(B) gave people with wealth an opportunity to learn.

(C) offered a coveted place for those with a love of learning.

(D) directly added to the income levels of people.

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8. According to the passage, 12th-century schools were clerical and yet secular because

(A) many teacher were craftsmen and professionals who did not form part of the church.

(B) while the students had the legal privileges accorded to the clergy and looked like priests, not all were really priests.

(C) the term 'cleric' denoted a literate individual rather than a strict association with the church.

(D) though the clergy had a monopoly in education, the environment, objectives and curriculum in the schools were becoming secular.

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9. What does the sentence 'Christians educate their sons . . . will be ours and the other brothers' imply?

(A) The Christian family was a close-knit unit in the 12th century.

(B) Christians educated their sons not so much for the love of learning as for material gain.

(C) Christians believed very strongly in educating their sons in the Church.

(D) The relationship between Christian parents and their sons was exploitative in the 12th century.

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10. According to the passage, which of the following is the most noteworthy trend in education in 12th-century Europe?

(A) Secularization of education.

(B) Flowering of theology as the queen of the sciences.

(C) Wealthy people increasingly turning to education.

(D) Rise of the clergy's influence on the curriculum.

Questions 11 to 15

At first sight, it looks as though panchayati raj, the lower layer of federalism in our polity, is as firmly entrenched in our system as is the older and higher layer comprising the Union Government and the State. Like the democratic institutions at the higher level, those at the panchayat level, the panchayati raj institutions (PRIs), are written into and protected by the Constitution. All the essential features, which distinguish a unitary system from a federal one, are as much enshrined at the lower as at the upper level of our federal system. But look closely and you will discover a fatal flaw. The letter of the Constitution as well as the spirit of the present polity have exposed the intra-State level of our federal system to a dilemma of which the inter-State and Union-State layers are free. The flaw has many causes. But all of them are rooted in an historical anomaly, that while the dynamics of federalism and democracy have given added strength to the rights given to the States in the Constitution, they have worked against the rights of panchayats.

At both levels of our federal system there is the same tussle between those who have certain rights and those who try to encroach upon them if they believe they can. Thus, the Union Government was able to encroach upon certain rights given to the States by the Constitution. It got away with that because the single dominant party system, which characterised Centre-State relations for close upon two decades, gave the party in power at the Union level many extra-constitutional political levers. Second, the Supreme Court had not yet begun to extend the limits of its power. But all that has changed in recent times. The spurt given to a multi-party democracy by the overthrow of the Emergency in 1977 became a long-term trend later on because of the ways in which a vigorously democratic multi-party system works in a political society which is as assertively pluralistic as Indian society is. It gives political clout to all the various segments which constitute that society. Secondly, because of the linguistic reorganisation of States in the 1950s, many of the most assertive segments have found their most assertive expression as States. Thirdly, with single-party dominance becoming a thing of the past at the Union level, governments can be formed at that level only by multi-party coalitions in which State-level parties are major players. This has made it impossible for the Union Government to do much about anything unless it also carries a sufficient number of State-level parties with it. Indian federalism is now more real than it used to be, but an unfortunate side-effect is that India's panchayati raj system, inaugurated with such fanfare in the early 1980s, has become less real.

By the time the PRIs came on the scene, most of the political space in our federal system had been occupied by the Centre in the first 30 years of Independence, and most of what was still left after that was occupied by the States in the next 20. PRIs might have hoped to wrest some space from their immediate neighbour, the States, just as the States had wrested some from the Centre. But having at last managed to checkmate the Centre's encroachments on their rights, the States were not about to allow the PRIs to do some encroaching of their own.

By the 1980's and early 1990s, the only nationally left, the Congress, had gone deeper into a siege mentality. Finding itself surrounded by State-level parties, it had built walls against them in stead of winning them over. Next, the States retaliated by blocking Congress proposals for panchayati raj in Parliament, suspecting that the Centre would try to use panchayats to by-pass State Governments. The suspicion fed on the fact that the powers proposed by the Congress for panchayats were very similar to many of the more lucrative powers of State Governments. State-level leaders also feared, perhaps, that if panchayat-level leaders captured some of the larger PRIs, such as district-level panchayats, they would exert pressure on State-level leaders through intra-State multi-party federalism.

It soon became obvious to Congress leaders that there was no way the panchayati raj amendments they wanted to write into the Constitution would pass muster unless State-level parties were given

their pound of flesh. The amendments were allowed only after it was agreed that the powers of panchayats could be listed in the Constitution. Illustratively, they would be defined and endowed on PRIs by the State Legislature acting at its discretion.

This left the door wide open for the States to exert the power of the new political fact that while the Union and State Governments could afford to ignore panchayats as long as the MLAs were happy, the Union Government had to be sensitive to the demands of State-level parties. This has given State-level actors strong beachheads on the shores of both inter-State and intra-State federalism. By using various administrative devices and non-elected parallel structures, State Governments have subordinated their PRIs to the State administration and given the upper hand to State Government officials against the elected heads of PRIs. Panchayats have become local agencies for implementing schemes drawn up in distant State capitals. And their own volition has been further circumscribed by a plethora of 'Centrally-sponsored schemes'. These are drawn up by even more distant Central authorities but at the same time tie up local staff and resources on pain of the schemes being switched off in the absence of matching local contribution. The 'foreign aid' syndrome can be clearly seen at work behind this kind of 'grass roots development'.

11. The central theme of the passage can be best summarized as

(A) our grassroots development at the panchayat level is now driven by the 'foreign aid' syndrome.

(B) panchayati raj is firmly entrenched at the lower level of our federal system of governance.

(C) a truly federal polity has not developed since PRIs have not been allowed the necessary political space.

(D) the Union Government and State-level parties are engaged in a struggle for the protection of their respective.

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12. The sentence in the last paragraph, "And their own volition has been further circumscribed. . ." refers to

(A) the weakening of the local institutions' ability to plan according to their needs.

(B) the increasing demands made on elected local leaders to match central grants with local contributions.

(C) the empowering of the panchayat system as implementers of schemes from State capitals.

(D) the process by which the prescribed Central schemes are reformulated by local elected leaders.

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13. What is the 'dilemma' at the intra-State level mentioned in the first paragraph of the passage?

(A) Should the state governments wrest more space from the Union, before considering the panchayati system?

(B) Should the rights similar to those that the States managed to get be extended to panchayats as well?

(C) Should the single party system which has withered away be brought back at the level of the States?

(D) Should the States get 'their pound of flesh' before allowing the Union Government to pass any more laws?

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14. Which of the following most closely describes the 'fatal flaw' that the passage refers to?

(A) The ways in which the democratic multi-party system works in an assertively pluralistic society like India's are flawed.

(B) The mechanisms that our federal system uses at the Union Government level to deal with States are imperfect.

(C) The instruments that have ensured federalism at one level, have been used to achieve the opposite at another.

(D) The Indian Constitution and the spirit of the Indian polity are fatally flawed.

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15. Which of the following best captures the current state of Indian federalism as described in the passage?

(A) The Supreme Court has not begun to extend the limits of its power.

(B) The multi-party system has replaced the single party system.

(C) The Union, State and panchayati raj levels have become real.

(D) There is real distribution of power between the Union and State-level parties.

Questions 16 to 20

While I was in class at Columbia, struggling with the esoterica du jour, my father was on a bricklayer's scaffold not far up the street, working on a campus building. Once we met up on the subway going home — he was with his tools, I with my books. My father wasn't interested in Thucydides, and I wasn't up on arches. My dad has built lots of places in New York City he can't get into: colleges, condos, office towers. He made his living on the outside. Once the walls were up, a place took on a different feel for him, as though he wasn't welcome anymore. Related by blood, we're separated by class, my father and I. Being the white-collar child of a blue-collar parent means being the hinge on the door between two ways of life. With one foot in the working-class, the other in the middle class, people like me are Straddlers, at home in neither world, living a limbo life.

What drove me to leave what I knew? Born blue-collar, I still never felt completely at home among the tough guys and anti-intellectual crowd of my neighbourhood in deepest Brooklyn. I never did completely fit in among the preppies and suburban royalty of Columbia, either. It's like that for Straddlers. It was not so smooth jumping from Italian old-world style to US professional in a single generation. Others who were the first in their families to go to college, will tell you the same thing: the academy can render you unrecognisable to the very people who launched you into the world. The ideas and values absorbed in college challenge the mom-and pop orthodoxy that passed for truth for 18 years. Limbo folk may eschew polyester blends for sea-isle cotton, prefer Brie to Kraft slices. They marry outside the neighbourhood and raise their kids differently. They might not be in church on Sunday.

When they pick careers (not jobs), it's often a kind of work their parents never heard of or can't understand. But for the white-collar kids of blue-collar parents, the office is not necessarily a sanctuary. In Corporate America, where the rules are based on notions foreign to working-class people, a Straddler can get lost. Social class counts at the office, even though nobody likes to admit it. Ultimately, corporate norms are based on middle-class values, business types say. From an early age, middle-class people learn how to get along, using diplomacy, nuance, and politics to grab what they need. It is as though they are following a set of rules laid out in a manual that blue-collar families never have the chance to read.

People born into the middle class to parents with college degrees have lived lives filled with what French sociologist Pierre Bourdieu calls 'cultural capital'. Growing up in an educated environment, they learn about Picasso and Mozart, stock portfolios and crème brulee. In a home with cultural capital, there are networks: someone always has an aunt or golfing buddy with the inside track for an

internship or some entry-level job. Dinner-table talk could involve what happened that day to mom and dad at the law firm, the doctor's office, or the executive suite. Middle-class kids can grow up with a sense of entitlement that will carry them through their lives. This 'belongingness' is not just related to having material means, it also has to do with learning and possessing confidence in your place in the world. Such early access and direct exposure to culture in the home is the more organic, 'legitimate' means of appropriating cultural capital, Bourdieu tells us. Those of us possessing 'ill-gotten Culture' can learn it, but never as well. Something is always a little off about us, like an engine with imprecise timing. There's a greater match between middle-class lives and the institutions in which the middle class works and operates — universities or corporations. Children of the middle and upper classes have been speaking the language of the bosses and supervisors forever.

Blue-collar kids are taught by their parents and communities to work hard to achieve, and that merit is rewarded. But no blue-collar parent knows whether such things are true in the middle-class world. Many professionals born to the working-class report feeling out of place and out of place and outmanoeuvred in the office. Soon enough, Straddlers learn that straight talk won't always cut. Resolving conflicts head-on and speaking your mind doesn't always work, no matter how educated the Straddler is.

In the working-class, people perform jobs in which they are closely supervised and are required to follow orders and instructions. That, in turn, affects how they socialise their children. Children of the working-class are brought up in a home in which conformity, obedience and intolerance for back talk are the norm — the same characteristics that make a good factory worker.

16. According to the passage, which of the following statements about 'cultural capital' is NOT true?

(A) It socializes children early into the norms of middle class institutions.

(B) It helps them learn the language of universities and corporations.

(C) It creates a sense of enlightenment in middle-class children.

(D) It develops bright kids into Straddlers.

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17. According to the passage, the patterns of socialization of working-class children make them most suited for jobs that require

(A) diplomacy.

(B) compliance with orders.

(C) enterprise and initiative.

(D) high risk-taking.

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18. When Straddlers enter white collar jobs, they get lost because

(A) they are thrown into an alien value system.

(B) their families have not read the rules in corporate manuals.

(C) they have no one to guide them through the corporate maze.

(D) they miss the 'mom and pop orthodoxy'.

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19. What does the author's statement, "My father wasn't interested in Thucydides, and I wasn't up on arches," illustrate?

(A) Organic cultural capital

(B) Professional arrogance and social distance

(C) Evolving social transformation

(D) Breakdown of family relationships

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20. Which of the following statements about Straddlers does the passage NOT support explicitly?

(A) Their food preferences may not match those of their parents.

(B) They may not keep up some central religious practices of their parents.

(C) They are at home neither in the middle class nor in the working-class.

(D) Their political ideologies may differ from those of their parents.

Questions 21 to 25

The endless struggle between the flesh and the spirit found an end in Greek art. The Greek artists were unaware of it. They were spiritual materialists, never denying the importance of the body and ever seeing in the body a spiritual significance. Mysticism on the whole was alien to the Greeks, thinkers as they were. Thought and mysticism never go well together and there is little symbolism in Greek art. Athena was not a symbol of wisdom but an embodiment of it and her statues were beautiful grave women, whose seriousness might mark them as wise, but who were marked in no other way. The Apollo Belvedere is not a symbol of the sun, nor the Versailles Artemis of the moon. There could be nothing less akin to the ways of symbolism than their beautiful, normal humanity. Nor did decoration really interest the Greeks. In all their art they were preoccupied with what they wanted to express, not with ways of expressing it, and lovely expression, merely as lovely expression, did not appeal to them at all.

Greek art is intellectual art, the art of men who were clear and lucid thinkers, and it is therefore plain art. Artists than whom the world has never seen greater, men endowed with the spirit's best gift, found their natural method of expression in the simplicity and clarity which are the endowment of the unclouded reason. "Nothing in excess," the Greek axiom of art, is the dictum of men who would brush aside all obscuring, entangling superfluity, and see clearly, plainly, unadorned, what they wished to express. Structure belongs in an especial degree to the province of the mind in art, and architectonics were pre-eminently a mark of the Greek. The power that made a unified whole of the trilogy of a Greek tragedy, that envisioned the sure, precise, decisive scheme of the Greek statue, found its most conspicuous expression in Greek architecture. The Greek temple is the creation, par excellence, of mind and spirit in equilibrium.

A Hindoo temple is a conglomeration of adornment. The lines of the building are completely hidden by the decorations. Sculptured figures and ornaments crowd its surface, stand out from it in thick masses, break it up into a bewildering series of irregular tiers. It is not a unity but a collection, rich, confused. It looks like something not planned but built this way and that as the ornament required. The conviction underlying it can be perceived: each bit of the exquisitely wrought detail had a mystical meaning and the temple's exterior was important only as a means for the artist to inscribe thereon the symbols of the truth. It is decoration, not architecture.

Again, the gigantic temples of Egypt, those massive immensities of granite which look as if only the power that moves in the earthquake were mighty enough to bring them into existence, are something other than the creation of geometry balanced by beauty. The science and the spirit are there, but what is there most of all is force, unhuman force, calm but tremendous, overwhelming. It reduces to nothingness all that belongs to man. He is annihilated. The Egyptian architects were possessed by the consciousness of the awful, irresistible domination of the ways of nature; they had no thought to give to the insignificant atom that was man.

Greek architecture of the great age is the expression of men who were, first of all, intellectual artists, kept firmly within the visible world by their mind, but, only second to that, lovers of the human world. The Greek temple is the perfect expression of the pure intellect illumined by the spirit. No

other great buildings anywhere approach its simplicity. In the Parthenon straight columns rise to plain capitals; a pediment is sculptured in bold relief; there is nothing more. And yet — here is the Greek miracle — this absolute simplicity of structure is alone in majesty of beauty among all the temples and cathedrals and palaces of the world. Majestic but human, truly Greek. No superhuman force as in Egypt; no strange supernatural shapes as in India; the Parthenon is the home of humanity at ease, calm, ordered, sure of itself and the world. The Greeks flung a challenge to nature in the fullness of their joyous strength. They set their temples on the summit of a hill overlooking the wide sea, outlined against the circle of the sky. They would build what was more beautiful than hill and sea and sky and greater than all these. It matters not at all if the temple is large or small; one never thinks of the size. It matters not how much it is in ruins. A few white columns dominate the lofty height at Sunion as securely as the great mass of the Parthenon dominates all the sweep of sea and land around Athens. To the Greek architect man was the master of the world. His mind could understand its laws; his spirit could discover its beauty.

21. "The Greeks flung a challenge to nature in the fullness of their joyous strength." Which of the following best captures the 'challenge' that is being referred to?

(A) To build a monument matching the background colours of the sky and the sea.

(B) To build a monument bigger than nature's creations.

(C) To build monuments that were more appealing to the mind and spirit than nature's creations.

(D) To build a small but architecturally perfect monument.

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22. Which of the following is NOT a characteristic of Greek architecture, according to the passage?

(A) A lack of excess

(B) Simplicity of form

(C) Expression of intellect

(D) Mystic spirituality

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23. From the passage, which of the following combinations can be inferred to be correct?

(A) Hindoo temple — power of nature

(B) Parthenon — simplicity

(C) Egyptian temple — mysticism

(D) Greek temple — symbolism

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24. According to the passage, what conception of man can be inferred from Egyptian architecture?

(A) Man is the centre of creation.

(B) Egyptian temples save man from unhuman forces.

(C) Temples celebrate man's victory over nature.

(D) Man is inconsequential before the tremendous force of nature.

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25. According to the passage, which of the following best explains why there is little symbolism in Greek art?

(A) The Greeks focused on thought rather than mysticism.

(B) The struggle between the flesh and the spirit found an end in Greek art.

(C) Greek artists were spiritual materialists.

(D) Greek statues were embodiments rather than symbols of qualities.

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26. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. The wall does not simply divide Israel from a putative Palestinian state on the basis of the 1967 borders. B. A chilling omission from the road map is the gigantic 'separation wall' now being built in the West Bank by Israel. C. It is surrounded by trenches, electric wire and moats; there are watchtowers at regular intervals. D. It actually takes new tracts of Palestinian and, sometimes five or six kilometres at a stretch. E. Almost a decade after the end of South African apartheid this ghastly racist wall is going up with scarcely a peep from Israel's American allies who are going to pay for most of it.

(A) EBCAD
(B) BADCE
(C) AEDCB
(D) ECADB

---

27. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. Luckily the tide of battle moved elsewhere after the American victory at Midway and an Australian victory over Japan at Milne Bay. B. It could have been no more than a delaying tactic. C. The Australian military, knowing the position was hopeless, planned to fall back to the south-east in the hope of defending the main cities. D. They had captured most of the Solomon Islands and much of New Guinea, and seemed poised for an invasion. E. Not many people outside Australia realize how close the Japanese got.

(A) EDCBA
(B) ECDAB
(C) ADCBE
(D) CDBAE

---

28. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. Call it the third wave sweeping the Indian media. B. Now they are starring in a new role, as suave dealmakers who are in a hurry to strike alliances and agreements. C. Look around and you will find a host of deals that have been inked or are ready to be finalized. D. Then the media barons wrested back control from their editors, and turned marketing warriors with the brand as their missile. E. The first came with those magnificent men in their mahogany chambers who took on the world with their mighty fountain pens.

(A) ACBED
(B) CEBDA
(C) CAEBD
(D) AEDBC

---

29. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. The celebrations of economic recovery in Washington may be as premature as that 'Mission Accomplished' banner hung on the USS Abraham Lincoln to hail the end of the Iraq war. B. Meanwhile, in the real world, the struggles of families and communities continue unabated. C. Washington responded to the favourable turn in economic news with enthusiasm. D. The celebrations and high-fives up and down Pennsylvania Avenue are not to be found beyond the Beltway. E. When the third quarter GDP showed growth of 7.2% and the monthly unemployment rate dipped to six per cent euphoria gripped the US capital.

(A) ACEDB
(B) CEDAB
(C) ECABD
(D) ECBDA

---

30. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. To much of the Labour movement, it symbolises the brutality of the upper classes. B. And to everybody watching, the current mess over foxhunting symbolises the government's weakness. C. To fox-hunting's supporters, Labour's 1991 manifesto commitment to ban it symbolises the party's metropolitan roots and hostility to the countryside. D. Small issues sometimes have large symbolic power. E. To those

who enjoy thundering across the countryside in red coats after foxes, foxhunting symbolises the ancient roots of rural lives.

(A) DEACB
(B) ECDBA
(C) CEADB
(D) DBAEC

31. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. In the case of King Merolchazzar's courtship of the Princess of the Outer Isles, there occurs a regrettable hitch. B. She acknowledges the gifts, but no word of a meeting date follows. C. The monarch, hearing good reports of a neighbouring princess, dispatches messengers with gifts to her court, beseeching an interview. D. The princess names a date, and a formal meeting takes place; after that everything buzzes along pretty smoothly. E. Royal love affairs in olden days were conducted on the correspondence method.

(A) ACBDE
(B) ABCDE
(C) ECDAB
(D) ECBAD

32. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. Who can trace to its first beginnings the love of Damon for Pythias, of David for Jonathan, of Swan for Edgar? B. Similarly with men. C. There is about great friendships between man and man a certain inevitability that can only be compared with the age-old association of ham and eggs. D. One simply feels that it is one of the things that must be so. E. No one can say what was the mutual magnetism that brought the deathless partnership of these wholesome and palatable foodstuffs about.

(A) ACBED
(B) CEDBA
(C) ACEBD
(D) CEABD

33. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. A. Events intervened, and in the late 1930s and 1940s, Germany suffered from 'overbranding'. B. The British used to be fascinated by the home of Romanticism. C. But reunification and the federal government's move to Berlin have prompted Germany to think again about its image. D. The first foreign package holiday was a tour of Germany organized by Thomas Cook in 1855. E. Since then Germany has been understandably nervous about promoting itself abroad.

(A) ACEBD
(B) DECAB
(C) BDAEC
(D) DBAEC

34. Choose the option that best captures the essence of the text. It is important for shipping companies to be clear about the objectives for maintenance and materials management — as to whether the primary focus is on service level improvement or cost minimization. Often when certain systems are set in place, the cost minimization objective and associated procedure become more important than the flexibility required for service level improvement. The problem really arises since cost minimization tends to focus on out of pocket costs which are visible, while the opportunity costs, often greater in value, are lost sight of.

(A) Shipping companies have to either minimize costs or maximize service quality. If they focus on cost minimization, they will reduce quality. They should focus on service level improvement, or else opportunity costs will be lost sight of.

(B) Shipping companies should determine the primary focus of their maintenance and materials management. Focus on cost minimization may reduce visible costs, but ignore greater invisible costs and impair service quality.

(C) Any cost minimization programme in shipping is bound to lower the quality of service. Therefore, shipping companies must be clear about the primary focus of their maintenance and materials management before embarking on cost minimization.

(D) Shipping companies should focus on quality level improvement rather than cost cutting. Cost cutting will lead to untold opportunity costs. Companies should have systems in place to make the service level flexible.

---

35. Choose the option that best captures the essence of the text. Try before you buy. We use this memorable saying to urge you to experience the consequences of an alternative before you choose it, whenever this is feasible. If you are considering buying a van after having always owned sedans, rent one for a week or borrow a friend's. By experiencing the consequences first hand, they become more meaningful. In addition, you are likely to identify consequences you had not even thought of before. May be you will discover that it is difficult to park the van in your small parking space at work, but that, on the other hand, your elderly father has a much easier time getting in and out of it.

(A) If you are planning to buy a van after being used to sedans, borrow a van or rent it and try it before deciding to buy it. Then you may realize that parking a van is difficult while it is easier for your elderly father to get in and out of it.

(B) Before choosing an alternative, experience its consequences if feasible. If, for example, you want to change from sedans to a van, try one before buying it. You will discover aspects you may never have thought of.

(C) Always try before you buy anything. You are bound to discover many consequences. One of the consequences of going in for a van is that it is more difficult to park than sedans at the office car park.

(D) We urge you to try products such as vans before buying them. Then you can experience consequences you have not thought of such as parking problems. But your father may find vans more comfortable than cars.

---

36. Choose the option that best captures the essence of the text. Physically, inertia is a feeling that you just can't move; mentally, it is a sluggish mind. Even if you try to be sensitive, if your mind is sluggish, you just don't feel anything intensely. You may even see a tragedy enacted in front of your eyes and not be able to respond meaningfully. You may see one person exploiting another, one group persecuting another, and not be able to get angry. Your energy is frozen. You are not deliberately refusing to act; you just don't have the capacity.

(A) Inertia makes your body and mind sluggish. They become insensitive to tragedies, exploitation, and persecution because it freezes your energy and decapacitates it.

(B) When you have inertia you don't act although you see one person exploiting another or one group persecuting another. You don't get angry because you are incapable.

(C) Inertia is of two types — physical and mental. Physical inertia restricts bodily movements. Mental inertia prevents mental response to events enacted in front of your eyes.

(D) Physical inertia stops your body from moving; mental inertia freezes your energy, and stops your mind from responding meaningfully to events, even tragedies, in front of you.

---

37. Choose the option that best captures the essence of the text. Some decisions will be fairly obvious — 'no-brainers'. Your bank account is low, but you have a two-week vacation coming up and you want to get away to some place warm to relax with your family. Will you accept your in-laws' offer of free use of their Florida beachfront condo? Sure. You like your employer and feel ready to move forward in your career.

Will you step in for your boss for three weeks while she attends a professional development course? Of course.

(A) Some decisions are obvious under certain circumstances. You may, for example, readily accept a relative's offer of free holiday accommodation. Or step in for your boss when she is away.

(B) Some decisions are no-brainers. You need not think when making them. Examples are condo offers from in-law and job offers from bosses when your bank account is low or boss is away.

(C) Easy decisions are called 'no-brainers' because they do not require any cerebral activity. Examples such as accepting free holiday accommodation abound in our lives.

(D) Accepting an offer from in-laws when you are short on funds and want a holiday is a no-brainer. Another no-brainer is taking the boss's job when she is away.

---

38. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE. "Help"

(A) This syrup will help you cold.

(B) I can't help the colour of my skin.

(C) Ranjit may help himself with the beer in the fridge.

(D) Do you really expect me to help you out with cash.

---

39. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE. "Paper"

(A) Your suggestions look great on the paper, but are absolutely impractical.

(B) Do you know how many trees are killed to make a truckload of paper?

(C) So far I have been able to paper over the disagreements among my brothers.

(D) Dr. Malek will read a paper on criminalization of politics.

---

40. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE. "Service"

(A) Customers have to service themselves at this canteen.

(B) It's a service lift; don't get into it.

(C) I'm not making enough even to service the loan.

(D) Jyoti's husband has been on active service for three months.

---

41. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE. "Reason"

(A) Your stand is beyond all reason.

(B) Has she given you any reason for her resignation?

(C) There is little reason in your pompous advice.

(D) How do you deal with a friend who doesn't listen to a reason?

---

42. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE. "Business"

(A) I want to do an MBA before going into business.

(B) My wife runs profitable business in this suburb.

(C) If we advertise we will get twice as much business as we have now.

(D) How you spend your money is as much my business as yours.

---

43. Fill in the Blanks: The best punctuation is that of which the reader is least conscious; for when punctuation, or lack of it, ___ itself, it is usually because it ___.

(A) obtrudes ... offends
(B) enjoins ... fails
(C) conceals ... recedes
(D) effaces ... counts

---

44. Fill in the Blanks: The argument that the need for a looser fiscal policy to ____ demand outweighs the need to ___ budget deficits is persuasive.

(A) assess ... minimize
(B) outstrip ... eliminate
(C) stimulate ... control
(D) restrain ... conceal

---

45. Fill in the Blanks: The Athenians on the whole were peaceful and prosperous; they had ___ to sit at home and think about the universe and dispute with Socrates, or to travel abroad and ___ the world.

(A) leisure ... explore
(B) time ... ignore
(C) ability ... suffer
(D) temerity ... understand

---

46. Fill in the Blanks: Their achievement in the field of literature is described as ___; sometimes it is even called ___.

(A) magnificent ... irresponsible
(B) insignificant ... influential
(C) significant ... paltry
(D) unimportant ... trivial

---

47. Fill in the Blanks: From the time she had put her hair up, every man she had met had grovelled before her and she had acquired a mental attitude toward the other sex which was a blend of ___ and ___.

(A) admiration ... tolerance
(B) indifference ... contempt
(C) impertinence ... temperance
(D) arrogance ... fidelity

---

48. Fill in the Blanks: This simplified ___ to the decision-making process is a must read for anyone ___ important real estate, personal, or professional decisions.

(A) primer ... maximizing
(B) tract ... enacting
(C) introduction ... under
(D) guide ... facing

---

49. Fill in the Blanks: Physicians may soon have ___ to help paralysed people move their limbs by bypassing the ___ nerves that once controlled their muscles.

(A) instruments ... detrimental
(B) ways ... damaged
(C) reason ... involuntary
(D) impediments ... complex

---

50. Fill in the Blanks: The Internet is a medium where users have nearly ___ choices and ___ constraints about where to go and what to do. _x0001__x0002__x0003__x0004__x0005__x0006__x0007__x0008__x0008_

(A) unbalanced ... non-existent
(B) embarrassing ... no
(C) unlimited ... minimal
(D) choking ... shockinge

Questions 51 to 53

Directions for questions 51 to 53: Answer the questions on the basis of the information given below.

The seven basic symbols in a certain numeral system and their respective values are as follows:

I = 1, V = 5, X = 10, L = 50, C = 100, D = 500 and M = 1000

In general, the symbols in the numeral system are read from left to right, starting with the symbol representing the largest value; the same symbol cannot occur continuously more than three times; the value of the numeral is the sum of the values of the symbols. For example, XXVII = 10 + 10 + 5 + 1 + 1 = 27. An exception to the left-to-right reading occurs when a symbol is followed immediately by a symbol of greater value; then the smaller value is subtracted from the larger. For example, XLVI = (50 – 10) + 5 + 1 = 46.

51. The value of the numeral MDCCLXXXVII is

(A) 1687
(B) 1787
(C) 1887
(D) 1987

52. The value of the numeral MCMXCIX is

(A) 1999
(B) 1899
(C) 1989
(D) 1889

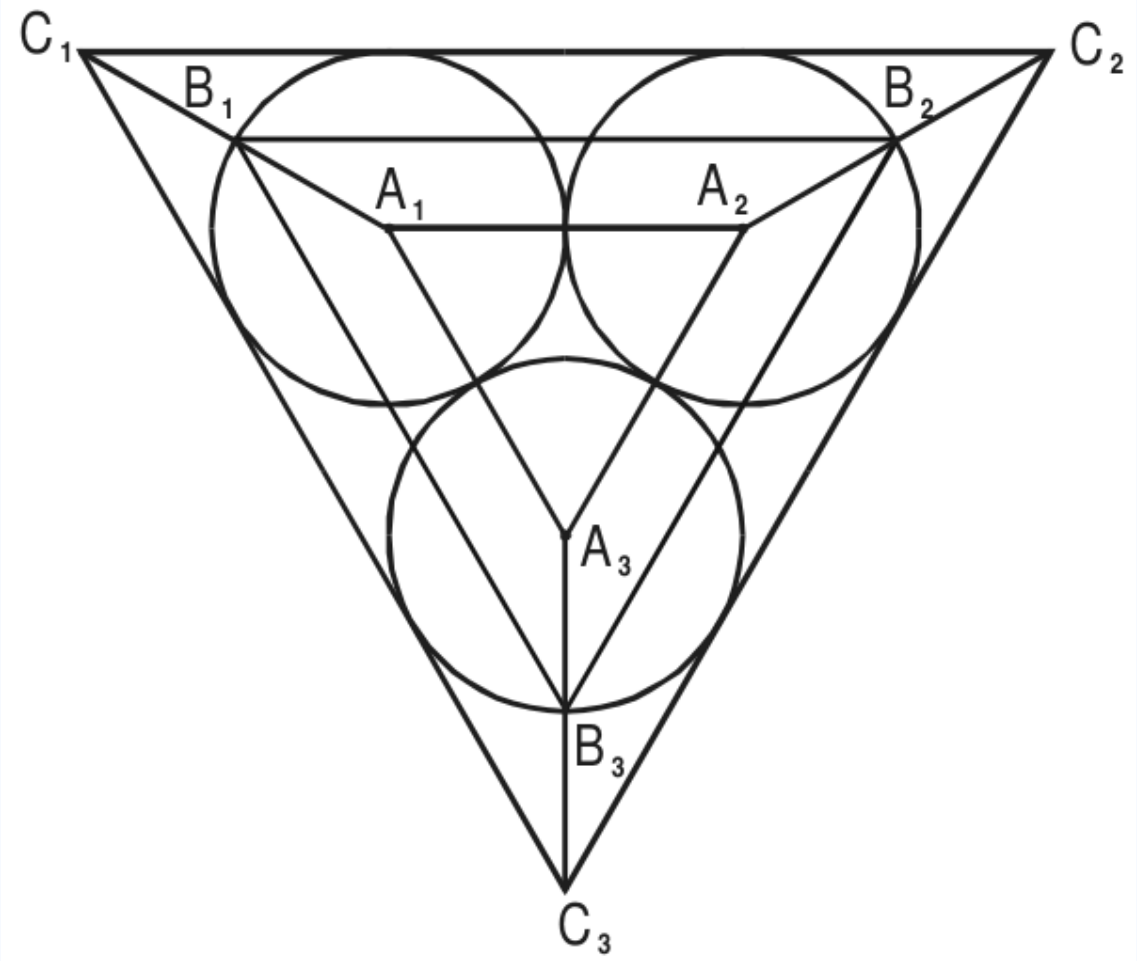
53. Which of the following represent the numeral for 1995? I. MCMLXXV II. MCMXCV III. MVD IV. MVM

(A) Only I and II
(B) Only III and IV
(C) Only II and IV
(D) Only IV

Questions 54 to 56

Directions for questions 54 to 56: Answer the questions on the basis of the information given below.

Consider three circular parks of equal size with centres at A_1, A_2, and A_3 respectively. The parks touch each other at the edge as shown in the figure (not drawn to scale). There are three paths formed by the triangles $A_1A_2A_3$, $B_1B_2B_3$, and $C_1C_2C_3$, as shown. Three sprinters A, B and C begin running from points A_1, B_1 and C_1 respectively. Each sprinter traverses her respective triangular path clockwise and returns to her starting point.



54. Let the radius of each circular park be r, and the distances to be traversed by the sprinters A, B and C be a, b and c respectively. Which of the following is true?

(A) $b - a = c - b = 3\sqrt{3}\,r$

(B) $b - a = c - b = \sqrt{3}\,r$

(C) $b = \dfrac{a + c}{2} = 2(1 + \sqrt{3})\,r$

(D) $c = 2b - a = (2 + \sqrt{3})\,r$

---

55. Sprinter A traverses distances A_1A_2, A_2A_3, and A_3A_1 at average speeds of 20, 30 and 15 respectively. B traverses her entire path at a uniform speed of $(10\sqrt{3} + 20)$. C traverses distances C_1C_2, C_2C_3 and C_3C_1 at average speeds of $\frac{40}{3}(\sqrt{3} + 1)$, $\frac{40}{3}(\sqrt{3} + 1)$ and 120 respectively. All speeds are in the same unit.
Where would B and C respectively be when A finishes her sprint?

(A) B_1, C_1

(B) B_2, C_3

(C) B_1, C_3

(D) B_1, Somewhere between C_3 and C_1

---

56. Sprinters A, B and C traverse their respective paths at uniform speeds of u, v and w respectively. It is known that u^2:v^2:w^2 is equal to Area A : Area B : Area C, where Area A, Area B and Area C are the areas of triangles $A_1A_2A_3$, $B_1B_2B_3$ and $C_1C_2C_3$ respectively. Where would A and C be when B reaches point B_3?

(A) A_2, C_3

(B) A_3, C_3

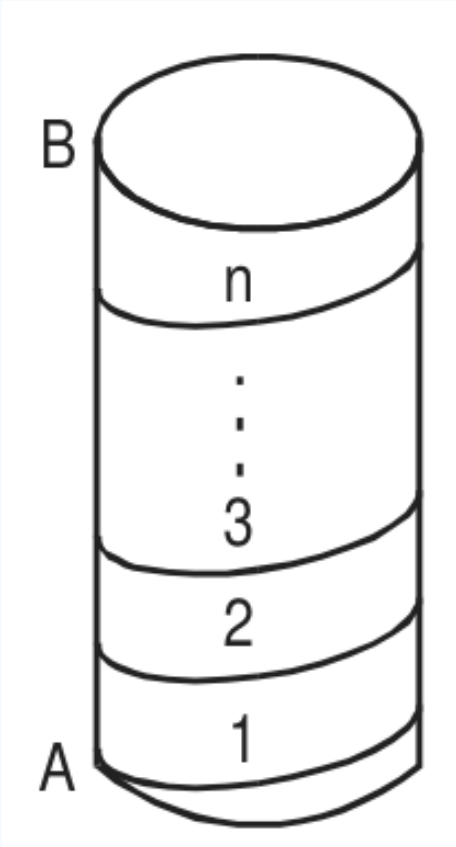
(C) A_3, C_2

(D) Somewhere between A_2 and A_3, Somewhere between C_3 and C_1

Questions 57 to 59

Directions for questions 57 to 59: Answer the questions on the basis of the information given below.

Consider a cylinder of height h cm and radius $r = \frac{2}{\pi}$ cm as shown in the figure (not drawn to scale). A string of a certain length, when wound on its cylindrical surface, starting at point A and ending at point B, gives a maximum of n turns (in other words, the string's length is the minimum length required to wind n turns).



57. What is the vertical spacing between the two consecutive turns?

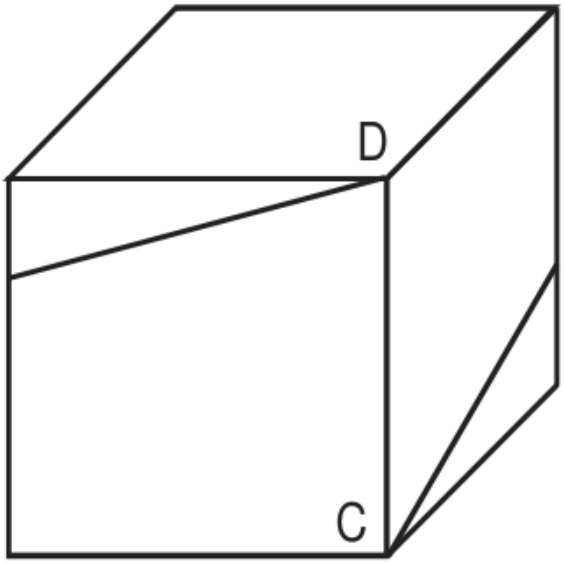
(A) $\frac{h}{n}$ cm

(B) $\frac{h}{\sqrt{n}}$ cm

(C) $\frac{h}{n^2}$ cm

(D) Cannot be determined

58. The same string, when wound on the exterior four walls of a cube of side n cm, starting at point C and ending at point D, can give exactly one turn (see figure, not drawn to scale). The length of the string is



(A) $\sqrt{2}\,n$ cm

(B) $\sqrt{17}\,n$ cm

(C) n cm

(D) $\sqrt{13}\,n$ cm

---

59. In the set-up of the previous two questions, how is h related to n?

(A) $h = \sqrt{2}\,n$

(B) $h = \sqrt{17}\,n$

(C) $h = n$

(D) $h = \sqrt{13}\,n$

---

60. There are 12 towns grouped into four zones with three towns per zone. It is intended to connect the towns with telephone lines such that every two towns are connected with three direct lines if they belong to the same zone, and with only one direct line otherwise. How many direct telephone lines are required?

(A) 72

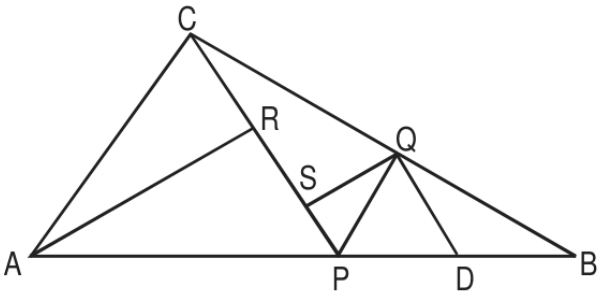
(B) 90

(C) 96

(D) 144

---

61. In the figure (not drawn to scale) given below, P is a point on AB such that AP : PB = 4 : 3. PQ is parallel to AC and QD is parallel to CP. In ΔARC, $\angle ARC = 90°$, and in ΔPQS, $\angle PSQ = 90°$. The length of QS is 6 cm. What is the ratio AP : PD?



(A) 10 : 3

(B) 2 : 1

(C) 7 : 3

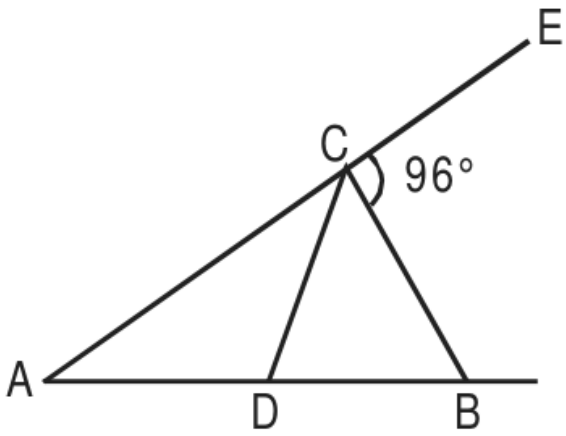
(D) 8 : 3

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62. A car is being driven, in a straight line and at a uniform speed, towards the base of a vertical tower. The top of the tower is observed from the car and, in the process, it takes 10 min for the angle of elevation to change from 45° to 60°. After how much more time will this car reach the base of the tower?

(A) $5(\sqrt{3}+1)$
(B) $6(\sqrt{3}+\sqrt{2})$
(C) $7(\sqrt{3}-1)$
(D) $8(\sqrt{3}-2)$

63. In the figure (not drawn to scale) given below, if AD = CD = BC and ∠BCE = 96°, how much is the value of ∠DBC?



(A) 32°
(B) 84°
(C) 64°
(D) Cannot be determined

64. If both a and b belong to the set {1, 2, 3, 4}, then the number of equations of the form $ax^2+bx+1=0$ having real roots is

(A) 10
(B) 7
(C) 6
(D) 12

65. If $\log_{10} x - \log_{10}\sqrt{x} = 2\log_x 10$, then the possible value of x is given by

(A) 10
(B) $\frac{1}{100}$
(C) $\frac{1}{1000}$
(D) None of these

66. What is the sum of all two-digit numbers that give a remainder of 3 when they are divided by 7?

(A) 666
(B) 676
(C) 683
(D) 777

67. An intelligence agency forms a code of two distinct digits selected from 0, 1, 2, ..., 9 such that the first digit of the code is non-zero. The code, handwritten on a slip, can however potentially create confusion when read upside down — for example, the code 91 may appear as 16. How many codes are there for which no such confusion can arise?

(A) 80
(B) 78
(C) 71
(D) 69

68. Consider two different cloth-cutting processes. In the first one, n circular cloth pieces are cut from a square cloth piece of side a in the following steps: the original square of side a is divided into n smaller squares, not necessarily of the same size, then a circle of maximum possible area is cut from each of the smaller squares. In the second process, only one circle of maximum possible area is cut from the square of side a and the process ends there. The cloth pieces remaining after cutting the circles are scrapped in both the processes. The ratio of the total area of scrap cloth generated in the former to that in the latter is

(A) $1 : 1$

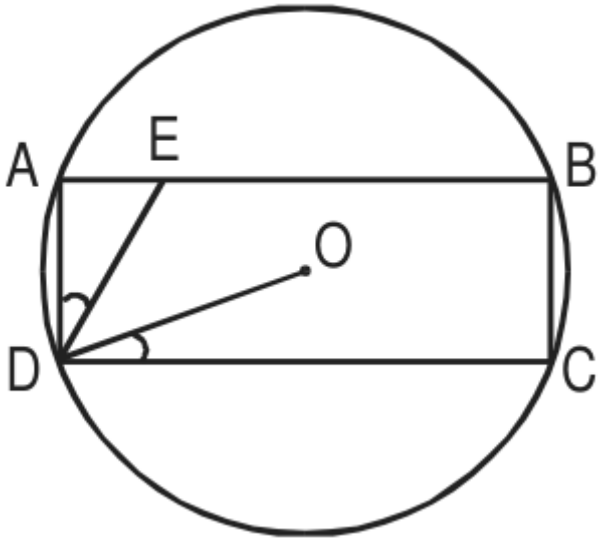
(B) $\sqrt{2} : 1$

(C) $\dfrac{n(4-\pi)}{4n-\pi}$

(D) $\dfrac{4n-\pi}{n(4-\pi)}$

---

69. In the figure below (not drawn to scale), rectangle ABCD is inscribed in the circle with centre at O. The length of side AB is greater than side BC. The ratio of the area of the circle to the area of the rectangle ABCD is $\pi : \sqrt{3}$. The line segment DE intersects AB at E such that $\angle ODC = \angle ADE$. The ratio AE : AD is



(A) $1 : \sqrt{3}$

(B) $1 : \sqrt{2}$

(C) $1 : 2\sqrt{3}$

(D) $1 : 2$

---

70. If $\frac{1}{3}\log_3 M + 3\log_3 N = 1 + \log_{0.008} 5$, then

(A) $M^9 = \dfrac{9}{N}$

(B) $N^9 = \dfrac{9}{M}$

(C) $M^3 = \dfrac{3}{N}$

(D) $N^9 = \dfrac{3}{M}$

---

71. Using only 2, 5, 10, 25, and 50 paisa coins, what will be the minimum number of coins required to pay exactly 78 paise, 69 paise and Rs. 1.01 to three different persons?

(A) 19

(B) 20

(C) 17

(D) 18

---

72. The length of the circumference of a circle equals the perimeter of a triangle of equal sides, and also the perimeter of a square. The areas covered by the circle, triangle, and square are c, t and s, respectively. Then,

(A) s > t > c
(B) c > t > s
(C) c > s > t
(D) s > c > t

73. What is the remainder when 4^{96} is divided by 6?

(A) 0
(B) 2
(C) 3
(D) 4

74. If x and y are integers, then the equation 5x + 19y = 64 has

(A) no solution for x < 300 and y < 0
(B) no solution for x > 250 and y > –100
(C) a solution for 250 < x < 300
(D) a solution for –59 < y < –56

75. What is the sum of 'n' terms in the series $\log m + \log\left(\frac{m^2}{n}\right) + \log\left(\frac{m^3}{n^2}\right) + \log\left(\frac{m^4}{n^3}\right) + \cdots$?

(A) $\log\left[\frac{n^{(n-1)}}{m^{(n+1)}}\right]^{\frac{n}{2}}$
(B) $\log\left[\frac{m^m}{n^n}\right]^{\frac{n}{2}}$
(C) $\log\left[\frac{m^{(1-n)}}{n^{(1-m)}}\right]^{\frac{n}{2}}$
(D) $\log\left[\frac{m^{(n+1)}}{n^{(n-1)}}\right]^{\frac{n}{2}}$

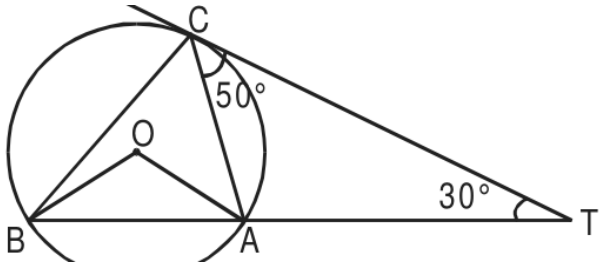
76. Let S_1 be a square of side a. Another square S_2 is formed by joining the mid-points of the sides of S_1. The same process is applied to S_2 to form yet another square S_3, and so on. If A_1, A_2, A_3, ... be the areas and P_1, P_2, P_3, ... be the perimeters of S_1, S_2, S_3, ..., respectively, then the ratio $\frac{P_1 + P_2 + P_3 + \cdots}{A_1 + A_2 + A_3 + \cdots}$ equals

(A) $\frac{2(1+\sqrt{2})}{a}$
(B) $\frac{2(2-\sqrt{2})}{a}$
(C) $\frac{2(2+\sqrt{2})}{a}$
(D) $\frac{2(1+2\sqrt{2})}{a}$

77. If three positive real numbers x, y and z satisfy y – x = z – y and xyz = 4, then what is the minimum possible value of y?

(A) $2^{1/3}$
(B) $2^{2/3}$
(C) $2^{1/4}$
(D) $2^{3/4}$

78. In the figure given below (not drawn to scale), A, B and C are three points on a circle with centre O. The chord BA is extended to a point T such that CT becomes a tangent to the circle at point C. If ∠ATC = 30° and ∠ACT = 50°, then the angle ∠BOA is



(A) 100°
(B) 150°
(C) 80°
(D) not possible to determine

79. The infinite sum $1 + \frac{4}{7} + \frac{9}{7^2} + \frac{16}{7^3} + \frac{25}{7^4} + \cdots$ equals

(A) $\frac{27}{14}$
(B) $\frac{21}{13}$
(C) $\frac{49}{27}$
(D) $\frac{256}{147}$

80. Consider the sets $T_n = \{n, n+1, n+2, n+3, n+4\}$, where n = 1, 2, 3, …, 96. How many of these sets contain 6 or any integral multiple thereof (i.e. any one of the numbers 6, 12, 18, …)?

(A) 80
(B) 81
(C) 82
(D) 83

81. Let ABCDEF be a regular hexagon. What is the ratio of the area of the ΔACE to that of the hexagon ABCDEF?

(A) $\frac{1}{3}$
(B) $\frac{1}{2}$
(C) $\frac{2}{3}$
(D) $\frac{5}{6}$

82. The number of roots common between the two equations $x^3 + 3x^2 + 4x + 5 = 0$ and $x^3 + 2x^2 + 7x + 3 = 0$ is

(A) 0
(B) 1
(C) 2
(D) 3

83. A real number x satisfying $1 - \frac{1}{n} < x \leq 3 + \frac{1}{n}$, for every positive integer n, is best described by

(A) $1 < x < 4$
(B) $1 < x \leq 3$
(C) $0 < x \leq 4$
(D) $1 \leq x \leq 3$

84. If n is such that $36 \leq n \leq 72$, then $x = \frac{n^2 + 2\sqrt{n}(n+4) + 16}{n + 4\sqrt{n} + 4}$ satisfies

(A) $20 < x < 54$
(B) $23 < x < 58$
(C) $25 < x < 64$
(D) $28 < x < 60$

85. If $13x + 1 < 2z$ and $z + 3 = 5y^2$, then

(A) x is necessarily less than y
(B) x is necessarily greater than y
(C) x is necessarily equal to y
(D) None of the above is necessarily true

86. Let n (>1) be a composite integer such that $\sqrt{n}$ is not an integer. Consider the following statements: A: n has a perfect integer-valued divisor which is greater than 1 and less than $\sqrt{n}$ B: n has a perfect integer-valued divisor which is greater than $\sqrt{n}$ but less than n

(A) Both A and B are false
(B) A is true but B is false

(C) A is false but B is true

(D) Both A and B are true

---

87. If $|b| \geq 1$ and $x = -|a|\, b$, then which one of the following is necessarily true?

(A) a – xb < 0

(B) a – xb ≥ 0

(C) a – xb > 0

(D) a – xb ≤ 0

---

88. A piece of paper is in the shape of a right-angled triangle and is cut along a line that is parallel to the hypotenuse, leaving a smaller triangle. There was 35% reduction in the length of the hypotenuse of the triangle. If the area of the original triangle was 34 square inches before the cut, what is the area (in square inches) of the smaller triangle?

(A) 16.665

(B) 16.565

(C) 15.465

(D) 14.365

---

89. Two straight roads R1 and R2 diverge from a point A at an angle of 120°. Ram starts walking from point A along R1 at a uniform speed of 3 km/hr. Shyam starts walking at the same time from A along R2 at a uniform speed of 2 km/hr. They continue walking for 4 hr along their respective roads and reach points B and C on R1 and R2 respectively. There is a straight line path connecting B and C. Then Ram returns to point A after walking along line segments BC and CA. Shyam also returns to A after walking along line segments BC and CA. Their speeds remains unchanged. The time interval (in hours) between Ram's and Shyam's return to the point A is

(A) $\frac{10\sqrt{19}+26}{3}$

(B) $\frac{2\sqrt{19}+10}{3}$

(C) $\frac{\sqrt{19}+26}{3}$

(D) $\frac{\sqrt{19}+10}{3}$

---

90. A square tin sheet of side 12 inches is converted into a box with open top in the following steps. The sheet is placed horizontally. Then, equal-sized squares, each of side x inches, are cut from the four corners of the sheet. Finally, the four resulting sides are bent vertically upwards in the shape of a box. If x is an integer, then what value of x maximizes the volume of the box?

(A) 3

(B) 4

(C) 1

(D) 2

---

91. If a, a + 2 and a + 4 are prime numbers, then the number of possible solutions for a is

(A) one

(B) two

(C) three

(D) more than three

---

92. Let a, b, c, d and e be integers such that a = 6b = 12c, and 2b = 9d = 12e. Then which of the following pairs contains a number that is not an integer?

(A) $\left(\frac{a}{27}, \frac{b}{e}\right)$

(B) $\left(\frac{a}{36}, \frac{c}{e}\right)$

(C) $\left(\frac{a}{12}, \frac{bd}{18}\right)$

(D) $\left(\frac{a}{6}, \frac{c}{d}\right)$

---

93. In a coastal village, every year floods destroy exactly half of the huts. After the flood water recedes, twice the number of huts destroyed are rebuilt. The floods occurred consecutively in the last three years

— 2001, 2002 and 2003. If floods are expected again in 2004, the number of huts expected to be destroyed is

(A) less than the number of huts existing at the beginning of 2001

(B) less than the total number of huts destroyed by floods in 2001 and 2003

(C) less than the total number of huts destroyed by floods in 2002 and 2003

(D) more than the total number of huts built in 2001 and 2002

Questions 94 to 96

Directions for questions 94 to 96: Answer the questions on the basis of the tables given below.

Two binary operations $\oplus$ and $*$ are defined over the set {a, e, f, g, h} as per the following tables:

$\oplus$	a	e	f	g	h
a	a	e	f	g	h
e	e	f	g	h	a
f	f	g	h	a	e
g	g	h	a	e	f
h	h	a	e	f	g

*	a	e	f	g	h
a	a	a	a	a	a
e	a	e	f	g	h
f	a	f	h	e	g
g	a	g	e	h	f
h	a	h	g	f	e

Thus, according to the first table $f \oplus g = a$, while according to the second table $g * h = f$, and so on. Also, let $f^2 = f * f$, $g^3 = g * g * g$, and so on.

94. What is the smallest positive integer n such that $g^n = e$?

(A) 4 (B) 5

(C) 2 (D) 3

95. Upon simplification, $f \oplus [f * \{f \oplus (f * f)\}]$ equals

(A) e (B) f

(C) g (D) h

96. Upon simplification, $\{a^{10} * (f^{10} \oplus g^9)\} \oplus e^8$ equals

(A) e (B) f

(C) g (D) h

Questions 97 to 98

Directions for questions 97 and 98: Answer the questions on the basis of the information given below.

A string of three English letters is formed as per the following rules:

I. The first letter is any vowel.

II. The second letter is m, n or p.

III. If the second letter is m, then the third letter is any vowel which is different from the first letter.

IV. If the second letter is n, then the third letter is e or u.

V. If the second letter is p, then the third letter is the same as the first letter.

97. How many strings of letters can possibly be formed using the above rules?

(A) 40
(B) 45
(C) 30
(D) 35

---

98. How many strings of letters can possibly be formed using the above rules such that the third letter of the string is e?

(A) 8
(B) 9
(C) 10
(D) 11

---

99. Let x and y be positive integers such that x is prime and y is composite. Then,

(A) y – x cannot be an even integer
(B) xy cannot be an even integer
(C) $\frac{(x+y)}{x}$ cannot be an even integer
(D) None of these

---

100. A survey on a sample of 25 new cars being sold at a local auto dealer was conducted to see which of the three popular options — air conditioning, radio and power windows were already installed. Following were the observation of the survey: I. 15 had air conditioning II. 2 had air conditioning and power windows but no radios III. 12 had radio IV. 6 had air conditioning and radio but no power windows V. 11 had power windows VI. 4 had radio and power windows VII. 3 had all three options What is the number of cars that had none of the options?

(A) 4
(B) 3
(C) 1
(D) 2

Questions 101 to 103

Directions for questions 101 to 103: Answer the questions on the basis of the following information. In a Decathlon, the events are 100 m, 400 m, 100 m hurdles, 1,500 m, High jump, Pole vault, Long jump, Discus, Shot put and Javelin. The performance in the first four of these events is consolidated into Score-1, the next three into Score-2, and the last three into Score-3. Each such consolidation is obtained by giving appropriate positive weights to individual events. The final score is simply the total of these three scores. The athletes with the highest, second highest and the third highest final scores receive the gold, silver, and the bronze medals respectively. The table below gives the scores and performance of 19 top athletes in this event.

Name	Country	Final Score	Score-1	Score-2	Score-3	100m	High jump	Pole-vault
Eduard Hämäläinen	BLS	8802	491	5322	2989	10.74	2.08	4.8
Michael Smith	CAN	8855	174	5274	3407	11.23	1.97	4.9
Tomas Dvorak	CZE	8796	499	5169	3128	10.63	1.91	4.7
Uwe Freimuth	DDR	8799	441	5491	3124	11.06	1.97	4.8
Torsten Voss	DDR	8880	521	5234	2868	10.69	2.1	5.1
Erki Nool	EST	8768	408	5553	2808	10.71	1.99	5.4
Christian Plaziat	FRA	8775	563	5430	2781	10.72	2.1	5
Jürgen Hingsen	FRG	8792	451	5223	3033	10.95	2	4.9
Siegfried Wentz	FRG	8856	470	5250	3137	10.85	2.05	4.8
Guido Kratschmer	FRG	8861	575	5308	3064	10.58	2	4.6
Daley Thompson	GBR		582		3003	10.55	2.11	4.6
Frank Busemann	GER	8905	568	5392	2945	10.6	2.04	4.8
Alexandr Apaichev	SOV	8803	492	5370	3115	10.92	1.95	4.8
Grigory Degtyarov	SOV	8823	339	5196	3114	11.05	2.08	4.9
Robert Zmelik	TCH	8832	494	5455	2883	10.78	2.06	5.1
Dave Johnson	USA	8811	366	5370	3114	10.78	2.1	5
Steve Fritz	USA	8827	427	5163	3119	10.75	2.04	5
Bruce Jenner	USA	8846	483	5280	3200	10.94	2.03	4.8
Dan O'Brien	USA	8897	408	5331	3120	10.36	2.09	4.8

101. The athletes from FRG and USA decided to run a 4 × 100 m relay race for their respective countries with the country having three athletes borrowing the athlete from CZE. Assume that all the athletes ran their stretch of the relay race at the same speed as in Decathlon event. How much more time did the FRG relay team take as compared to the USA team?

(A) 0.18
(B) 0.28
(C) 0.78
(D) 0.00

102. What is the least that Daley Thompson must get in Score-2 that ensures him a bronze medal?

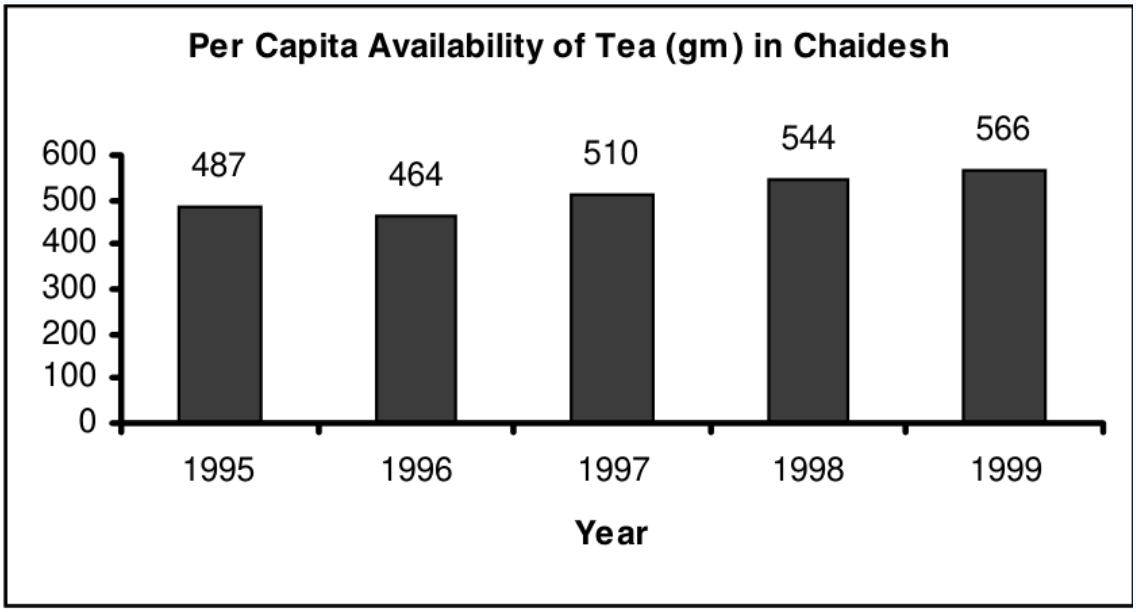
(A) 5309
(B) 5296
(C) 5271
(D) 5270

103. At least how many competitors (excluding Daley Thompson) must Michael Smith have out-jumped in the long jump event?

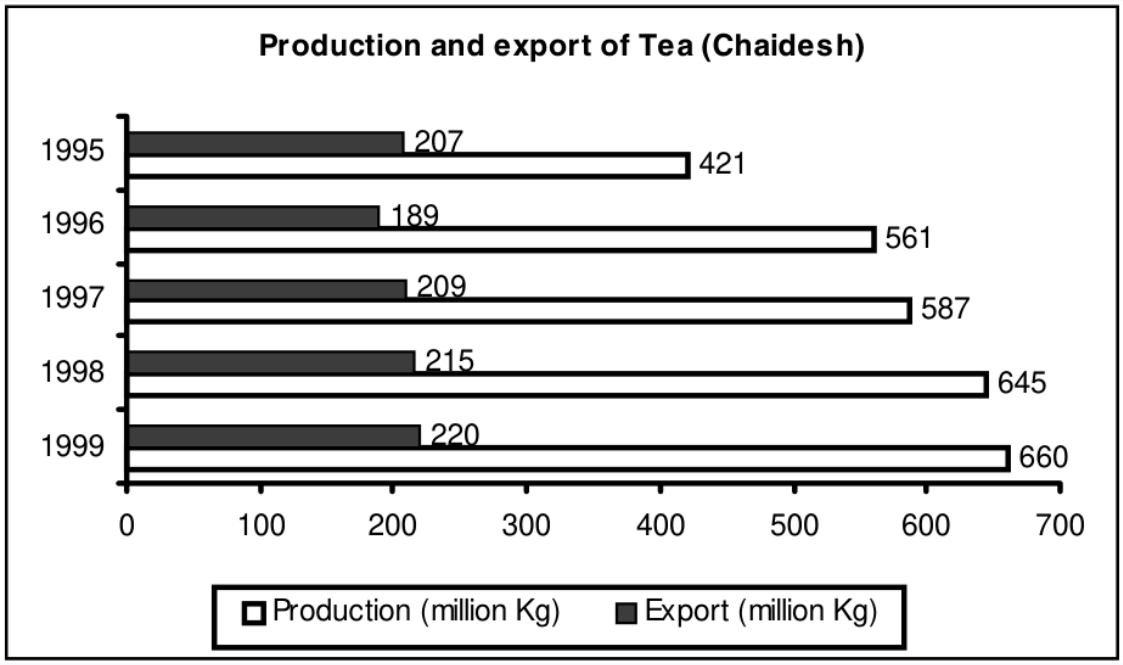
(A) One
(B) Two
(C) Three
(D) Four

Questions 104 to 106

Directions for questions 104 to 106: Answer the questions on the basis of the following charts.



(Note: Availability is defined as production less export.)



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104. In which year during the period 1996-1999 was Chaidesh's export of tea, as a proportion of tea produced, the highest?

(A) 1996 (B) 1997

(C) 1998 (D) 1999

105. In which of the following years was the population of Chaidesh the lowest?

(A) 1995 (B) 1996

(C) 1997 (D) 1999

106. The area under tea cultivation continuously decreased in all four years from 1996 to 1999, by 10%, 7%, 4%, and 1%, respectively. In which year was tea productivity (production per unit of area) the highest?

(A) 1999 (B) 1998

(C) 1997 (D) 1996

Questions 107 to 110

Directions for questions 107 to 110: Answer the questions on the basis of the following information.

The following is the wholesale price index (WPI) of a select list of items with the base year of 1993-94. In other words, all the item prices are made 100 in that year (1993-94). Prices in all other years for an item are measured with respect to its price in the base year. For instance, the price of cement went up by 1% in 1994-95 as compared to 1993-94. Similarly, the price of power went up by 3% in 1996-97 as compared to 1993-94.

	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
All items	100	102.0	102.5	104.0	103.0	105.0	106.0	108.0	107.0	106.0
Cement	100	101.0	100.5	103.0	102.5	103.5	103.1	103.8	103.7	104.0
Limestone	100	102.0	102.5	102.75	102.25	103.0	104.0	105.0	104.5	105.0
Power	100	101.5	102.5	103.0	103.5	104.0	106.0	107.0	107.5	108.0
Steel	100	101.5	101.0	103.5	104.0	104.25	105.0	105.5	106.0	105.5
Timber	100	100.5	101.5	102.0	102.5	102.0	103.0	103.5	104.0	104.5
Wages	100	101.5	103.0	103.5	104.0	104.25	104.0	104.75	104.9	105.3

107. Let us suppose that one bag of cement (50 kg) consumes 100 kg of limestone and 10 units of power. The only other cost item in producing cement is in the form of wages. During 1993-94, limestone, power and wages contributed, respectively, 20%, 25% and 15% to the cement price per bag. The average operating profit (per cent of price per cement bag) earned by a cement manufacturer during 2002-03 is closest to

(A) 40% (B) 39.5%

(C) 38.5% (D) 37.5%

108. Steel manufacturing requires the use of iron ore, power and manpower. The cost of iron ore has followed the All Items index. During 1993-94 power accounted for 30% of the selling price of steel, iron ore for 25%, and wages for 10% of the selling price of steel. Assuming the cost and price data for cement as given in the previous question, the operating profit (per cent of selling

price) of an average steel manufacturer in 2002-03

(A) is more than that of a cement manufacturer.
(B) is less than that of a cement manufacturer.
(C) is the same as that of a cement manufacturer.
(D) Cannot be determined.

109. Which item experienced continuous price rise during the ten-year period?

(A) Power
(B) Cement
(C) Wages
(D) Limestone

110. Which item(s) experienced only one decline in price during the ten-year period?

(A) Steel and limestone
(B) Steel and timber
(C) Timber
(D) Timber and wages

Questions 111 to 114

Directions for questions 111 to 114: Answer the questions on the basis of the following table.

Below is a table that lists countries region-wise. Each region-wise list is sorted, first by birth rate and then alphabetically by name of country. We now wish to merge the region-wise list into one consolidated list and provide overall rankings to each country based first on birth rate and then on death rate. Thus, if some countries have the same birth rate, then the country with a lower death rate will be ranked higher. Further, countries having identical birth and death rates will get the same rank. For example, if two countries are tied for the third position, then both will be given rank 3, while the next country (in the ordered list) will be ranked 5.

Rank	Country	Birth Rate	Death Rate	Region
1	South Africa	36	12	Africa
2	Egypt	39	13	Africa
3	Cameroon	42	22	Africa
4	Mozambique	45	18	Africa
5	Zaire	45	18	Africa
6	Ghana	46	14	Africa
7	Angola	47	23	Africa
8	Madagascar	47	22	Africa
9	Morocco	47	16	Africa
10	Tanzania	47	17	Africa
11	Ethiopia	48	23	Africa
12	Ivory coast	48	23	Africa
13	Rhodesia	48	14	Africa
14	Uganda	48	17	Africa
15	Nigeria	49	22	Africa
16	Saudi Arabia	49	19	Africa
17	Sudan	49	17	Africa
18	Algeria	50	16	Africa
19	Kenya	50	14	Africa
20	Upper Volta	50	28	Africa

Rank	Country	Birth Rate	Death Rate	Region
1	Germany (FRG)	10	12	Europe
2	Austria	12	13	Europe
3	Belgium	12	12	Europe
4	Germany (DRG)	12	14	Europe
5	Sweden	12	11	Europe
6	Switzerland	12	9	Europe
7	U.K.	12	12	Europe
8	Netherlands	13	8	Europe
9	France	14	11	Europe
10	Italy	14	10	Europe
11	Greece	16	9	Europe
12	Bulgaria	17	10	Europe
13	Hungary	18	12	Europe
14	Spain	18	8	Europe
15	USSR	18	9	Europe
16	Yugoslavia	18	8	Europe
17	Czech. Rep.	19	11	Europe
18	Portugal	19	10	Europe
19	Romania	19	10	Europe
20	Poland	20	9	Europe

Rank	Country	Birth Rate	Death Rate	Region
1	Japan	16	6	Asia
2	Korea (ROK)	26	6	Asia
3	Sri Lanka	26	9	Asia
4	Taiwan	26	5	Asia
5	Malaysia	30	6	Asia
6	China	31	11	Asia
7	Thailand	34	10	Asia
8	Turkey	34	12	Asia
9	India	36	15	Asia
10	Burma	38	15	Asia
11	Iran	42	12	Asia
12	Vietnam	42	17	Asia
13	Korea (DPRK)	43	12	Asia
14	Pakistan	44	14	Asia
15	Nepal	46	20	Asia
16	Bangladesh	47	19	Asia
17	Syria	47	14	Asia
18	Iraq	48	14	Asia
19	Afghanistan	52	30	Asia

Rank	Country	Birth Rate	Death Rate	Region
1	U.S.A.	15	9	N. America
2	Canada	16	7	N. America
3	Cuba	20	6	N. America
4	Mexico	40	7	N. America
1	Australia	16	8	Pacific
2	Philippines	34	10	Pacific
3	Indonesia	38	16	Pacific
1	Argentina	22	10	S. America
2	Chile	22	7	S. America
3	Colombia	34	10	S. America
4	Brazil	36	10	S. America
5	Venezuela	36	6	S. America
6	Guatemala	40	14	S. America
7	Peru	40	13	S. America
8	Ecuador	42	11	S. America

111. In the consolidated list, what would be the overall rank of the Philippines?

(A) 32
(B) 33
(C) 34
(D) 35

112. In the consolidated list, how many countries would rank below Spain and above Taiwan?

(A) 9
(B) 8
(C) 7
(D) 6

113. In the consolidated list, which country ranks 37th?

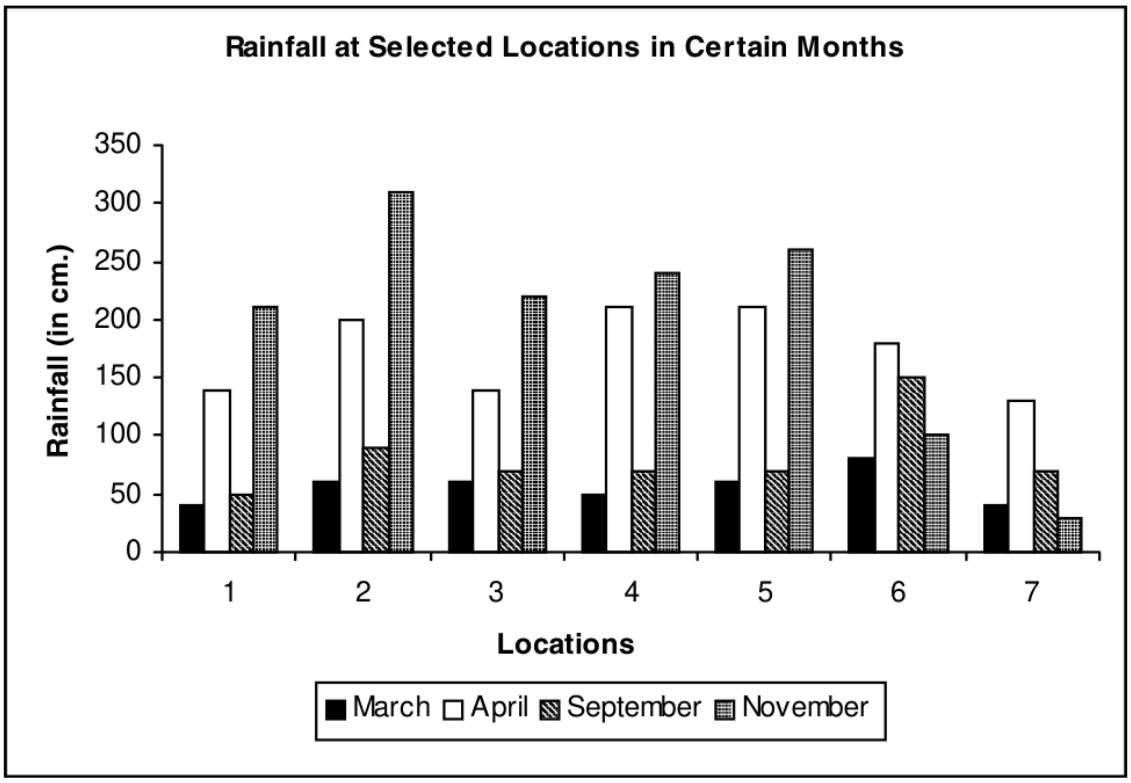
(A) South Africa
(B) Brazil
(C) Turkey
(D) Venezuela

114. In the consolidated list, how many countries in Asia will rank lower than every country in South America, but higher than at least one country in Africa?

(A) 8
(B) 7
(C) 6
(D) 5

Questions 115 to 116

Directions for questions 115 and 116: Answer the questions on the basis of the data presented in the figure below.



115. Which of the following statements is correct?

(A) November rainfall exceeds 100 cm in each location.

(B) September rainfall exceeds 50 cm in each location.

(C) March rainfall is lower than September rainfall in each location.

(D) None of these.

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116. Locations 6 and 7 differ from all the rest because only in these two locations,

(A) April rainfall exceeds March rainfall.

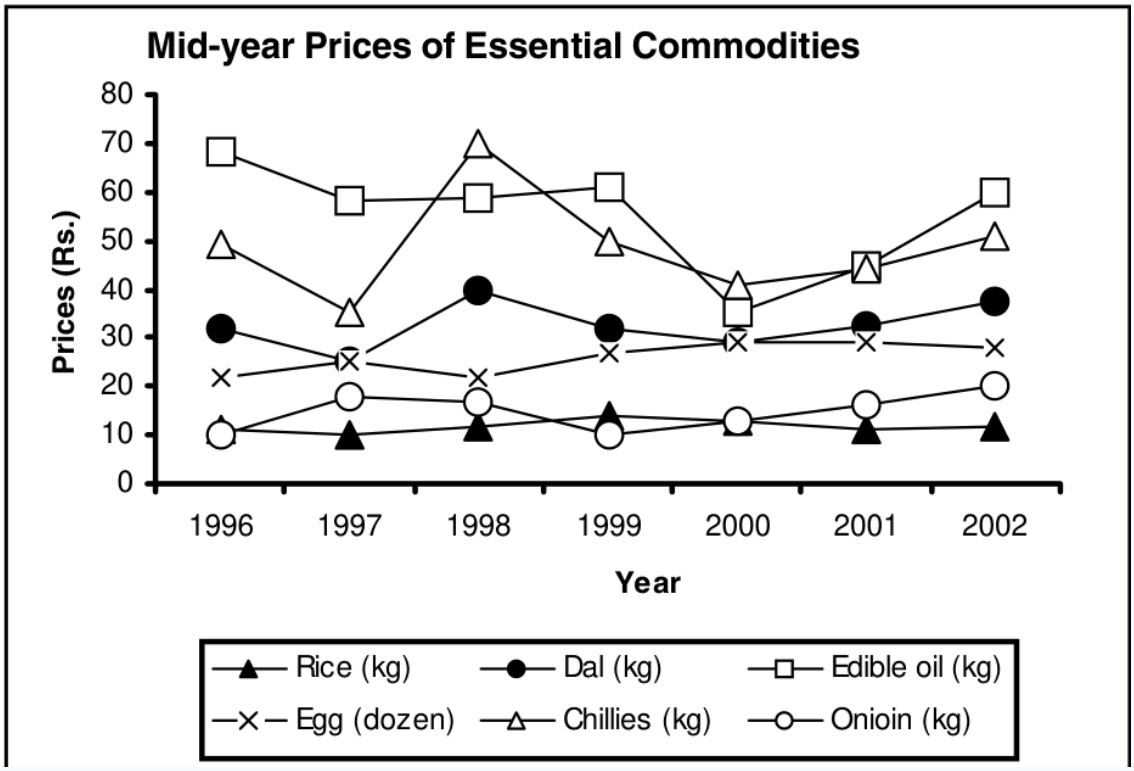
(B) Peak rainfall occurs in April.

(C) November rainfall is lower than March rainfall.

(D) April rainfall is less than 200 cm.

Questions 117 to 119

Directions for questions 117 to 119: Answer the questions on the basis of the data presented in the figure below.



117. During 1996-2002, the number of commodities that exhibited a net overall increase and net overall decrease, respectively, were

(A) 3 and 3
(B) 2 and 4
(C) 4 and 2
(D) 5 and 1

118. The number of commodities that experienced a price decline for two or more consecutive years is

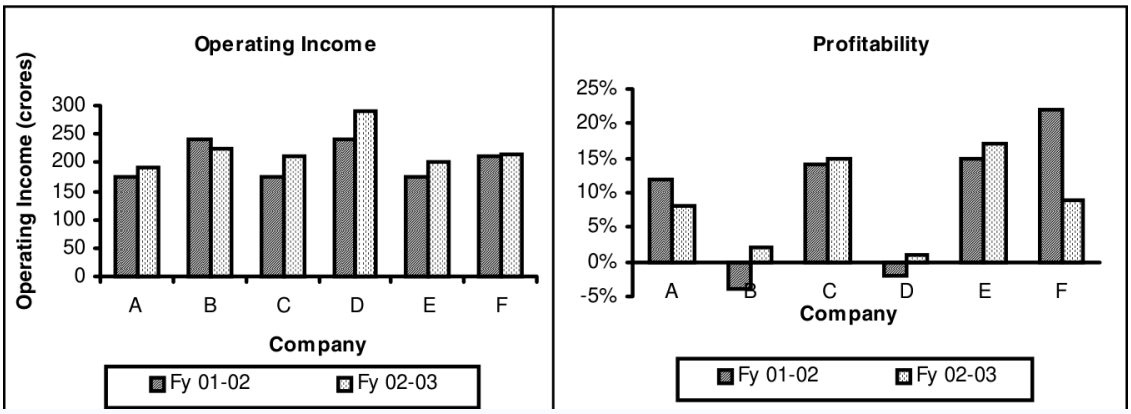
(A) 2
(B) 3
(C) 4
(D) 5

119. For which commodities did a price increase immediately follow a price decline only once in this period?

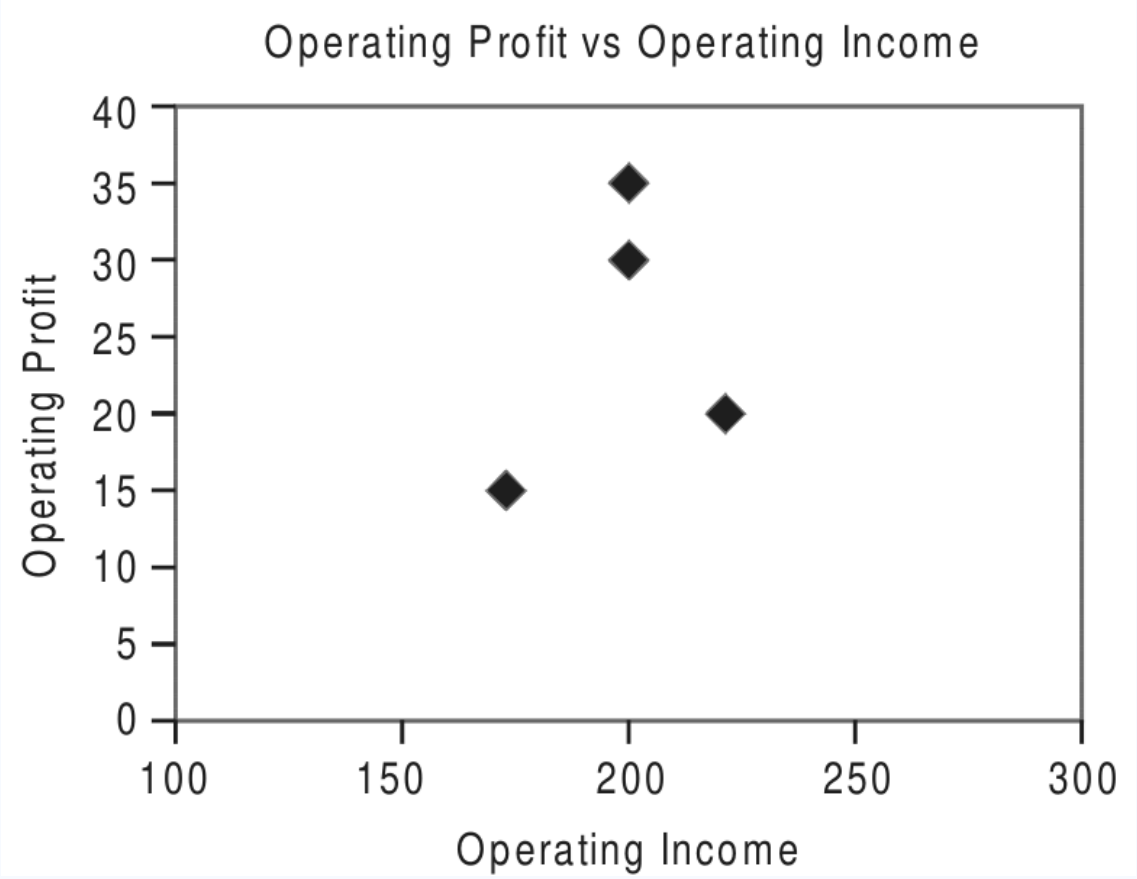
(A) Rice, edible oil and dal
(B) Egg and dal
(C) Onion only
(D) Egg and onion

Questions 120 to 123

Directions for questions 120 to 123: Answer the questions on the basis of the following charts. The profitability of a company is defined as the ratio of its operating profit to its operating income, typically expressed in percentage. The following two charts show the operating income as well as the profitability of six companies in the years 2001-02 and 2002-03.



The operating profits of four of these companies are plotted against their respective operating income figures for the F.Y. 2002-03, in the third chart given below.



120. Which of the following statements is NOT true?

(A) The company with the third lowest profitability in F.Y. 2001-02 has the lowest operating income in F.Y. 2002-03.

(B) The company with the highest operating income in the two financial years combined has the lowest operating profit in F.Y. 2002-03.

(C) Companies with a higher operating income in F.Y. 2001-02 than in F.Y. 2002-03 have higher profitability in F.Y 2002-03 than in F.Y. 2001-02.

(D) Companies with profitability between 10% and 20% in F.Y. 2001-02 also have operating incomes between 150 crore and 200 crore in F.Y. 2002-03.

121. Which company recorded the highest operating profit in F.Y. 2002-03?

(A) A
(B) C
(C) E
(D) F

122. What is the approximate average operating profit, in F.Y 2001-02, of the two companies excluded from the third chart?

(A) –7.5 crore
(B) 3.5 crore
(C) 25 crore
(D) Cannot be determined

123. The average operating profit in F.Y. 2002-03 of companies with profitability exceeding 10% in F.Y. 2002-03, is approximately

(A) 17.5 crore
(B) 25 crore
(C) 27.5 crore
(D) 32.5 crore

Questions 124 to 126

Directions for questions 124 to 126: Answer the questions on the basis of the table given below: Sex Ratio (Number of females per 1,000 males) of Selected States in India : 1901-2001

	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
AP	985	992	993	987	980	986	981	977	975	972	978
Assam	919	915	896	874	875	868	869	896	910	923	932
Bihar	1061	1051	1020	995	1002	1000	1005	957	948	907	921
Goa	1091	1108	1120	1088	1084	1128	1066	981	975	967	960
Gujarat	954	946	944	945	941	952	940	934	942	934	921
Haryana	867	835	844	844	869	871	868	867	870	865	861
HP	884	889	890	897	890	912	938	958	973	976	970
J&K	882	876	870	865	869	873	878	878	892	896	900
Karnataka	983	981	969	965	960	966	959	957	963	960	964
Kerala	1004	1008	1011	1022	1027	1028	1022	1016	1032	1036	1058
MP	972	967	949	947	946	945	932	920	921	912	920
Maharashtra	978	966	950	947	949	941	936	930	937	934	922
Orissa	1037	1056	1086	1067	1053	1022	1001	988	981	971	972
Punjab	832	780	799	815	836	844	854	865	879	882	874
Rajasthan	905	908	896	907	906	921	908	911	919	910	922
TN	1044	1042	1029	1027	1012	1007	992	978	977	974	986
UP	938	916	908	903	907	998	907	876	882	876	898
WB	945	925	905	890	852	865	878	891	911	917	934
India	**972**	**964**	**955**	**950**	**945**	**946**	**941**	**930**	**934**	**927**	**933**

124. The two states which achieved the largest increases in sex ratio over the period 1901-2001 are

(A) Punjab and HP

(B) HP and Kerala

(C) Assam and J & K

(D) Kerala and J & K

125. Among the states which have a sex ratio exceeding 1000 in 1901, the sharpest decline over the period 1901-2001 was registered in the state of

(A) Goa

(B) TN

(C) Bihar

(D) Orissa

126. Each of the following statements pertains to the number of states with females outnumbering males in a given census year. Which of these statements is NOT correct?

(A) This number never exceeded 5 in any census year.

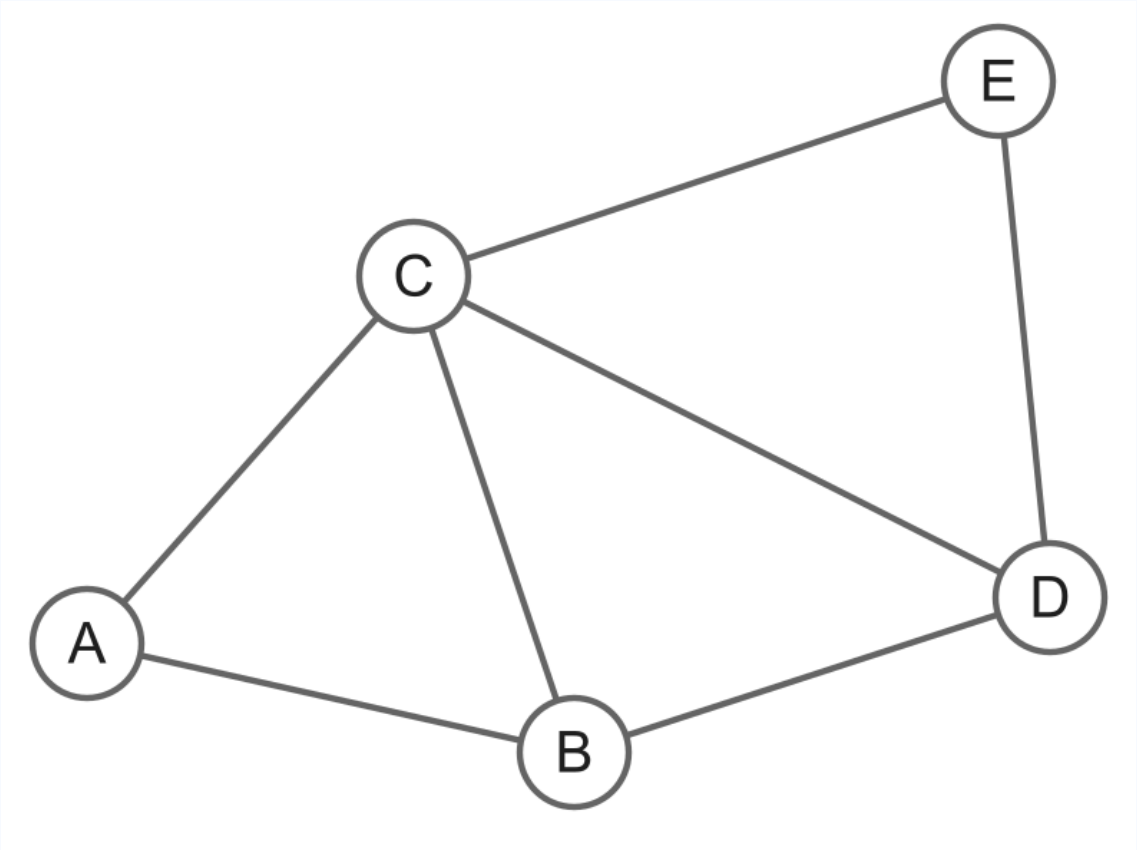
(B) This number registered its sharpest decline in 1971.

(C) The number of consecutive censuses in which this number remained unchanged never exceeded 3.

(D) Prior to the 1971 census, this number was never less than 4.

Questions 127 to 128

Directions for questions 127 and 128: Answer the questions on the basis of the following information. Shown below is the layout of major streets in a city.



Two days (Thursday and Friday) are left for campaigning before a major election, and the city administration has received requests from five political parties for taking out their processions along the following routes.

Congress: A-C-D-E BJP: A-B-D-E SP: A-B-C-E BSP: B-C-E CPM: A-C-D Street B-D cannot be used for a political procession on Thursday due to a religious procession. The district administration has a policy of not allowing more than one procession to pass along the same street on the same day. However, the administration must allow all parties to take out their procession during these two days.

127. Congress procession can be allowed

(A) only on Thursday

(B) only on Friday

(C) on either day

(D) only if the religious procession is cancelled

128. Which of the following is NOT true?

(A) Congress and SP can take out their processions on the same day.

(B) The CPM procession cannot be allowed on Thursday.

(C) The BJP procession can only take place on Friday.

(D) Congress and BSP can take out their processions on the same day.

129. In a cricket match, the 'Man of the Match' award is given to the player scoring the highest number of runs. In case of a tie, the player (out of those locked in the tie) who has taken the higher number of catches is chosen. Even thereafter if there is a tie, the player (out of those locked in the tie) who has dropped fewer catches is selected. Aakash, Biplab, and Chirag who were contenders for the award dropped at least one catch each. Biplab dropped two catches more than Aakash did, scored 50, and took two catches. Chirag got two chances to catch and dropped both. Who was the 'Man of the Match'? A. Chirag made 15 runs less than both Aakash and Biplab. B. The catches dropped less by Biplab are 1 more than the catches taken by Aakash.

(A) The question can be answered by using statement A alone but not by using B alone.

(B) The question can be answered by using statement B alone but not by using A alone.

(C) The question can be answered by using either statement alone.

(D) The question can be answered using both the statements together but not by either statement alone.

130. Four friends — A, B, C and D got the top four ranks in a competitive examination, but A did not get the first, B did not get the second, C did not get the third, and D did not get the fourth rank. Who secured which rank? A. Neither A nor D were among the first 2. B. Neither B nor C was third or fourth.

(A) The question can be answered by using statement A alone but not by using B alone.

(B) The question can be answered by using statement B alone but not by using A alone.

(C) The question can be answered by using either statement alone.

(D) The question can be answered using both the statements together but not by either statement alone.

131. The members of a local club contributed equally to pay Rs. 600 towards a donation. How much did each one pay? A. If there had been five fewer members, each one would have paid an additional Rs. 10. B. There were at least 20 members in the club, and each one paid not more than Rs. 30.

(A) The question can be answered by using statement A alone but not by using B alone.

(B) The question can be answered by using statement B alone but not by using A alone.

(C) The question can be answered by using either statement alone.

(D) The question can be answered using both the statements together but not by either statement alone.

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132. A family has only one kid. The father says, "After 'n' years, my age will be 4 times the age of my kid." The mother says, "After 'n' years, my age will be 3 times that of my kid." What will be the combined ages of the parents after 'n' years? A. The age difference between the parents is 10 years. B. After 'n' years the kid is going to be twice as old as she is now.

(A) The question can be answered by using statement A alone but not by using B alone.

(B) The question can be answered by using statement B alone but not by using A alone.

(C) The question can be answered by using either statement alone.

(D) The question can be answered using both the statements together but not by either statement alone.

Questions 133 to 137

Directions for questions 133 to 137: Answer the questions on the basis of the following information. Recently, the answers of a test held nationwide were leaked to a group of unscrupulous people. The investigative agency has arrested the mastermind and nine other people A, B, C, D, E, F, G, H and I in this matter. Interrogating them, the following facts have been obtained regarding their operation. Initially the mastermind obtains the correct answer-key. All the others create their answer-key in the following manner. They obtain the answer-key from one or two people who already possess the same. These people are called his/her 'sources'. If the person has two sources, then he/she compares the answer-keys obtained from both sources. If the key to a question from both sources is identical, it is copied, otherwise it is left blank. If the person has only one source, he/she copies the source's answers into his/her copy. Finally, each person compulsorily replaces one of the answers (not a blank one) with a wrong answer in his/her answer key. The paper contained 200 questions; so the investigative agency has ruled out the possibility of two or more of them introducing wrong answers to the same question. The investigative agency has a copy of the correct answer key and has tabulated the following data. These data represent question numbers.

Name	Wrong Answer(s)	Blank Answer(s)
A	46	—
B	96	46, 90, 25
C	27, 56	17, 46, 90
D	17	—
E	46, 90	—
F	14, 46	92, 90
G	25	—
H	46, 92	—
I	27	17, 46, 90

133. Which one among the following must have two sources?

(A) A
(B) B
(C) C
(D) D

134. How many people (excluding the mastermind) needed to make answer-keys before C could make his answer-key?

(A) 2
(B) 3
(C) 4
(D) 5

135. Both G and H were sources to

(A) F
(B) B
(C) I
(D) None of the nine

136. Which of the following statements is true?

(A) C introduced the wrong answer to question 27.
(B) E introduced the wrong answer to question 46.
(C) F introduced the wrong answer to question 14.
(D) H introduced the wrong answer to question 46.

137. Which of the following two groups of people had identical sources? I. A, D and G II. E and H

(A) Only I
(B) Only II
(C) Neither I nor II
(D) Both I and II

138. Seventy percent of the employees in a multinational corporation have VCD players, 75% have microwave ovens, 80% have ACS and 85% have washing machines. At least what percentage of employees has all four gadgets?

(A) 15
(B) 5
(C) 10
(D) Cannot be determined

Questions 139 to 142

Directions for questions 139 to 142: Answer the questions on the basis of the following information.

Four families decided to attend the marriage ceremony of one of their colleagues. One family has no kids, while the others have at least one kid each. Each family with kids has at least one kid attending the marriage. Given below is some information about the families, and who reached when to attend the marriage.

The family with two kids came just before the family with no kids. Shanthi who does not have any kids reached just before Sridevi's family. Sunil and his wife reached last with their only kid. Anil is not the husband of Joya. Anil and Raj are fathers. Sridevi's and Anita's daughters go to the same school. Joya came before Shanthi and met Anita when she reached the venue Raman stays the farthest from the venue. Raj said his son could not come because of his exams.

139. Who among the following arrived third?

(A) Shanthi
(B) Sridevi
(C) Anita
(D) Joya

140. Name the correct pair of husband and wife.

(A) Raj and Shanthi
(B) Sunil and Sridevi
(C) Anil and Sridevi
(D) Raj and Anita

141. Of the following pairs, whose daughters go to the same school?

(A) Anil and Raman
(B) Sunil and Raman
(C) Sunil and Anil
(D) Raj and Anil

142. Whose family is known to have more than one kid for certain?

(A) Raman's
(B) Raj's
(C) Anil's
(D) Sunil's

Questions 143 to 146

Directions for questions 143 to 146: Answer the questions on the basis of the following information. Seven faculty members at a management institute frequent a lounge for strong coffee and stimulating conversation. On being asked about their visit to the lounge last Friday we got the following responses.

JC: I came in first, and the next two persons to enter were SS and SM. When I left the lounge, JP and VR were present in the lounge. DG left with me. JP: When I entered the lounge with VR, JC was sitting there. There was someone else, but I cannot remember who it was. SM: I went to the lounge for a short while, and met JC, SS and DG in the lounge that day. SS: I left immediately after SM left.

DG: I met JC, SS, SM, JP and VR during my first visit to the lounge, I went back to my office with JC. When I went to the lounge the second time, JP and VR were there. PK: I had some urgent work, so I did not sit in the lounge that day, but just collected my coffee and left. JP and DG were the only people in the lounge while I was there. VR: No comments.

143. Based on the responses, which of the two, JP or DG, entered the lounge first?

(A) JP
(B) DG
(C) Both entered together
(D) Cannot be determined

144. Who was sitting with JC when JP entered the lounge?

(A) SS
(B) SM
(C) DG
(D) PK

145. How many of the seven members did VR meet on Friday in the lounge?

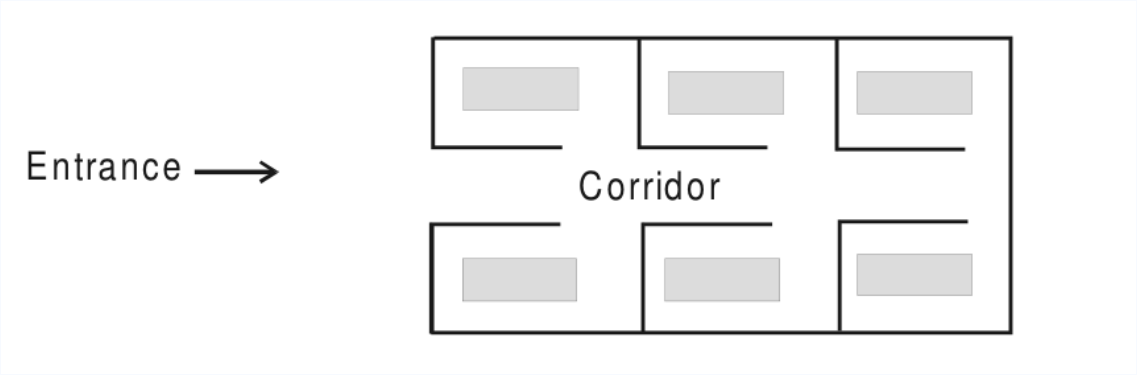
(A) 2
(B) 3
(C) 4
(D) 5

146. Who were the last two faculty members to leave the lounge?

(A) JC and DG
(B) PK and DG
(C) JP and PK
(D) JP and DG

Questions 147 to 150

Directions for questions 147 to 150: Answer the questions on the basis of the following information.



The plan above shows an office block for six officers — A, B, C, D, E and F. Both B and C occupy offices to the right of the corridor (as one enters the office block) and A occupies an office to the left of the corridor. E and F occupy offices on opposite sides of the corridor but their offices do not face each other. The offices of C and D face each other. E does not have a corner office. F's office is further down the corridor than A's, but on the same side.

147. If E sits in his office and faces the corridor, whose office is to his left?

(A) A
(B) B
(C) C
(D) D

148. Whose office faces A's office?

(A) B
(B) C
(C) D
(D) E

149. Who is/are F's neighbour(s)?

(A) A only
(B) A and D
(C) C only
(D) B and C

150. D was heard telling someone to go further down the corridor to the last office on the right. To whose room was he trying to direct that person?

(A) A
(B) B
(C) C
(D) F

- End of Question Paper -