

Passage 1

Most farmers attempting to control slugs and snails turn to baited slug poison, or molluscicide, which usually consists of a bran pellet containing either methiocarb or metaldehyde. Both chemicals are neurotoxins that disrupt that part of the brain charged with making the mouth move in a coordinated fashion—the "central pattern generator"—as the slug feeds. Thus, both neurotoxins, while somewhat effective, interfere with the slugs' feeding behavior and limit their ingestion of the poison, increasing the probability that some will stop feeding before receiving a lethal dose. Moreover, slugs are not the only consumers of these poisons: methiocarb may be toxic to a variety of species, including varieties of worms, carabid beetles, and fish.

Researchers are experimenting with an alternative compound based on aluminum, which may solve these problems, but this may well have a limited future as we learn more about the hazards of aluminum in the environment. For example, some researchers suggest that acid rain kills trees by mobilizing aluminum in the soil, while others have noted that the human disease Alzheimer's is more prevalent in areas where levels of aluminum in the soil are high. With farmers losing as much as 20 percent of their crops to slugs and snails even after treatment with currently available molluscicides, there is considerable incentive for researchers to come up with better and environmentally safer solutions.

Q1.In the passage, the author is primarily concerned with

- (a) describing the limitations of molluscicides that affect feeding behavior
- (b) proposing alternatives to current methods of controlling slugs and snails
- (c) emphasizing the need for an alternative to currently available molluscicides
- (d) criticizing the use of hazardous material for controlling slugs and snails

Q2.The author cites which of the following as a disadvantage of methiocarb?

- (a) It contains high levels of aluminum.
- (b) It may react with acid rain to kill trees.

(c) It has been associated with Alzheimer's disease.

(d) It may be toxic to some species of fish.

Q3.The passage suggests that methiocarb and metaldehyde would be more effective as slug poisons if it were true that they

- (a) disrupt the slug's digestive processes rather than its reproductive functions
- (b) reduce the slug's ability to taste food
- (c) begin to affect the feeding behavior of a slug only after it has ingested a lethal dose
- (d) accumulate only in the central pattern generator rather than throughout the brain.

Q4.Excavations of the Roman city of Sepphoris have uncovered numerous detailed mosaics depicting several readily identifiable animal species: a hare, a partridge, and various Mediterranean fish. Oddly, most of the species represented did not live in the Sepphoris region when these mosaics were created. Since identical motifs appear in mosaics found in other Roman cities, however, the mosaics of Sepphoris were very likely created by traveling artisans from some other part of the Roman Empire. Which of the following is an assumption on which the argument depends?

- (a) There is no single region to which all the species depicted in the Sepphoris mosaics native.
- (b) No motifs appear in the Sepphoris mosaics that do not also appear in the mosaics of some other Roman city.
- (c) All of the animal figures in the Sepphoris mosaics are readily identifiable as representation of known species.
- (d) There was not a common repertory of mosaic designs with which artisans who lived in various parts of the Roman empire were familiar.

Passage 2

The storms most studied by climatologists have been those that are most easily understood by taking atmospheric measurements. Hurricanes and tornadoes, for example, are spatially confined, the forces that drive them are highly concentrated, and

they have distinctive forms and readily quantifiable characteristics. Consequently, data about them are abundant, and their behavior is relatively well understood, although still difficult to predict.

Hurricanes and tornadoes are also studied because they are highly destructive storms, and knowledge about their behavior can help minimize injury to people and property. But other equally destructive storms have not been so thoroughly researched, perhaps because they are more difficult to study. A primary example is the northeaster, a type of coastal storm that causes significant damage along the eastern coast of North America. Northeasters, whose diffuse nature makes them difficult to categorize, are relatively weak low-pressure systems with winds that rarely acquire the strength of even the smallest hurricane. Although northeasters are perceived to be less destructive than other storms, the high waves associated with strong northeasters can cause damage comparable to that of a hurricane, because they can affect stretches of coast more than 1,500 kilometers long, whereas hurricanes typically threaten a relatively small ribbon of coastline—roughly 100 to 150 kilometers.

Q5. The primary purpose of the passage is to

- (a) evaluate the relative amounts of damage caused by different storm types
- (b) describe the difficulties of classifying destructive storms by type
- (c) examine the relationship between wave height and the destructive potential of storms
- (d) discuss reasons why certain types of storms receive more study than others

Q6. According to the passage, which of the following is true of northeasters?

- (a) They have only recently been identified as a distinct storm type.
- (b) They are more destructive than tornadoes.
- (c) They are low-pressure systems.
- (d) They affect a relatively small segment of the eastern coast of North America.

Q7. Which of the following can be inferred from the passage about storms that lend themselves to atmospheric measurements?

- (a) They are more likely than other storms to be studied by climatologists.
- (b) They are likely to be less highly concentrated than are other storms.
- (c) They are likely to be more difficult to predict than are other storms.
- (d) They tend to affect larger areas than do other storms.

Q8. The ancient Nubians inhabited an area in which typhus occurs, yet surprisingly few of their skeletons show the usual evidence of this disease. The skeletons do show deposits of tetracycline, an antibiotic produced by a bacterium common in Nubian soil. This bacterium can flourish on the dried grain used for making two staples of Nubian diet, beer and bread. Thus, tetracycline in their food probably explains the low incidence of typhus among ancient Nubians. Which of the following is an assumption on which the argument relies?

- (a) Infectious diseases other than typhus to which the ancient Nubians were exposed are unaffected by tetracycline.
- (b) Tetracycline is not rendered ineffective as an antibiotic by exposure to the process involved in making bread and beer.
- (c) Typhus cannot be transmitted by ingesting bread or beer contaminated with the infectious agents of this disease.
- (d) Bread and beer were the only items in the diet of the ancients Nubians which could have contained tetracycline.

Passage 3

Atmospheric jet streams were discovered towards the end of World War II by U.S. bomber pilots over Japan and by German reconnaissance aircraft over the Mediterranean. The World Meteorological Organization defines a jet stream as a strong, narrow air current that is concentrated along nearly horizontal axis in the upper troposphere or stratosphere (10 to 50 km altitude), characterized by wind motions that produce strong vertical lateral shearing action and featuring one of more velocity maximum. Normally a jet stream is thousands of kilometers long, hundreds of kilometers wide and several kilometers deep. The vertical wind shear is of the order of 5 to 10 m/sec per kilometer, and the lateral shear is of the order of 5 m/sec per 100 km.

An arbitrary lower limit of 30m/sec is assigned to the speed of the wind along the axis of a jet stream.

With abundant radio-sonic data now available over the Northern Hemisphere it is possible to map the jet streams in the upper troposphere (near 10 to 12 km) in their daily occurrence and variation and to forecast them reasonably well with numerical prediction techniques. Upper-air information from the Southern Hemisphere is still sparse. Constant-level balloons (the so-called GHOST balloons) and satellite information on temperature structure and characteristic cloud formations in the atmosphere are serving to close the data on the global jet stream distribution.

The strongest winds known in jet streams have been encountered over Japan, where speeds up to 500 km/hr (close to 300 knots) occur. A persistent band of strong winds occurs during the winter season over this region, flowing from the southwest and leading tropical air northern India into juxtaposition with polar and arctic air from Siberia. A similar region of confluence of air masses with vastly different temperatures exists over the central and eastern United States, leading to a maximum frequency of occurrence of jet streams during winter and spring.

The main impact on weather and climate comes from two distinct jet stream system: the Polar - Front Jet Stream, which is associated with the air mass contracts (the fronts) of middle latitudes and which gives rise to the formation of squalls, storms, and cyclones in this latitude belt; and the Subtropical Jet Stream, which lies over the subtropical high-pressure belt, and which is characterized by predominant subsidence motions and, hence, with fair weather. During summer, a belt of strong easterly winds is found over Southeast Asia, India, the Arabian Sea, and tropical Africa, this tropical, easterly jet streams is tied in with the weather disturbances of the Indian and African summer monsoons and their heavy rainfalls.

Because of their strong winds, jet streams play an important role in the economy of air traffic. Head winds must be outlasted by extra fuel, which takes up useful cargo space. Clear air turbulence (CAT) is often associated with the strong vertical wind shears found in the jet stream region. It is a hazard to passenger and crew safety, and, because of the increased stresses on the air frame, it decreases the useful life of the aircraft.

Q9. According to present knowledge, jet streams are caused when

- (a) polar and Arctic air meet.
- (b) air masses with considerably different temperatures meet.
- (c) winds with different speeds meet.
- (d) squalls, storms and cyclones get dispersed.

Q10. Jet streams affect air-traffic by

1. delaying flights.
2. Increased fuel consumption.
3. Their propensity to cause accidents.
4. Damaging the air frame.

- (a) 1, 2, 3 and 4
- (b) 2 and 4 only
- (c) 2, 3 and 4 only
- (d) 2 and 3 only

Q11. The summer monsoon over India is caused by

- (a) the rotation of the earth.
- (b) jet streams from the subtropical regions.
- (c) juxtaposition of tropical air with Arctic air in the upper atmosphere.
- (d) a tropical and easterly jet stream.

Q12. The result of the Subtropical Jet Stream is

- (a) the occurrence of cyclones.
- (b) the prevalence of fair weather.
- (c) head winds which affect air traffic.
- (d) high wind speed over Japan.

Passage 4

A conservation problem equally as important as that of soil erosion is the loss of soil fertility. Most agriculture was originally supported by the natural fertility of the soil; and, in areas in which soils were deep and rich in minerals, farming could be carried on for many years without the return of any nutrients to the soil other than those supplied through the natural breakdown of plant and animal wastes. In river basins, such as that of the Nile, annual flooding deposited a rich layer of silt over the soil, thus restoring its fertility. In areas of active volcanism, such as Hawaii, soil fertility has been renewed by the periodic deposition of volcanic ash. In other areas, however, natural fertility has been quickly exhausted. This is true of most forest soils, particularly those in the humid tropics. Because

continued cropping in such areas caused a rapid decline in fertility and therefore in crop yields, fertility could be restored only by abandoning the areas and allowing the natural forest vegetation to return. Over a period of time, the soil surface would be rejuvenated by parent materials, new circulation channels would form deep in the soil, and the deposition of forest debris would restore minerals to the topsoil. Primitive agriculture in such forests was of shifting nature: areas were cleared of trees and the woody material burned to add ash to the soil; after a few years of farming, the plots would be abandoned and new sites cleared. As long as populations were sparse in relation to the area of forestland, such agricultural methods did little harm. They could not, however, support dense populations or produce large quantities of surplus foods.

Starting with the most easily depleted soils, which were also the easiest to farm, the practice of using various fertilizers was developed. The earliest fertilizers were organic manures, but later, larger yields were obtained by adding balanced combinations of those nutrients (e.g. potassium, nitrogen, phosphorus and calcium) that crop plants require in greatest quantity. Because high yields are essential, most modern agriculture depends upon the continued addition of chemical fertilizers to the soil. Usually these substances are added in mineral form, but nitrogen is often added as urea, an organic compound.

Early in agricultural history, it was found that the practice of growing the same crop year after year in a particular plot of ground not only caused undesirable changes in the physical structure of the soil, but also drained the soil of its nutrients. The practice of crop rotation was discovered to be a useful way to maintain the condition of the soil, and also to prevent the buildup of those insects and other plant pests that are attracted to a particular kind of crop. In rotation systems, a grain crop is often grown the first year, followed by a leafy-vegetable crop in the second year, and pasture crop in the third. The last usually contains legumes (e.g. clover, alfalfa), because such plants can restore nitrogen to the soil through the action of bacteria that live in nodules on their roots.

In irrigation agriculture, in which water is brought in to supply the needs of crops in an area with insufficient rainfall, a particular soil-management problem that develops is the salinization

(concentration of salts) of the surface soil. This most commonly results from inadequate drainage of the irrigated land; because the water cannot flow freely, it evaporates, and the salts dissolved in the water are left on the surface of the soil. Even though the water does not contain a large concentration of dissolved salts, the accumulation over the years can be significant enough to make the soil unsuitable for crop production. Effective drainage solves the problem; in many cases, drainage canals must be constructed, and drainage tiles must be laid beneath the surface of the soil. Drainage also requires the availability of an excess of water to flush the salts from the surface soil. In certain heavy soils with poor drainage, this problem can be quite severe; for example, large areas of formerly irrigated land in the Indus basin, in the Tigris-Euphrates region, in the Nile Basin, and in the Western United States, have been seriously damaged by salinization.

Q13. The areas most prone to salinization are

- (a) those irrigated with well-water.
- (b) those in which crop rotation is not practiced.
- (c) sub-tropical forests.
- (d) flat land irrigated from reservoirs.

Q14. The factor that can restore fertility to the soil not mentioned in the passage is

- (a) alluvium brought by rivers
- (b) bacterial action
- (c) fertilizer fixation through lightning
- (d) organic manure

Q15. Crop rotation helps to

1. increase the farmer's seasonal income.
2. preserve soil condition.
3. desalinize the soil.
4. destroy pests.

- (a) 1, 2, 3 and 4
- (b) 1, 2 and 4 only
- (c) 2 and 4 only
- (d) 2, 3 and 4 only

Q16. One of the characteristics of agricultural land in Nile basin is

- (a) it contains a lot of bacteria.
- (b) it consists of heavy soil with poor drainage properties.

- (c) the Nile water contains an excess of salts.
- (d) it contains nutritive minerals.

Passage 5

Scientism has left humanity in our technical mastery of inanimate nature, but improvised us in our quest for an answer to the riddle of the universe and of our existence in it. Scientism has done worse than that with respect to our status as social beings, that is, to our life with our fellow human beings. The quest for the technical mastery of social life, comparable to our mastery over nature, did not find scientism at a loss for an answer: reason suggested that physical nature and social life were fundamentally alike and therefore proposed identical methods for their domination. Since reason in the form of causality reveals itself most plainly in nature, nature became the model for the social world and the natural sciences the image of what the social sciences one day would be. According to scientism, there was only one truth, the truth of science, and by knowing it, humanity would know all. This was, however, a fallacious argument, its universal acceptance initiated an intellectual movement and a political technique which retarded, rather than furthered, human mastery of the social world.

The analogy between the natural and social worlds is mistaken for two reasons. On the one hand human action is unable to model the social world with the same degree of technical perfection that is possible in the natural world. On the other hand, the very notion that physical nature is the embodiment of reason from which the analogy between natural and social worlds derives, is invalidated by modern scientific thought itself.

Physical nature, as seen by the practitioner of science consists of a multitude of isolated facts over which human action has complete control. We know that water boils at a temperature of 212 degrees Fahrenheit and, by exposing water to this temperature; we can make it boil at will. All practical knowledge of physical nature and all control over it are essentially of the same kind.

Scientism proposed that the same kind of knowledge and of control held true for the social world. The search for a single cause, in the social sciences, was but a faithful copy of the method of the physical sciences. Yet in the social sphere, the logical coherence of the natural sciences finds no adequate object and there is no single cause by the

creation of which one can create a certain effect at will. Any single cause in the social sphere can entail an indefinite number of different effects, and the same effect can spring from an indefinite number of different effects, and the same effect can spring from an indefinite number of different causes.

- Q17.** The author's attitude towards the application of scientism to the social sciences is best described as one of
- (a) committed scrutiny
 - (b) dismissal
 - (c) criticism
 - (d) approval
- Q18.** According to the author, causes and effects in the social world are
- (a) unrelated to each other
 - (b) difficult to identify or predict.
 - (c) subject to manipulation at will.
 - (d) reducible to a single cause for each effect.
- Q19.** Which of the following statements about scientism is best supported by the passage?
- (a) Scientism provides the basis for mastery of the social world
 - (b) Scientism is only superficially concerned with cause-and-effect relationships
 - (c) Scientism is poorly suited to explain social behaviour
 - (d) Scientism is no longer applicable to the study of the natural sciences.
- Q20.** In the passage, the author is most concerned with doing which of the following?
- (a) Upholding the primacy of reason over superstition
 - (b) Attacking a particular approach to the social sciences
 - (c) Describing a method for achieving control over human social behaviour
 - (d) Demonstration the superiority of the social sciences over the natural sciences

Passage 6

From a vantage point in space, an observer could see that the Earth is engaged in a variety of motions. First, there is its rotation on its own axis, causing the

alternation of day and night. This rotation, however, is not altogether steady. Primarily because of the moon's gravitational action, the Earth's axis wobbles like that of an ill-spun top. In this motion, called 'precession', the North and South Poles each traces out the base of a cone in space, completing a circle every 25,800 years, In addition, as the Sun and the Moon change their positions with respect to the Earth, their changing gravitational effects result in a slight 'nodding' of the earth's axis, called 'mutation', which is superimposed on precession. The Earth completes one of these 'nods' every 18.6 years.

The earth also, of course, revolves round the Sun, in a 6-million mile journey that takes 365.25 days. The shape of this orbit is an ellipse, but it is not the center of the Earth that follows the elliptical path. Earth and Moon behave like an asymmetrical dumb-bell, and it is the center of mass of this dumb-bell that traces the ellipse around the sun. The center of the Earth-Moon mass lies about 3000 miles away from the center of the Earth, and the Earth thus moves in an S-curve that crosses and recrosses its orbital path. Then too, the Earth accompanies the sun in the sun's movements: first, through its local star cloud, and second, in a great sweep around the hub of its galaxy, the Milky Way that takes 200 million years to complete.

- Q21.** The passage is most likely directed towards an audience of
- (a) geologists.
 - (b) astronauts.
 - (c) meteorologists interested in weather prediction.
 - (d) person with little technical knowledge of astronomy.
- Q22.** Which of the following best describes the main subject of the passage?
- (a) The various types of the Earth's motions
 - (b) Past changes in the Earth's position
 - (c) The moon gravitational effect on the earth
 - (d) Oddities of the Earth's rotation of its axis.
- Q23.** The passage indicates that a single cycle of which of the following motions is completed in the shortest period of time?
- (a) Mutation
 - (b) Precession

- (c) The Earth's rotation on its axis
- (d) The movement of the dumb-bell formed by the center of mass of Earth-Moon

Q24. Which of the following techniques does the author use in order to make the descriptions of motion clear?

- 1. Comparison with familiar objects.
 - 2. Reference of geometric forms.
 - 3. Allusions to the works of other authors.
- (a) 1 only
 - (b) 2 only
 - (c) 1 and 2 only
 - (d) 2 and 3 only

Passage 7

The connective tissues are heterogeneous group of tissues derived from the mesenchyme, a meshwork of stellate cells that develop in the middle layer of the early embryo. They have the general function of maintaining the structural integrity of organs, and providing cohesion and internal support for the body as a whole. The connective tissues include several types of fibrous tissue that vary only in their density and cellularity, as well as more specialized variants ranging from adipose tissue through cartilage to bone. The cells that are responsible for the specific function of an organ are referred to as parenchyma, while the delicate fibrous meshwork that binds the cells together into functional units, the fibrous partitions or septa that enclose aggregations of functional units, and the dense fibrous capsule that encloses the whole organ, collectively make up its connective-tissue framework, or stroma. Blood vessels, both large and small, course through connective tissues, which is therefore closely associated with the nourishment of tissues and organs throughout the body. All nutrient materials and waste products exchanged between the organs and the blood must traverse peri-vascular spaces occupied by connective tissue. One of the important functions of the connective – tissue cells is to maintain conditions in the extra-cellular spaces that favour this exchange.

Some organs are suspended from the wall of a body cavity by thin sheets of connective tissues called mesenteries; others are embedded in adipose tissue a form of a connective tissue in which the cells are specialized for the synthesis and storage of energy-rich reserves of fat, or lipid. The entire body is supported from within by a skeleton composed of bone, a type of connective tissue endowed with

great resistance to stress owing to its highly ordered, laminated structure and to its hardness, which results from deposition of mineral salts in its fibres and amorphous matrix. The individual bones of the skeleton are held firmly together by ligaments, and muscles are attached to bone by tendons, both of which are examples of dense connective tissue in which many fibre bundles are associated in parallel array to provide great tensile strength. At joints, the articular surfaces of the bones are covered with cartilage, a connective tissue with an abundant intercellular substance that gives it a firm consistency well adopted to permit smooth gliding movements between the opposed surfaces. The synovial membrane, which lines the margins of the joint cavity and lubricates and nourishes the joint surfaces, is also a form of connective tissue.

Q25. Mesenteries are

- (a) adipose tissue in which some organs are embedded.
- (b) referred to as parenchyma, and are responsible for specific functions of an organ.
- (c) thin sheets from which some organs are suspended.
- (d) cells through which blood flows.

Q26. Through peri-vascular spaces exchange takes place between

- (a) blood and organs
- (b) cells and embryo
- (c) nutrients and waste products
- (d) septa and stroma

Q27. The connective tissue in which fat is stored is called

- (a) adipose tissue
- (b) mesenteries
- (c) ligaments
- (d) adipose tissue

Q28. Some instances of connective tissues are

1. Cartilage
2. Stroma
3. Lipid
4. Synovia

(a) 1, 2, 3 and 4

(b) 1, 3 and 4 only

(c) 1, 2 and 4 only

(d) 1 and 2 only

Passage 8

Emile Durkheim, the first person to be formally recognized as a sociologist and the most scientific of the pioneers, conducted a study that stands as a research model for sociologists today. His investigation of suicide was, in fact, the first sociological study to use statistics. In *suicide* (1964, originally published in 1897) Durkheim documented his contention that some aspects of human behaviour – even something as allegedly individualistic as suicide – can be explained without reference to individuals.

Like all of Durkheim's work, suicide must be viewed within the context of his concern for social integration. Durkheim wanted to see if suicide rates within a social entity (for example, a group, organization, or society) are related to the degree to which individuals are socially involved (integrated and regulated). Durkheim describes three types of suicide: egoistic, anomic, and altruistic. Egoistic suicide is promoted when individuals do not have sufficient social ties. Since single (never married) adults, for example, are not heavily involved with the family life, they are more likely to commit suicide than are married adults. Altruistic suicide on the other hand, is more likely to occur when social integration is too strong. The ritual suicide of Hindu widows on their husband's funeral pyres is one example. Military personnel, trained to lay down their lives for their country, provide another illustration.

Durkheim's third type of suicide anomic suicide increases when the social regulation of individuals is disrupted. For example, suicide rates increase during economic depressions. People who suddenly find themselves without a job or without hope of finding one are more prone to kill themselves. Suicides may also increase during period of prosperity. People may loosen their social ties by taking new jobs, moving to new communities, or finding new mates.

Using data from the government population reports of several countries (much of it from the French Government Statistical Office), Durkheim found strong support for his line reasoning. Suicide rates were higher among single than married people, among military personnel than civilians, among

divorced than married people, and among people involved in nationwide economic crises.

It is important to realize that Durkheim's primary interest was not in the empirical (observations) indicators he used such as suicide rates among military personnel, married people, and so forth. Rather, Durkheim used the following indicators to support several of his contentions: (1) Social behavior can be explained by social rather than psychological factors; (2) suicide is affected by the degree of integration and regulation within social entities; and (3) Since society can be studied scientifically, sociology is worthy of recognition in the academic world. Durkheim was successful on all three counts.

Q29. In his study of suicide Durkheim's main purpose was

- (a) to document that suicide can be explained without reference to the individual.
- (b) to provide an explanation of the variation in the rate of suicide across societies.
- (c) to categorize various types of suicides.
- (d) to document that social behavior can be explained by social rather than psychological factors.

Q30. According to Durkheim, suicide rates within a social entity can be explained in terms of

- (a) absence of social ties
- (b) disruption of social regulation
- (c) nature of social integration
- (d) All of the above

Q31. Basing himself on his own indicators. Durkheim was

- (a) right on some counts, not others.
- (b) vindicated on all counts.
- (c) wrong but did not realize that he was right.
- (d) substantially correct but formally wrong.

Q32. To support his contentions, Durkheim relied on the following indicators

- (a) social behaviour is explicable predominantly through social factors.
- (b) suicide is contingent upon the degree of regulation and interaction.

(c) recognizing sociology is to acknowledge that society is susceptible to scientific investigation.

(d) All of the above

Passage – 9

How quickly things change in the technology business! A decade ago, IBM was the awesome and undisputed king of the computer trade, universally feared and respected. A decade ago, two little companies called Intel and Microsoft were mere blips on the radar screen of the industry, upstart start-ups that had signed on to make the chips and software for IBM's new line of personal computers. Though their products soon became industry standards, the two companies remained protected children of the market leader.

What happened since is a startling reversal of fortune. IBM is being ravaged by the worst crisis in the company's 79 year history. It is undergoing its fifth restructuring in the past seven years as well as seemingly endless rounds of job cuts and firings that have eliminated 100,000 jobs since 1985. Last week IBM announced to its shell-shocked investors that it lost \$4.97 billion last year – the biggest loss in American corporate history.

And just when IBM is losing ground in one market after another, Intel and Microsoft have emerged as the computer industry's most fearsome pair of competitors. The numbers on Wall Street tell a stunning story. Ten years ago, the market value of the stock of Intel and Microsoft combined amounted to about a tenth of IBM's. Last week, with IBM's stock at an 11-year low Microsoft's value surpassed its old mentor's for the first time ever (\$26.76 billion to \$26.48 billion) and Intel (\$24.3 billion) is not far behind. While IBM is posting losses, Intel's profits jumped 30%, and Microsoft's rose 44%.

Both Intel, the world's largest supplier of computer chips, and Microsoft, the world's largest supplier of computer software, have assumed the role long played by Big Blue as the industry's pacesetter. What is taking place is a generational shift unprecedented in the information age – one recalls a transition in the US auto industry 70 years ago, when Alfred Sloan's upstart General Motors surpassed Ford Motor as America's No. 1 car maker. The transition also reflects the decline of computer manufacturers such as IBM. Wang and Unisys and

the rise of companies like Microsoft, Intel and AT&T that create the chips and software to make the computers work. "Just like Dr. Frankenstein, IBM created these two monster Richard Shaffer publisher of the Computer Letter "Now even IBM is in danger of being trampled by the creations it unleashed."

Although Intel and Microsoft still have close relationships with Big Blue, there is little love lost between IBM and its potent progeny. IBM had an ugly falling-out with former partner Microsoft over the future of personal-computer software. Microsoft developed the now famous disk operating system for IBM-PC – called DOS – and later created the operating software for the next generation of IBM personal computers, the Personal System/2. When PS/2 and its operating system, OS/2, failed to catch on, a feud erupted over how the two companies would upgrade the system. Although they publicly patched things up, the partnership was tattered. IBM developed its own version of OS/2, which has so far failed to capture the industry's imagination. Microsoft's competing version, dubbed New Technology, or NT, will debut in a few months and will incorporate Microsoft's highly successful Windows program, which lets users juggle several programs at once. Windows NT, however, will offer more new features, such as the ability to link many computers together in a network and to safeguard them against unauthorized use.

IBM and Intel have also been parting company. After relying almost exclusively on the Santa Clara, California company for the silicon chips that serve as computer brains, IBM has moved to reduce its dependence on Intel by turning to competing vendors. In Europe, IBM last year began selling a low-cost line of PC's called Ambra, which runs on chips made by Intel rival Advanced Micro Devices. IBM also demonstrated a sample PC using a chip made by another Intel enemy, Cyrix. And that October IBM said it would begin selling the company's own chips to outsiders in direct competition with Intel.

IBM clearly feels threatened. And the wounded giant still poses the biggest threat to any further dominance by Intel and Microsoft. Last year, it teamed up with both companies most bitter rivals – Apple Computers and Motorola – to develop advanced software and microprocessors for a new generation of desktop computers. In selecting Apple

and Motorola, IBM bypassed its longtime partners. Just as Microsoft's standard operating system runs only on computers built around Intel's computer chips, Apple's software runs only on Motorola's chips. Although IBM has pledged that the new system will eventually run on a variety of machines, it will initially run only computer programs written for Apple's Macintosh or IBM'S OS/2. Its competitive juice now flowing, IBM last week announced that it and Apple Computer will deliver the operating system in 1994 – a year ahead of schedule.

- Q33.** As a result of greater competition in the US Computer industry
- (a) some computer companies are expanding while others are contracting.
 - (b) employment in the industry is going down.
 - (c) the industry is becoming more monopolized.
 - (d) the share value of IBM is going up relative to that of Intel and Microsoft.
- Q34.** Which of the following statements is not implied by the passage?
- (a) The market of microchips and software's are becoming leaders in the computer industry.
 - (b) Wang and Unisys are primarily manufacturers of computers.
 - (c) IBM laying off workers in the biggest job cut in American corporate history.
 - (d) Intel is based in California.
- Q35.** One possible conclusion from the passage is that
- (a) share prices are not a good indicator of a company's performance.
 - (b) firing workers restores a company's health.
 - (c) all companies ultimately regret being a Dr. Frankenstein to some other company.
 - (d) consumers gain as a result of competition among producers.
- Q36.** What was the original reason for the feud between IBM and Microsoft?
- (a) The two companies developed competing software's.

- (b) Microsoft and Intel teamed up against IBM.
- (c) IBM began to purchase microchips from Intel instead of Microsoft.
- (d) IBM made losses while Microsoft made profits.

Q37. Finding of a survey of Systems magazine subscribers: Thirty percent of all merchandise orders placed by subscribers in response to advertisements in the magazine last year were placed by subscribers under age thirty-five. Finding of a survey of advertisers in Systems magazine: Most of the merchandise orders placed in response to advertisements in Systems last year were placed by people under age thirty-five. For both of the findings to be accurate, which of the following must be true?

- (a) More subscribers to Systems who have never ordered merchandise in response to advertisements in the magazine are age thirty-five or over than are under age thirty-five.
- (b) Among subscribers to Systems, the proportion who are under age thirty-five was considerably lower last year than it is now.
- (c) Most merchandise orders placed in response to advertisements in Systems last year were placed by Systems subscribers over age thirty-five.
- (d) Last year many people who placed orders for merchandise in response to advertisements in Systems were not subscribers to the magazine.

Q38. In response to mounting public concern, an airplane manufacturer implemented a program with the well-publicized goal of reducing by half the total yearly amount of hazardous waste generated by its passenger-jet division. When the program began in 1994, the division's hazardous waste output was 90 pounds per production worker; last year it was 40 pounds per production worker. Clearly, therefore, charges that the manufacturer's program has not met its goal are false. Which of the following is an assumption on which the argument depends?

- (a) At least as many passenger jets were produced by the division last year as had been produced in 1994.
- (b) Since 1994, other divisions in the company have achieved reductions in hazardous waste output that are at least equal to that achieved in the passenger-jet division.
- (c) The average number of weekly hours per production worker in the passenger-jet division was not significantly greater last year than it was in 1994.
- (d) The number of production workers assigned to the passenger-jet division was not significantly less in 1994 than it was last year.

We will have to take more interest in hydroelectric projects. As the prices of oil have increased, it has become vital that such renewable sources of energy are tapped.

Q39. The assumption/assumptions of the argument is /are which of the following?

1. Hydro electric power is a renewable source of energy.
2. Hydro electric power is comparatively cheaper.

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q40. Which of the following will weaken the argument?

- (a) Generation of hydroelectric power is more costly than oil.
- (b) OPEC increased oil prices.
- (c) Without energy we cannot manage.
- (d) None of these

Q41. 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. The survey found: 15 had air conditioning, 2 had air conditioning and power windows but no radio, 12 had radio, 6 had air conditioning and radio but no power windows, 11 had power windows, 4 had radio and power windows, 3 had all three

options. What is the n number of cars that had none of the options?

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

Q42. A train starts from Delhi at 6:00AM and reached Ambala Cantt 10:00AM. The other train starts from Ambala Cantt. At 8:00AM and reaches Delhi at 11:30AM. If the distance between Delhi and Ambala cantt. Is 200 km, then at what time did the two trains meet each other?

- (a) 8:56AM (b) 8:46AM
(c) 7:56AM (d) 8:30AM

Q43. A can build up a wall in 8 days while B can break it in 3 days. A has worked for 4 days and then B joined to work with A for another 2 days only. In how many days will A alone build up the remaining part of the wall?

- (a) $13\frac{1}{3}$ days (b) $6\frac{1}{3}$ days
(c) $7\frac{1}{3}$ days (d) 7 days

Q44. In a certain code CHAIR is written as EGCHT. How is AUDIT written in that code?

- (a) CTFHY (b) CSFHV
(c) BTFHV (d) CTEHV

Q45. In a class of 35 students Kiran is placed 7th from the bottom whereas Sohan is placed 9th from the top. Mohan is placed exactly in between the two what is Kiran's position from Mohan?

- (a) 10 (b) 11
(c) 13 (d) 12

Q46. A postman was returning to the post office which was in front of him to the north. When the post office was 100m away from him, he turned to the left and moved 50m to deliver the last letter at Shantivilla. He then moved in the same direction for 40m, turned to his right and moved 100m. How many metres away he was now from the post office?

- (a) 0 (b) 150
(c) 90 (d) 100

Q47. Two spinning machines A and B, can together produce 3,00,000 metres of cloth in 10 hours,

if machine B alone can produce the same amount of cloth in 15 hours, then how much cloth can machine A produce alone in 10 hours?

- (a) 2,00,000 metres
(b) 1,00,000 metres
(c) 1,50,000 metres
(d) 50,000 metres

DIRECTION (Q48 - Q51): study the following information carefully and answer the questions given below.

(i). A, B, C, D, E and F are six members of a group in which there are three female members. Females work in three departments- Accounts, Administration and Personnel and sit on three different persons working in the same department are not on the same floor. On each floor two persons work.

(ii). No two ladies work in the same department or on the same floor. B and E work in the same department but not in personnel. D works in Administration. E and A are on the 1st and 3rd floors respectively and work in the same department. D, a lady does not work on 2nd floor. C, a man works on 1st floor.

Q48. Which of the following groups of person are females?

- (a) ADF (b) CDF
(c) DEF (d) Data inadequate

Q49. Which of the following pairs works on 2nd floor?

- (a) AE (b) BD
(c) BF (d) CF

Q50. Which of the following pairs of persons work in Administration?

- (a) BD (b) CD
(c) CE (d) Data inadequate

Q51. F works in which department?

- (a) Administration
(b) Accounts
(c) Personnel
(d) Accounts or Personnel

- (b) If statement II by itself is sufficient to answer the question, but statement I alone is not sufficient to answer the question.
- (c) If both the statement I and II together are sufficient to answer the question but neither statement by itself is sufficient to answer the question.
- (d) If the two statement, even when taken together, are not sufficient to answer the question.

Q63. Is a given rectangular block, a cube?

Statement I: Atleast 2 faces of the rectangular block are squares.

Statement II: the volume of the block is 64.

Q64. How many marbles are contained in a certain jar?

Statement I: The number of marbles in each group and the number of groups are same.

Statement II: There are more than 140 but fewer than 150 marbles in the jar.

DIRECTION (Q65 - Q66): Read the following information to answer these questions.

Parents of a bride go to a jeweller to buy a diamond ring. The jeweller shows them five different rings D, E, F, G and H. Differences in their prices are as under:

- Ring D costs twice as much as ring E.
- Ring E costs four and half times as much as ring F.
- Ring F costs half as much as ring G.
- Ring G costs half as much as ring H.
- Ring H costs less than ring D but more than ring F.

Q65. Which of the following represents the prices of the rings in ascending order?

- (a) E, G, H, D and F
- (b) D, E, G, H and F
- (c) H, F, G, D and E
- (d) F, G, H, E and D

Q66. If the parents want to buy two rings with the condition that the price difference between the two should be minimal, than which two rings quality for this condition?

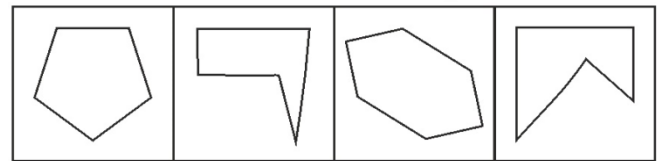
- (a) E & F
- (b) G & H
- (c) H & E
- (d) D & E

Q67. Identify, which number is wrong in the given series.

3, 4, 10, 32, 136, 685, 4116

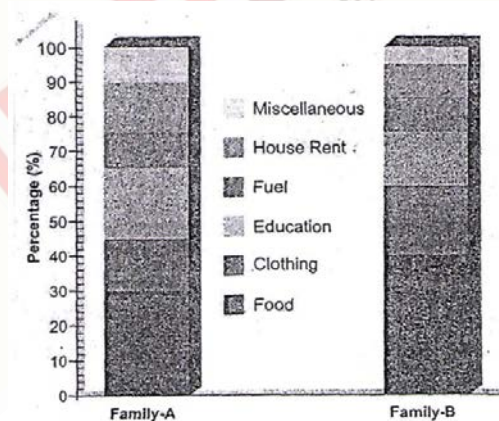
- (a) 136
- (b) 10
- (c) 4116
- (d) 32

Q68. In the question, select the odd one out.



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

Q69. What fraction of the total expenditure is spent on education in family A?



- (a) $\frac{9}{13}$
- (b) $\frac{2}{3}$
- (c) $\frac{13}{21}$
- (d) $\frac{1}{5}$

Q70. If the total expenditure of family B is Rs 10,000 then money spent on clothes by his family during the year is.

- (a) Rs 2000
- (b) Rs 600
- (c) Rs 200
- (d) Rs 6000

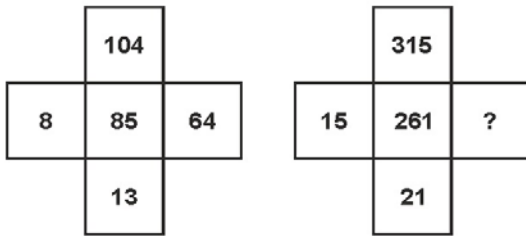
Q71. If the total annual expenditure of family A is Rs 30,000 the money spent on food, clothes and house rent is.

- (a) Rs 21000
- (b) Rs 1800
- (c) Rs 18500
- (d) Rs 15000

Q72. What percentage is B's expenditure on food over A's expenditure on food, taking equal total expenditure?

- (a) 133.33%
- (b) 70%
- (c) 10%
- (d) 75%

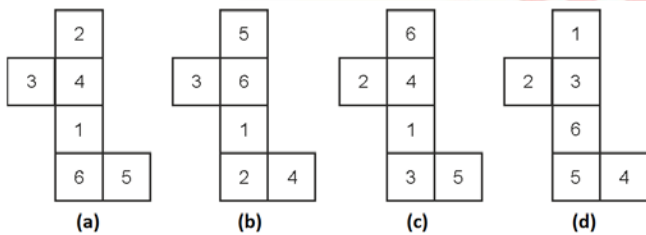
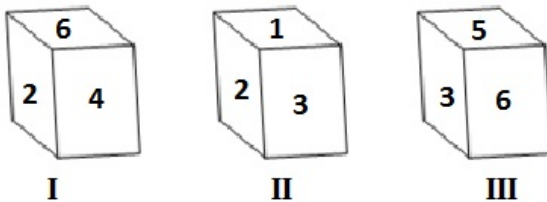
Q73. The numbers have been arranged according to the pattern shown in the sample figure given below. Find the missing figure.



Sample Figure

- (a) 125 (b) 90
(c) 105 (d) 225

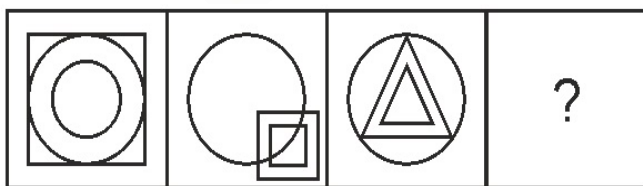
Q74. The six faces of a cube have been marked with numbers 1, 2, 3, 4, 5 and 6 respectively. The cube is rolled down three times. The three positions are given in the figures below. Choose the figure that will be formed when the cube is unfolded.



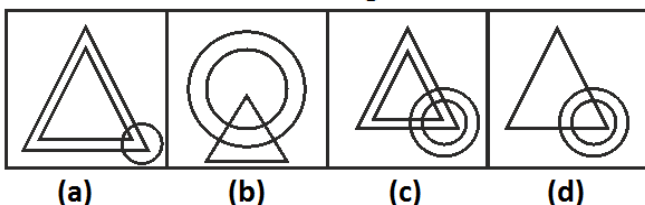
Q75. Today is Thursday. The day after 59 days will be

- (a) Sunday (b) Monday
(c) Tuesday (d) Wednesday

Q76. What will be the figure in?



Answer Figure



Q77. N persons stand on the circumference of a circle at distinct points. Each possible pair of persons, not standing next to each other sings a two-minute song. One pair after the other. If the total time taken for singing is 28 minutes, what is N?

- (a) 5 (b) 7
(c) 9 (d) None of these

Q78. A litre of water evaporated from 6 litres of glucose solution containing 4% glucose. The new concentration of glucose is.

- (a) 4% (b) 5%
(c) 4.8% (d) 5%

DIRECTION (Q79 - Q80): Refer to the data given below and answer the questions that follow.

Ten different samples of milk solution- A, B, C, D, E, F, G, H, I and J were taken and the concentration of each sample (total quantity of milk as a percentage of total quantity of solution) was found out and the results were tabulated as follows:

Sample	A	B	C	D	E
Concentration (%)	78	57	82	84	98

Sample	F	G	H	I	J
Concentration (%)	66	34	87	79	71

Q79. If two samples are taken and the concentration is less than 80% then how many maximum number of distinct pairs of samples are there?

- (a) 10 (b) 15
(c) 30 (d) None of these

Q80. How many distinct three samples are there, which when mixed can give a sample with more than 80% concentration?

- (a) 120 (b) 20
(c) 60 (d) 100