Passage 1

In the 1980's, astronomer Bohdan Paczynski proposed a way of determining whether the enormous dark halo constituting the outermost part of the Milky Way galaxy is composed of MACHO's (massive compact halo objects), which are astronomical objects too dim to be visible. Paczynski reasoned that if MACHO's make up this halo, a MACHO would occasionally drift in front of a star in the Large Magellanic Cloud, a bright galaxy near the Milky Way. The gravity of a MACHO that had so drifted, astronomers agree, would cause the star's light rays, which would otherwise diverge, to bend together so that, as observed from Earth, the star would temporarily appear to brighten, a process known as microlensing. Because many individual stars are of intrinsically variable brightness, some astronomers have contended that the brightening of intrinsically variable stars can be mistaken for microlensing. However, whereas the different colors of light emitted by an intrinsically variable star are affected differently when the star brightens, all of a star's colors are equally affected by microlensing. Thus, if a MACHO magnifies a star's red light tenfold, it will do the same to the star's blue light and yellow light. Moreover, it is highly unlikely that a star in the Large Magellanic Cloud will undergo microlensing more than once, because the chance that a second MACHO would pass in front of exactly the same star is minuscule.

Q1. It can be inferred from the passage that which of the following would constitute the strongest evidence of the microlensing of a star in the Large Magellanic Cloud?

(a) The brightness of such a star is observed to vary at irregular intervals.

(b) The brightening of such a star is observed to be of shorter duration than the brightening of neighboring stars.

(c) The red light of such a star is observed to be brighter than its yellow light and its blue light.

(d) The red light, yellow light, and blue light of such a star are observed to be magnified temporarily by the same factor.

Q2. According to the passage, Paczynski's theory presumes that if MACHO's constituted the Milky Way's dark halo, occasionally a MACHO would

(a) drift so as to lie in a direct line between two stars in the outer Milky Way

(b) affect the light rays of a star in the Large Magellanic Cloud with the result that the star would seem for a time to brighten

(c) temporarily increase the apparent brightness of a star in the Large Magellanic Cloud by increasing the gravity of the star

(d) magnify each color in the spectrum of a star in the Large Magellanic Cloud by a different amount.

Passage 2

When a large body strikes a planet or moon, material is ejected, thereby creating a hole in the planet and a local deficit of mass. This deficit shows up as a gravity anomaly: the removal of material that has been ejected to make the hole results in an area in slightly lower gravity than surrounding areas. One would therefore expect that all of the large multi-ring impact basins on the surface of earth's moon would show such negative gravity anomalies, since they are, essentially, large holes in lunar surface. Yet data collected in 1994 by the Clemenstine spacecraft show that many of these Clementine basins have no anomalously low gravity and some even have anomalously high gravity. **Scientists** speculate that early in lunar history, when large impactors struck the moon's surface, causing millions of cubic kilometers of crustal debris to be ejected, denser material from the moon's mantle rose up beneath the impactors almost immediately, compensating for the ejected material and thus leaving no gravity anomaly in the resulting basin. Later, however, as moon grew cooler and less elastic, rebound from large impactors would have been only partial and incomplete. Thus today such **gravitational compensation** probably would not occur: the outer layer of moon is too cold and stiff.

Q3. According to the passage, the gravitational compensation referred to in the highlighted text is caused by which of the following?

(a) A deficit of mass resulting from the creation of hole in lunar surface.

(b) The gradual cooling and stiffening of the Moon's outer surface.

(c) The ejection of massive amounts of debris from the moon's crust.

(d) The rapid upwelling of material from the lunar mantle.

Q4. The Passage suggests that if the scientists mentioned in the highlighted text are correct in their speculations, the large multi-ring impact basins on the Moon with the most significant negative gravity anomalies probably

(a) were not formed early in the Moon's history

(b) were not formed by the massive ejection of crustal debris

(c) are closely surrounded by other impact basins with anomalously low gravity

(d) were formed when the moon was relatively elastic

Q5. The passage is primarily concerned with

(a) analyzing data from a 1994 exploration of lunar surface

(b) reconciling two opposing theories about the origin of lunar impact basins

(c) presenting a possible explanation of a puzzling finding about lunar impact basins

(d) discussing how impact basins on the Moon's surface are formed

Passage 3

The system of patent-granting, which confers temporary monopolies for the exploitation of new technologies, was originally established as an incentive to the pursuit of risky new ideas. Yet studies of the most patent-conscious business of all—the semiconductor industry, suggests that firms do not necessarily become more innovative as they increase their patenting activity. Ziedonis and Hall, for example, found that investment in research and development (a reasonable proxy for innovation) did not substantially increase between 1982 and 1992, the industry's most feverish period of patenting. Instead, semiconductor firms simply squeezed more patents out of existing research and development expenditures. Moreover, Ziedonis and Hall found that as patenting activity at semiconductor firms increased in the 1980's, the consensus among industry employees was that the average quality of their firms' patents declined. Though patent quality is a difficult notion to measure, the number of times a patent is cited in the technical literature is a reasonable yardstick, and citations per semiconductor patent did decline during the 1980's. This decline in quality may be related to changes in the way semiconductor firms managed their patenting process: rather than patenting to win exclusive rights to a valuable new technology, patents were filed more for strategic purposes, to be used as bargaining chips to ward off infringement suits or as a means to block competitors' products.

Q6. The passage is primarily concerned with discussing

(a) a study suggesting that the semiconductor industry's approach to patenting during the period from 1982 to 1992 yielded unanticipated results.

(b) a study of the semiconductor industry during the period from 1982 to 1992 that advocates certain changes in the industry's management of the patenting process.

(c) the connection between patenting and innovation in the semiconductor industry during the period from 1982 to 1992.

(d) reasons that investment in research and development in the semiconductor industry did not increase significantly during the period from 1982 to 1992.

Q7. The passage suggests that the use of patents as bargaining chips to ward off infringement suits

(a) became increasingly infrequent in the 1980s

(b) does not fulfill the intended purpose of the patent granting system

(c) is a consequence of the decline in patent quality

(d) is discussed increasingly in the semiconductor industry's technical literature

Q8. Which of the following, if true, would most clearly serve to weaken the author's claim about what constitutes a reasonable yardstick for measuring patent quality?

(a) It is more difficult to have an article accepted for publication in the technical literature of the semiconductor industry than it is in the technical literature of most other industries.

(b) Many of the highest-quality semiconductor patents are cited numerous times in the technical literature.

(c) It is difficult for someone not familiar with the technical literature to recognize what constitutes an innovative semiconductor patent.

(d) Low-quality patents tend to be discussed in the technical literature as frequently as high-quality patents.

Q9. The primary purpose of the passage is to

(a) suggest revisions to the standard theory of the evolutionary history of birds

(b) evaluate the usefulness of fossil evidence in determining the evolutionary history of birds

(c) challenge the theory that birds evolved from ground-dwelling theropod dinosaurs

(d) respond to criticisms of the theory that birds evolved from ground-dwelling theropod dinosaurs

Q10. In the context of the passage, the phrase "fossils of a predicted kind" most likely refers to which of the following?

(a) Theropod fossils with fused clavicles

(b) Theropod fossils that are similar in structure to Archaeopteryx fossils

(c) Theropod fossils dating back more than 150 million years

(d) Fossils indicating the structure of theropod lungs

Q11. Which of the following is mentioned in the passage as an argument made by scientists who are unconvinced that birds evolved from theropod dinosaurs?

(a) There are no known theropod dinosaur fossils dating from a period after the time of Archaeopteryx.

(b) There are no known theropod dinosaur fossils that indicate the structure of those dinosaurs' lungs.

(c) Theropod dinosaurs appear in the fossil record about 150 million years ago.

(d) Theropod dinosaurs did not have fused clavicles.

Passage 5

The term "episodic memory" was introduced by Tulving to refer to what he considered a uniquely human capacity—the ability to recollect specific past events, to travel back into the past in one's own mind—as distinct from the capacity simply to use information acquired through past experiences. Subsequently, Clayton et al. developed criteria to test for episodic memory in animals. According to these criteria, episodic memories are not of individual bits of information; they involve multiple components of a single event "bound" together. Clayton sought to examine evidence of scrub jays' accurate memory of "what,""where," and "when" information and their binding of this information. In the wild, these birds store food for retrieval later during periods of food scarcity. Clayton's experiment required jays to remember the type, location, and freshness of stored food based on a unique learning event. Crickets were stored in one location and peanuts in another. Jays prefer crickets, but crickets degrade more quickly. Clayton's birds switched their preference from crickets to peanuts once the food had been stored for a certain length of time, showing that they retain information about the what, the where, and the when. Such experiments cannot, however, reveal whether the birds were re experiencing the past when retrieving the information. Clayton acknowledged this by using the term "episodic-like" memory.

Q12. The primary purpose of the passage is to

(a) explain how the findings of a particular experiment have been interpreted and offer an alternative interpretation

(b) describe a particular experiment and point out one of its limitations

(c) present similarities between human memory and animal memory

(d) point out a flaw in the argument that a certain capacity is uniquely human

Q13. According to the passage, Clayton's experiment depended on the fact that scrub jays

(a) recall "when" and "where" information more distinctly than "what" information

(b) choose peanuts over crickets when the crickets have been stored for a long period of time

(c) choose crickets over peanuts whenever both are available

(d) prefer peanuts that have been stored for a short period to crickets that have been stored for a short period

Q14. It can be inferred from the passage that both Tulving and Clayton would agree with which of the following statements?

(a) Animals' abilities to use information about a specific past event are not conclusive evidence of episodic memory.

(b) Animals do not share humans' abilities to re-experience the past through memory.

(c) The accuracy of animals' memories is difficult to determine through direct experimentation.

(d) Humans tend to recollect single bits of information more accurately than do animals.

Passage 6

Many managers are influenced by dangerous myths about pay that lead to counterproductive decisions about how their companies compensate employees. One such myth is that labor rates, the rate per hour paid to workers, are identical with labor costs, the money spent on labor in relation to the productivity of the labor force. This myth leads to the assumption that a company can simply lower its labor costs by cutting wages. But labor costs and labor rates are not in fact the same: one company could pay its workers considerably more than another and yet have lower labor costs if that company's productivity were higher due to the talent of its workforce, the efficiency of its work processes, or other factors. The confusion of costs with rates persists partly because labor rates are a convenient target for managers who want to make an impact on their company's budgets. Because labor rates are highly visible, managers can easily compare their company's rates with those of competitors. Furthermore, labor rates often appear to be a company's most malleable financial variable: cutting wages appears an easier way to control costs than such options as reconfiguring work processes or altering product design.

The myth that labor rates and labor costs are equivalent is supported by business journalists, who frequently confound the two. For example, prominent business journals often remark on the "high" cost of German labor, citing as evidence the average amount paid to German workers. The myth is also perpetuated by the compensation consulting industry, which has its own incentives to keep such myths alive. First, although some of these consulting firms have recently broadened their practices beyond the area of compensation, their mainstay continues to be advising companies on changing their compensation practices. Suggesting that a company's performance can be improved in some other way than by altering its pay system may be empirically correct but contrary to the consultants' interests. Furthermore, changes to the compensation system may appear to be simpler to implement than changes to other aspects of an organization, so managers are more likely to find such advice from consultants palatable. Finally, to the extent that changes in compensation create new problems, the consultants will continue to have work solving the problems that result from their advice.

Q15. The passage suggests that the "myth" mentioned in the highlighted text persists partly because

(a) managers find it easier to compare their companies' labor rates with those of competitors than to compare labor costs

(b) managers tend to assume that labor rates affect their companies' budgets less than they actually do

(c) managers tend to believe that labor rates can have an impact on the efficiency of their companies' work processes

(d) many companies fail to rely on compensation consultants when making decisions about labor rates

Q16. It can be inferred from the passage that the author would be most likely to agree with which of the following statements about compensation?

(a) A company's labor costs are not affected by the efficiency of its work processes.

(b) High labor rates are not necessarily inconsistent with the goals of companies that want to reduce costs.

(c) It is more difficult for managers to compare their companies' labor rates with

those of competitors than to compare labor costs.

(d) Managers often use information about competitors' labor costs to calculate those companies' labor rates.

Q17. According to the passage, which of the following is true about changes to a company's compensation system?

(a) They are often implemented in conjunction with a company's efforts to reconfigure its work processes.

(b) They have been advocated by prominent business journals as the most direct way for a company to bring about changes in its labor costs.

(c) They are more likely to result in an increase in labor costs than they are to bring about competitive advantages for the company.

(d) They may seem to managers to be relatively easy to implement compared with other kinds of changes managers might consider.

Passage 7

Beliefs' soften the hardships, even can make them pleasant. In God, man can find very strong consolation and support. Without Him, man has to depend upon himself. At testing moments, vanity, if any, evaporates and man cannot dare to defy the general beliefs; if he does, then we must conclude that he has got certain other strengths than mere vanity. This is exactly the situation now. Judgment is already too well known. Within a week it is to be pronounced. What is the consolation with the exception of the idea that I am going to sacrifice my life for a cause? A God-believing Hindu might be expecting to be reborn as a king, a Muslim or a Christian might dream of the luxuries to be enjoyed in paradise and the reward he is to get for his sufferings and sacrifices. But what am I to expect? I know the moment the rope is fitted round my neck and rafters removed, from under my feet: that will be the final moment, that will be the last moment. I, or to be more precise, my soul, as interpreted in the metaphysical terminology, shall all be finished there. Nothing further.

A short life of struggle with no such magnificent end shall in itself be the reward if I have the courage to take it in that light. That is all. With no selfish motive or desire to be awarded here or hereafter, quite disinterestedly have I devoted my life to the cause of independence, because I could not do otherwise. The day we find a great number of men and women with this psychology who cannot devote themselves to anything else than the service of mankind and emancipation of the suffering humanity – that day shall inaugurate the era of liberty.

Not to become a king, nor to gain any other rewards here, or in the next birth or after death in paradise, shall they be inspired to challenge the oppressors, exploiters, and tyrants, but to cast off the yoke of serfdom from the neck of humanity and to establish liberty and peace shall they tread this – to their individual selves perilous and to their noble selves the only glorious imaginable path. Is the pride in their noble cause to be misinterpreted as vanity? Who dares to utter such an abominable epithet? To him, I say either he is a fool or a knave. Let us forgive him for he cannot realize the depth, the emotion, the sentiment and the noble feelings that surge in that heart. His heart is dead as a mere lump of flesh, his eyes are weak, the evils of other interests having been cast over them. Self-reliance is always liable to be interpreted as vanity. It is sad and miserable but there is no help.

You go and oppose the prevailing faith, you go and criticize a hero, a great man, who is generally believed to be above criticism because he is thought to be infallible, the strength of your argument shall force the multitude to decry you as vainglorious. This is indispensable qualities of a revolutionary. Because Mahatmaji is great, therefore none should criticize him. Because he has risen above, therefore everything he says – may be in the field of politics or religion, economics or ethics – is right. Whether you are convinced or not you must say, "Yes. That's true". This mentality does not lead towards progress. It is rather too obviously, reactionary.

Q18. Which of the following statements BEST captures the essence of the passage?

(a) When we criticize a great man like Mahatmaji, we are motivated by arrogance and a desire to question anything good through meaningless arguments.

(b) All human beings ought to desist from believing anything in order to be able to achieve something meaningful.

(c) The author is trying to present his defense for not believing in the existence of God, even though it is probably more convenient to do so, than going against the generally accepted norms of the society.

(d) It is wrong to believe in God for achieving kingship or for rewards in this world, or for paradise after death, and instead, one should believe in God without expecting anything in return.

Q19. Which one of the following statements can be deduced from the above passage?

(a) Individuals who neither believe in God nor in the infallibility of great men are arrogant.

(b) Belief is convenient as it even makes a hard reality at present more bearable because of a promise of a better future.

(c) Only some individuals are able to attain greatness and by following them uncritically the society can make significant progress

(d) If you do not believe in God, then you can never hope to achieve anything great in life.

Q20. Which of the following statements is NOT TRUE as per the passage?

(a) Pride in a noble cause should not be interpreted as vanity

(b) Service to mankind is the ultimate path to freedom.

(c) Criticizing heroes and great men can lead to progress.

(d) The author is upset because he has nothing to expect in the afterlife

Passage 8

The starting point for our discussion is the common view expressed in the saying "Necessity is the mother of invention." That is, inventions supposedly arise when a society has an unfulfilled need. Would-be inventors, motivated by the prospect of money or fame, perceive the need and try to meet it. Some inventor finally comes up with a solution superior to an existing, unsatisfactory technology. Society adopts the solution if it is compatible with the society's values and other technologies. Some inventions do conform to this commonsense view of necessity as inventions' mother. "Eli Whitney's 1794 invention of a cotton gin to replace laborious hand cleaning of cotton, and James Watt's 1769 invention of steam engine to solve the problem of pumping out water out of British coal mines were some such instances. These familiar examples deceive us into assuming that other major inventions were also responses to perceived needs. In fact, many or most inventions were developed by people driven by curiosity or by a love of tinkering, in the absence of any initial demand for the product they had in mind. Once a device had been invented, the inventor then had to find an application for it. Only after it had been in use for a considerable time did consumers come to feel that they 'needed' it. Still other devices, invented to serve one purpose, eventually found most of their use for other, unanticipated purposes. Some inventions in search of an initial use included most of the major technological breakthroughs of modern times, including the airplane, the automobile, internal combustion engine, electric light bulb, the phonograph and transistor. Thus, invention is often the mother of necessity, rather than vice versa. For example, when Edison built his first phonograph in 1877, he published an article listing ten uses to which his invention might be put. Reproduction of music did not figure high on that list. Only after 20 years did Edison reluctantly concede that the main use of his phonograph was to play and record music. Again, when Nikolaus Otto built his first gas engine, in 1866, horses had been supplying people's land transportation needs for nearly 600 years, supplemented increasingly by steam-powered railroads, for several decades. There was no crisis in the availability of horses, no dissatisfaction with railroads. In 1896, Gottfried Daimler built the first truck. In 1905, motor vehicles were still expensive, unreliable toys for the rich. Public contentment with horses and railroads remained high until World War I, when the military concluded that it really did need trucks. Intensive postwar lobbying by truck manufacturers and armies finally convinced the public of its own needs and enabled trucks to begin to supplant horse drawn wagons in industrialized countries. Thus the commonsense view of invention that served as our starting point reverses the role of invention and need, and probably overstates the importance of rare geniuses such as Watt and Edison. That "heroic theory of invention" is encouraged by patent law, because an applicant for a patent must prove the

novelty of the invention submitted. Inventors thereby have a financial incentive to denigrate or ignore previous work. In truth, technology develops cumulatively, and through the inventions and improvements of many predecessors and successors, rather than in isolated heroic acts, and it finds most of its uses after it has been invented, rather than being invented to meet a foreseen need.

Q21. According to the passage:

(a) airplanes and automobiles were invented out of curiosity.

(b) curiosity and necessity are the main obstacles for invention

(c) the applications of an invention are often not apparent immediately

(d) society helps to fulfill an inventor's need for money and fame.

Q22. The last sentence of the passage implies that:

(a) the author does not believe in the concept of "heroic inventions".

(b) an invention does not always have to be in response to some perceived need.

(c) isolated heroic acts do not give rise to inventions.

(d) initial inventors are never recognized.

Q23. The MOST APPROPRIATE title for the passage would be:

(a) Mother of Necessity

(b) Inventors or Villains?

(c) The Heroic Theory of Invention

(d) Inventions, not Necessities

Q24. Which of the following statements is INCORRECT as per the given passage?

(a) Patent laws facilitate unnecessary inventions.

(b) Inventions give rise to needs in society.

(c) Curiosity is the mother of invention.

(d) The military helped to popularize the use of trucks.

Passage 9

Let us take a look at the pressures building up. To start off, there is the long term rise in the cost of energy. Every time the cost of transportation goes up, employers are compelled to increase wages accordingly. They may resist for a time, but if they want their workers to show up, they eventually have to provide a transportation subsidy. It is built right into the wage structure.

Next, the entire system of commuting implies hidden costs. Companies that bring employees to a central location wind up paying more for real estate; they pay higher taxes, maintenance costs and salaries. They often have to provide cafeterias, locker rooms, and in suburban locations, parking facilities – there is a whole infrastructure that supports the commuting process. All of these costs have been skyrocketing.

By contrast, as we all know, the cost of telecommunications and computing and video equipment, and other tools for "telecommuting" are plummeting. So you have two powerful economic curves about to intersect. But even more importantly, we all worry about productivity. Without doubt, the single most *anti productive* thing that we do is to shift millions of people back and forth across the landscape everyday. A waste of time, of human creativity, of millions of barrels of non-renewable fuel, a cause of pollution, crowding and god knows what else.

We worry about the human effects of home-work. But how human is commuting itself? For most workers commuting is the unpaid part of the job, being isolated for hours at a time. Commuting was important when most workers had to handle physical goods in factories. Today, as the Third Wave industries expand, many workers travel to work to handle information, ideas, numbers, programs, formulas, designs and symbols and it is a lot cheaper to move the information to the workers than the workers to the information.

There are all kinds of parallel cultural and value shifts as well that support the idea. The new emphasis is on revived family life. The decentralist push – nothing is more decentralized than working at home. The resistance to forced mobility – you do not have to move your family when you change your job. Environmental concern – nothing pollutes more than centralized production.

Add all these pressures together, and you understand why this transfer of certain jobs into the home seems so likely. Moreover, you have to see this development not by itself, but as linked to the de-massification of production and distribution;

decentralization towards the regions; rising importance of information; the appearance of wholly new, unprecedented industries; the breakdown of national tools for economic regulation or management, and the rising importance of co-production and non-market production.

We are restructuring the economy on all these fronts at once. No wonder our economic vocabulary is outdated. No wonder our economic maps no longer reflect the terrain. A new Third Wave economy is taking shape.

Q25. The above passage DOES NOT talk about:

(a) The essential nature of commuting.

(b) Additive costs of commuting.

(c) Changing nature of social values.

(d) Rise of the knowledge economy.

Q26. Which of the following can be the MOST APPROPRIATE title for the passage?

(a) To Commute or to Produce?

(b) The future of work

(c) The "Third Wave Economy"

(d) In support of "home-work"

Q27. Which of the following statements can be deduced from the given passage?

(a) Rise in transportation costs leads to loss in productivity.

(b) Commuting is the least productive aspect of today's economy.

(c) Renewed emphasis on family life is pushing down telecommuting costs.

(d) Physical production in factories has been replaced by information, design and symbols.

Q28. As per the passage, which of the following is NOT a reason for working from home?

(a) increasing energy costs

(b) decreasing telecommuting costs

(c) increasing levels of social diversity

(d) regional decentralization

Passage 10

Evolutionary relationships are also genealogical, not primarily functional. We all understand that whales are mammals by history of common descent, not fishes because they swim in the ocean. In genealogical terms, closeness is defined by position in a sequence of branchings – what Darwin called "propinquity", or relative nearness. I may look and act more like my cousin Bob than my brother Bill, but Bill is still closer to me by genealogy. Function and appearance need not correlate strongly with genealogical propinquity. Evolutionists have described the genealogical relationships among trout, lungfishes and cows in the following manner. Terrestrial vertebrates branched off the line of early fishes at a point near the ancestry of modern lungfishes; trout evolved much later from a persisting earlier lines of fishes. Therefore, if we chose to classify purely by genealogy, lung fishes and cows must be placed together in a group separate from trout. Many of us rebel against such an idea because our conventional classifications mix functional and strictly genealogical relationship. We may say, "A lungfish looks like a fish, swims like a fish, acts like a fish, and tastes like a fish. Therefore it is a fish." Perhaps so; but by propinquity, lungfishes are closer to cows.

This issue now pervades the science of systematics as the great debate about "cladism". Cladists advocate classification by pure genealogy (branching order), with no attention what so ever to traditional concepts of similarity in function or biological role. However, we need only carry away the lesson that genealogical and functional similarity are different concepts, and that we can be terribly fooled when we make a mistaken equation – particularly when we assume a closeness in branching (propinquity) from evidence of common appearance or behavior.

If we call a whale a fish, we make a simple error by misunderstanding the evolutionary phenomenon of "convergence". The fish like characters of whales evolved separately and independently in a line derived from fully terrestrial vertebrates. But the fishy similarities of trout and lungfishes are genuine evolutionary marks of common ancestry. These similarities do not forge a closer genealogical bond between lungfish and trout than between lungfish and cow because such shared features are common characters of *all* early vertebrates; propinquity is marked by shared characters of later derivation. For example, the character "five fingers" cannot be used to unite humans and dogs while placing seals in another group for dogs and seals are genealogically close as members of the order Carnivora. The

position of five fingers is a shared character of all ancestral mammals; such traits cannot help us make divisions *within* later mammalian evolution.

Q29. As per the given passage, a "Cladist" is one who:

(a) Acknowledges the distinction between genealogical and functional similarities.

(b) Debates at length on the science of systematics.

(c) Groups animals by propinquity.

(d) Describes genealogical relationships between mammals and fish.

Q30. Which of the following options is NOT TRUE as per the above passage?

(a) Evolutionary relationships have their basis in functional similarities.

(b) Lungfishes and trouts belong to the same common ancestry.

(c) Genealogical branching gives rise to propinquity.

(d) Dogs and seals are genealogically closer compared to lungfish and trout.

Q31. Which of the following options can be BEST deduced from the passage?

(a) There is no such thing as functional similarity.

(b) Behavioral similarities in the animal kingdom point to a common ancestry.

(c) The phenomenon of "convergence" can best explain the basis of all evolutionary relationships.

(d) Genealogical propinquity need not follow from functional similarity.

Passage 12

Now let us turn back to inquire whether sending our capital abroad, and consenting to be taxed to pay emigration fares to get rid of the women and men who are left without employment in consequence, is all that capitalism can do when our employers, who act for our capitalists in industrial affairs, and are more or less capitalists themselves in the earlier stages of capitalistic development, find that they can sell no more of their goods at a profit, or indeed at all, in their own country.

Clearly they cannot send abroad the capital they have already invested, because it has all been eaten up by the workers, leaving in its place factories and railways and mines and the like; and these cannot be packed into a ship's hold and sent to Africa. It is only the freshly saved capital that can be sent out of the country. This, as we have seen, does go abroad in heaps of finished products. But the British land held by him on long lease, must, when once he has sold all the goods at home that his British customers can afford to buy, either shut up his works until the customers have worn out their stock of what they have bought, which would bankrupt him (for the landlord will not wait), or else sell his superfluous goods somewhere else; that is, he must send them abroad. Now it is not easy to send them to civilized countries, because they practice Protection, which means that they impose heavy taxes (customs duties) on foreign goods. Uncivilized countries, without Protection, and inhabited by natives to whom gaudy calicoes and cheap showy brassware are dazzling and delightful novelties, are the best places to make for at first.

But trade requires a settled government to put down the habit of plundering strangers. This is not a habit of simple tribes, who are often friendly and honest. It is what civilized men do where there is no law to restrain them. Until quite recent times it was extremely dangerous to be wrecked on our own coasts, as wrecking, which meant plundering wrecked ships and refraining from any officious efforts to save the lives of their crews, was a well-established business in many places on our shores. The Chinese still remember some astonishing outbursts of looting perpetrated by English ladies of high position, at moments when law was suspended and priceless works of art were to be had for the grabbing. When trading with aborigines begins with the visit of a single ship, the cannons and cutlasses carried may be quite sufficient to overawe the natives if they are troublesome. The real difficulty begins when so many ships come that a little trading station of white men grows up and attracts the white ne'er-do-wells and violent roughs who are always being squeezed out of civilization by the pressure of law and order. It is these riff-raff who turn the place into a sort of hell in which sooner or later missionaries are murdered and traders plundered. Their home governments are appealed to put a stop to this. A gunboat is sent out and inquiry made. The report after the inquiry is that

there is nothing to be done but set up a civilized government, with a post office, police, troops and the navy in the offing. In short, the place is added to some civilized Empire. And the civilized taxpayer pays the bill without getting a farthing of the profits.

Of course the business does not stop there. The riff-raff who have created the emergency move out just beyond the boundary of the annexed territory, and are as great a nuisance as ever to the traders when they have exhausted the purchasing power of the included natives and push on after fresh customers. Again they call on their home government to civilize a further area; and so bit by bit the civilized Empire grows at the expense of the home taxpayers, without any intention or approval on their part, until at last although all their real patriotism is centered on their own people and confined to their own country, their own rulers, and their own religious faith; they find that the centre of their beloved realm has shifted to the other hemisphere. That is how we in the British Islands have found our centre moved from London to the Suez Canal, and are now in the position that out of every hundred of our fellow-subjects, in whose defense we are expected to shed the last drop of our blood, only 11 are whites or even Christians. In our bewilderment some of us declare that the Empire is a burden and a blunder, whilst others glory in it as a triumph. You and I need not argue with them just now, our point for the moment being that, whether blunder or glory, the British Empire was quite unintentional. What should have been undertaken only as a most carefully considered political development has been a series of commercial adventures thrust on us by capitalists forced by their own system to cater to foreign customers before their own country's needs were one-tenth satisfied.

Q32. It may be inferred that the passage was written

(a) when Britain was still a colonial power.

(b) when the author was in a bad mood.

(c) when the author was working in the foreign service of Britain.

(d) when the author's country was overrun by the British.

Q33. According to the author, the habit of plundering the strangers

(a) is usually not found in simple tribes but civilized people.

(b) is usually found in the barbaric tribes of the uncivilized nations.

(c) is a habit limited only to English ladies of high position.

(d) is a usual habit with all white-skinned people.

Q34. Which of the following may be called the main complaint of the author?

(a) The race of people he belongs to are looters and plunderers.

(b) The capitalists are taking over the entire world.

(c) It is a way of life for English ladies to loot and plunder.

(d) The English taxpayer has to pay for the upkeep of territories he did not want.

Q35. Why do the capitalistic traders prefer the uncivilized countries to the civilized ones?

(a) Because they find it easier to rule them.

(b) Because civilized countries would make them pay protection duties.

(c) Because civilized countries would make their own goods.

(d) Because uncivilized countries like the cheap and gaudy goods of bad quality all capitalists produce.

Passage 13

Governments looking for easy popularity have frequently been tempted into announcing give-aways of all sorts; free electricity, virtually free water, subsidised food, cloth at half price, and so on. The subsidy culture has gone to extremes. The richest farmers in the country get subsidised fertiliser. University education, typically accessed by the wealtier sections, is charged at a fraction of cost. Postal services are subsidised, and so are railway services. Bus fares cannot be raised to economical levels because there will be violent protests, so bus travel is subsidised too. In the past, price control on a variety of items, from steel to cement, meant that industrial consumers of these items got them at less than actual cost, while the losses of the public sector companies that produced them were borne by the taxpayer! A study, done a few years ago, came to the conclusion that subsidies in the Indian economy total as much as 14.5 per cent of gross domestic

product. At today's level, that would work out to about Rs. 1,50,000 crore.

And who pays the bill? The theory — and the political fiction on the basis of which it is sold to unsuspecting voters — is that subsidies go to the poor, and are paid for by the rich. The fact is that most subsidies go to the 'rich' (defined in the Indian context as those who are above the poverty line), and much of the tab goes indirectly to the poor. Because the hefty subsidy bill results in fiscal deficits, which in turn push up rates of inflation — which, as everyone knows, hits the poor the hardest of all. Indeed, that is why taxmen call inflation the most regressive form of taxation.

The entire subsidy system is built on the thesis that people cannot help themselves, therefore governments must do so. That people cannot afford to pay for a variety of goods and services, and therefore the government must step in. This thesis has been applied not just in the poor countries but in the rich ones as well; hence the birth of the welfare state in the West, and an almost Utopian social security system; free medical care, food aid, old age security, et al. But with the passage of time, most of the wealthy nations have discovered that their economies cannot sustain this social safety net, which infact reduces the desire among people to pay their own way, and takes away some of the incentive to work. In short, the bill was unaffordable, and their societies were simply not willing to pay. To the regret of many, but because of the laws of economics are harsh, most Western societies have been busy pruning the welfare bill.

In India, the lessons of this experience — over several decades, and in many countries — do not seem to have been learnt. Or, they are simply ignored in the pursuit of immediate votes. People who are promised cheap food or clothing do not in most cases look beyond the gift horses — to the question of who picks up the tab. The uproar over higher petrol, diesel and cooking gas prices ignored this basic question: if the user of cooking gas does not want to pay for its cost, who should pay? Diesel in the country is subsidised, and if the trucker or owner of a diesel generator does not want to pay for its full cost, who does he or she think should pay the balance of the cost? It is a simple question, nevertheless it remains unasked.

The Deve Gowda government has shown some courage in biting the bullet when it comes to the price of petroleum products. But it has been bitten by a much bigger subsidy bug. It wants to offer food at half its cost to everyone below the poverty line, supposedly estimated at some 380 million people. What will be the cost? And, of course, who will pick up the tab? The Andhra Pradesh Government has been bankrupted by selling rice at Rs. 2 per kg. Should the Central Government be bankrupted too, before facing up to the question of what is affordable and what is not? Already, India is perenially short of power because the subsidy on electricity has bankrupted most electricity boards, and made private investment wary unless it gets all manner of state guarantees. Delhi's subsidised bus fares have bankrupted the Delhi Transport Corporation., whose buses have slowly disappeared from the capital's streets. It is easy to be soft and sentimental, by looking at programmes that will be popular. After all, who doesn't like a free lunch? But the evidence is surely mounting that the lunch isn't free at all. Somebody is paying the bill. And if you want to know who, take a look at the country's poor economic performance over the years.

Q36. The statement that subsidies are paid for by the rich and go to the poor is

(a) fiction

(b) fact

(c) fact, according to the author

(d) fiction, according to the author

Q37. Why do you think that the author calls the Western social security system Utopian?

(a) The countries' belief in the efficacy of the system was bound to turn out to be false.

(b) The system followed by these countries is the best available in the present context.

(c) Every thing under this system was supposed to be free but people were charging money for them.

(d) The theory of system followed by these countries was devised by Dr Utopia.

Q38. It can be inferred from the passage that the author

(a) believes that people can help themselves and do not need the government.

(b) believes that the theory of helping with subsidy is destructive.

(c) believes in democracy and free speech.

(d) is not a successful politician.

In each group of questions below are two/three statements followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and then decide which of the given conclusions logically follows from the two/ three statements disregarding commonly known facts.

Q39. Statements: **Some symbols are figures. All symbols are graphics. No graphic is a picture.**

Conclusions I: Some graphics are figures.

Conclusions II: No symbol is a picture.

(a) if only conclusion I follows;

(b) if only conclusion II follows;

(c) if either conclusion I or conclusion II follows;

(d) if both I and conclusion II follows.

Q40. Statements: **All vacancies are jobs. Some jobs are occupations.**

Conclusions I: All vacancies are occupations.

Conclusions II: All occupations being vacancies is a possibility.

(a) if only conclusion I follows;

(b) if only conclusion II follows;

(c) if either conclusion I or conclusion II follows;

(d) if both I and conclusion II follows.

Q41. A person travels 285 km in 6 hrs. In the first part of the journey, he travels by bus at the speed of 40 km/hr. In the second part of the journey, he travels by train at the speed of 55 km/hr. How much distance does he travel by train?

(a) 165 km **(b)** 145 km

(c) 205 km **(d)** 185 km

Q42. In a class, 18 students took, Physics, 23 students tool Chemistry and 24 students took Mathematics. Of these 13 took both Chemistry and Mathematics, 12 took both Physics and Chemistry and 11 took both Physics and Mathematics. If 6 students offered all the three subjects, find total number of students in the class, how many took Mathematics but not Chemistry, how many took exactly one of the 3 subjects?

(a) 35, 11 and 10 **(b)** 35, 10 and 11

(c) 35, 11 and 11 **(d)** None of these

Q43. The pendulum of a clock, takes 7 second to strike 4 o' clock. How much time will it take to strike 11 o' clock?

(a) 18 second **(b)** 20 second

(c) 19.25 second **(d)** 23.33 second

DIRECTION (Q44 - Q45): Answer the questions based on the following information.

Eighty Five children went to an amusement park where they could ride at least one of the rid Merry-go-round, Roller Coaster and Ferris wheel. It was known that 20 of them took all three rides and 55 of them took atleast two of the three rides.

Q44. How many children took exactly one ride?

(a) 5 **(b)** 10

(c) 15 **(d)** 30

Q45. How many children took exactly two rides?

(a) 25 **(b)** 35

(c) 45 **(d)** 40

Q46. One red flag, three white flags and two blue flags are arranged in a line such that no two adjacent flags are of the same colour and the flags at two ends of the line are of different colours. In how many different ways can the flags be arranged?

(a) 6 **(b)** 4

(c) 10 **(d)** 2

Q47. Three labelled boxes containing red and white cricket balls are all mislabelled. It is known that one of the boxes contains only white balls and one only red balls. The third contains a mixture of red and white balls. You are required to correctly label the boxes with the labels red, white and red and white by picking a sample of one ball from only one box. What is the label on the box you should sample?

(a) White

(b) red

(c) Red and White

(d) Not possible to determine from a sample of one ball.

DIRECTION (Q48 - Q49): Read the information given below and answer the questions that follow.

Amit has an electric shop and he sells only electric lamps and bulbs. He is not capable of investing more than Rs 1800. Maximum capacity of his godown is 50 articles. Cost of one lamp is Rs 60 while that of one bulb is Rs 20. Probable profit on one lamp is Rs 10 and that of one bulb is Rs 4. All articles are sold in one day.

Q48. How many lamps and bulbs should be purchased for maximum profit?

(a) 20 lamps only

(b) 20 lamps and 30 bulbs

(c) 50 bulbs only

(d) 5 lamps and 45 bulbs

Q49. Maximum profit earned in one day by Amit is

(a) Rs 200 **(b)** Rs 500

(c) Rs 1000 **(d)** Rs 320

Q50. Sama wants to buy 19 balloons for a party of these most balloons need to be red, 11 need to be blue or yellow, at least one needs to be pink. How many pink balloons can Sama buy?

(a) 4 **(b)** 3

(c) 2 **(d)** 1

Q51. How many numbers can be formed from 1, 2, 3, 4, 5 (without repetition), when the digit at the unit's place must be greater than in the ten's place?

(a) 54 **(b)** 60

(c) 17 **(d)** 2x41

Q52. Five-digit numbers are formed using only 0, 1, 2, 3, 4 exactly once. What is the difference between the greatest and smallest numbers that can be formed?

(a) 19800 **(b)** 41976

(c) 32976 **(d)** None of these

Q53. A shipping clerk has five boxes of different but unknown weight each weighting less than 100 kg. The clerk weights the boxes in pairs. The weights obtained are 110, 112, 113, 114, 115, 116, 117, 118, 120 and 121 kg. What is the weight of the heaviest box?

(a) 60 kg

(b) 62 kg

(c) 64 kg

(d) cannot be determined

Q54. In a race of 200m run, A beats S by 20m and N by 40m. If S and N are running a race of 100m with exactly same speed as before, then by how many meters will S beat N?

(a) 11:11m **(b)** 10m

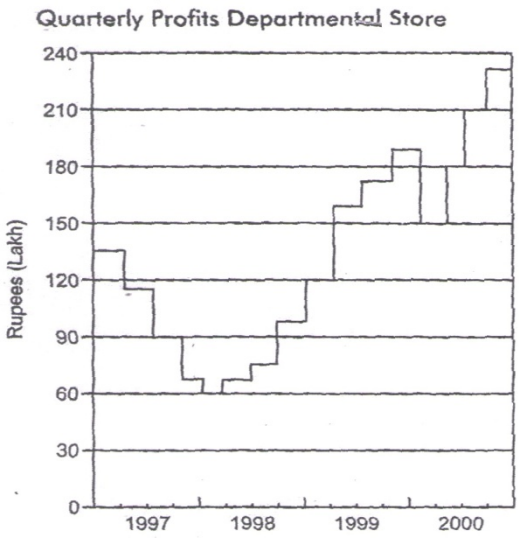
(c) 12m **(d)** 25m

Q55. A group of men decided to do a job in 8 days. But since 10 men dropped out every day, the job got completed at the end of the 12th day. How many men were there at the beginning?

(a) 165 **(b)** 175

(c) 80 **(d)** None of these

DIRECTION (Q56 - Q60): Refer the graph below to answer these questions.



Q56. Approximately, what was the actual profit made by the department store in the second quarter of 1999?

(a) Rs 160 lakh **(b)** Rs 170 lakh

(c) Rs 180 lakh **(d)** Rs 210 lakh

Q57. In which of the following quarters, did the departmental store make the least amount of profits?

(a) Third quarter of 2000

(b) Second quarter of 1999

(c) First quarter of 1999

(d) Third quarter of 1998

Q58. During the period of 1998-2000, how many quarters exceeded the profit of Rs 150 lakh?

(a) 6 **(b)** 5

(c) 4 **(d)** 3

Q59. In the year 2000, total profit made by the departmental store was approximately?

(a) Rs 540 lakh

(b) Rs 630 lakh

(c) Rs 720 lakh

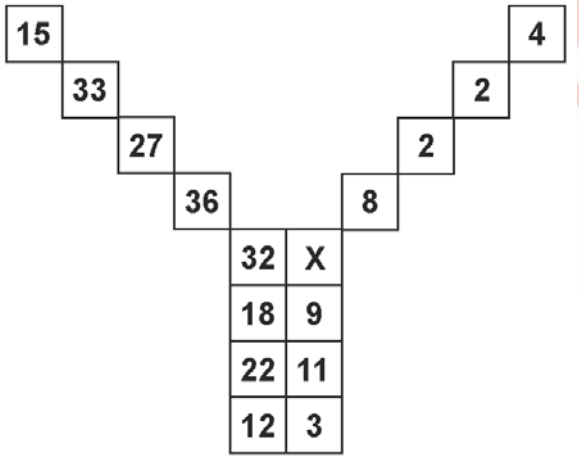
(d) Rs 770 lakh

Q60. The total annual profit made by the departmental store increased by approximately what percent from 1997 to 2000?

(a) 40% **(b)** 50%

(c) 90% **(d)** 120%

Q61. Find the value of X n the following figure.



(a) 3 **(b)** 4

(c) 8 **(d)** 12

Q62. If A + D = B + C, A + E = C + D, 2C < A + E and 2A > B + D, then

(a) A > B > C > D > E

(b) B > A > D > C > E

(c) D > B > C > A > E

(d) B > C > D > E > A

Q63. A game is player between four players. It is found that D scored ½ of the total points scored by A, B and C whereas C scored by 7/20 of the points scored by A, B and D. A scored 5/22 points scored by the other three.

What is the ration of the points scored by B to that of the total points?

(a) 2/7 **(b)** 2/9

(c) 4/7 **(d)** 3/7

Q64. Examine the following relationships among members of a family of six persons A, B, C, D, E and F.

1. The number of males equals that of females.
2. A and E are sons of F.
3. D is the mother of two, one boy and one girl.
4. B is the Son of A.
5. There is one married couple in the family at present.

Which one of the following inferences can be drawn from the above?

(a) A, B and C are all females.

(b) A is the husband of D.

(c) D is the grand daughter of F.

(d) E and F are children of D

Q65. A man fills a basket with eggs in such a way that the number of eggs added on each successive day is the same as the number already present in the basket. This way the basket gets completely filled in 24 days. After how many days the basket was $1/4^{th}$ full?

(a) 6 **(b)** 12

(c) 17 **(d)** 22

Q66. A mixed doubles game is to be played between two teams (each team consist of one male and one female): There are four married couples. No team is to consist of a husband and his wife. What is the maximum number of games that can be played?

(a) 12 **(b)** 21

(c) 36 **(d)** 42

DIRECTION (Q67 - Q71): read the following information to answer these questions.

Four players A, B, C and D are holding 4 cards each. Each of them has an Ace, a King, a Queen and a Jack. All of them have all the suits (spades, hearts, clubs and diamonds).

1. A has ace of spades and queen of diamonds.
2. B has ace of clubs and king of diamonds.
3. C has queen of clubs and king of spades.
4. D has jack of clubs.

Q67. Ace of diamonds is with.

(a) A **(b)** B

(c) C **(d)** D

Q68. Jack of hearts is with.

(a) A **(b)** B

(c) C **(d)** D

Q69. Queen of spades is with.

(a) A **(b)** B

(c) C **(d)** D

Q70. C has which of the following with him?

(a) Ace of hearts

(b) Jack of spades

(c) King of hearts

(d) Queen of spades

Q71. D has which of the following with him?

(a) Ace of hearts

(b) Queen of hearts

(c) King of hearts

(d) King of cubes

Q72. A cube, painted yellow on all faces is cut into 27 small cubes of equal size. How many small cubes are painted on one face only?

(a) 1 **(b)** 6

(c) 8 **(d)** 12

Q73. Between two book-ends in your study are displayed your five favourite puzzle books. If you decide to arrange the five books in every possible combination and moved first one book every minute, how long would it take you?

(a) 1 hrs **(b)** 2 hrs

(c) 3 hrs **(d)** 4 hrs

Q74. A mixture contains milk and water in the ratio a:b. Of x litres of water is added to the mixture, milk and water become in the ratio a:e. Then the quantity of milk and water in the mixture is given by

(a) $\frac{ax}{c-b}, \frac{bx}{c-b}$

(b) $\frac{a}{x(c-b)}, \frac{b}{x(c-b)}$

(c) $\frac{ax}{(a+b)(c-b)}, \frac{bx}{(a+b)(c-b)}$

(d) None of these

Q75. If 4 digit numbers greater than 5,000 are randomly formed from the digits 0, 1, 3, 5 and 7, what is the probability of forming a number divisible by 5. When the digits are repeated?

(a) $\frac{2}{5}$ **(b)** $\frac{33}{83}$

(c) $\frac{3}{8}$ **(d)** None o these

Q76. A walks 20m towards east from a point then turns to his left and walks 20m then turns to his right and moves 10m again turns to his left and again moves 10m and at the last he turns to his left and moves 10m. Now in which direction and how far is he from the starting point?

(a) $13\sqrt{10}$ North West

(b) $10\sqrt{10}$ South East

(c) $10\sqrt{13}$ North East

(d) $30\sqrt{2}$ South West

Q77. In a certain code, the word ROAD is coded as WTFI. Following the same rule of coding what should be the word or the GJFY?

(a) REAP **(b)** TAKE

(c) BEAT **(d)** LATE

Q78. A girl counted in the following way on the fingers of her left hand: she started by calling the thumb 1, the index finger 2, middle finger 3, ring finger 4, little finger 5 and then reversed direction calling the ring finger 6, middle finger 7 and so on. She counted upto 1994. She ended counting on which finger?

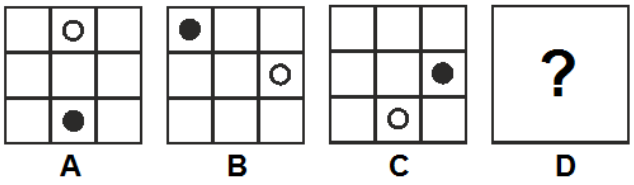
(a) Thumb

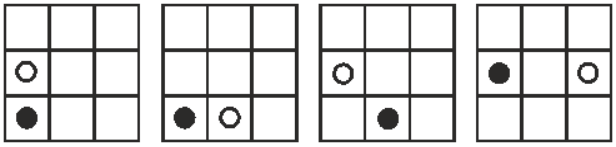
(b) Index Finger

(c) Middle Finger

(d) Ring Finger

Q79. DIRECTION: The one which would replace the (?) in figure D.





Q80. DIRECTION: Select a figure from amongst the answer figures. Which will continue the series established by the four problems figures?