

**Topic Oriented Test (TOT) - 10****Passage 1 (1/5)**

Traditionally, the first firm to commercialize a new technology has benefited from the unique opportunity to shape product definitions, forcing followers to adapt to a standard or invest in an unproven alternative. Today, however, the largest **payoffs** may go to companies that lead in developing integrated approaches for successful mass production and distribution.

Producers of the Beta format for videocassette recorders (VCR's), for example, were first to develop the VCR commercially in 1975, but producers of the rival VHS (Video Home System) format proved to be more successful at forming strategic alliances with other producers and distributors to manufacture and market their VCR format. Seeking to maintain exclusive control over VCR distribution, Beta producers were reluctant to form such alliances and eventually lost ground to VHS in the competition for the global VCR market.

Despite Beta's substantial technological **head start** and the fact that VHS was neither technically better nor cheaper than Beta, developers of VHS quickly **turned** a slight early lead in sales into a dominant position. Strategic alignments with producers of prerecorded tapes reinforced the VHS advantage. The perception among consumers that prerecorded tapes were more available in VHS format further expanded VHS's share of the market. By the end of the 1980's, Beta was no longer in production.

1. The passage is primarily concerned with which of the following?
  - (A) Evaluating two competing technologies
  - (B) Tracing the impact of a new technology by narrating a sequence of events
  - (C) Reinterpreting an event from contemporary business history
  - (D) Illustrating a business strategy by means of a case history
  - (E) Proposing an innovative approach to business planning
2. According to the passage, today's successful firms, unlike successful firms in the past, may earn the greatest profits by
  - (A) investing in research to produce cheaper versions of existing technology
  - (B) being the first to market a competing technology
  - (C) adapting rapidly to a technological standard previously set by a competing firm
  - (D) establishing technological leadership in order to shape product definitions in advance of competing firms
  - (E) emphasizing the development of methods for the mass production and distribution of a new technology
3. According to the passage, consumers began to develop a preference for VCR's in the VHS format because they believed which of the following?
  - (A) VCR's in the VHS format were technically better than competing-format VCR's.
  - (B) VCR's in the VHS format were less expensive than competing-format VCR's.
  - (C) VHS was the first standard format for VCR's.
  - (D) VHS prerecorded videotapes were more available than Beta-format tapes.
  - (E) VCR's in the Beta format would soon cease to be produced.
4. The author implies that one way that VHS producers won control over the VCR market was by

- (A) carefully restricting access to VCR technology
  - (B) giving up a slight early lead in VCR sales in order to improve long-term prospects
  - (C) retaining a strict monopoly on the production of prerecorded videotapes
  - (D) sharing control of the marketing of VHS-format VCR's
  - (E) sacrificing technological superiority over Beta-format VCR's in order to remain competitive in price
5. The alignment of producers of VHS-format VCR's with producers of prerecorded videotapes is most similar to which of the following?
- (A) The alignment of an automobile manufacturer with another automobile manufacturer to adopt a standard design for automobile engines.
  - (B) The alignment of an automobile manufacturer with an automotive glass company whereby the manufacturer agrees to purchase automobile windshields only from that one glass company.
  - (C) The alignment of an automobile manufacturer with a petroleum company to ensure the widespread availability of the fuel required by a new type of engine developed by the manufacturer.
  - (D) The alignment of an automobile manufacturer with its dealers to adopt a plan to improve automobile design.
  - (E) The alignment of an automobile dealer with an automobile rental chain to adopt a strategy for an advertising campaign to promote a new type of automobile.
6. Which of the following best describes the relation of the first paragraph to the passage as a whole?
- (A) It makes a general observation to be exemplified.
  - (B) It outlines a process to be analyzed.
  - (C) It poses a question to be answered.
  - (D) It advances an argument to be disputed.
  - (E) It introduces conflicting arguments to be reconciled.

### Passage 2 (2/5)

Australian researchers have discovered electroreceptors (sensory organs designed to respond to electrical fields) clustered at the tip of the spiny anteater's snout. The researchers made this discovery by exposing small areas of the snout to extremely weak electrical fields and recording the transmission of resulting nervous activity to the brain. While it is true that tactile receptors, another kind of sensory organ on the anteater's snout, can also respond to electrical stimuli, such receptors do so only in response to electrical field strengths about 1,000 times greater than those known to excite electroreceptors.

Having discovered the electroreceptors, researchers are now investigating how anteaters utilize such a sophisticated sensory system. In one behavioral experiment, researchers successfully trained an anteater to distinguish between two troughs of water, one with a weak electrical field and the other with none. Such evidence is consistent with researchers' hypothesis that anteaters use electroreceptors to detect electrical signals given off by prey; however, researchers as yet have been unable to detect electrical signals emanating from termite mounds,

where the favorite food of anteaters live. Still, researchers have observed anteaters breaking into a nest of ants at an **oblique angle** and quickly locating nesting chambers. This ability quickly to locate unseen prey suggests, according to the researchers, that the anteaters were using their electroreceptors to locate the nesting chambers.

1. According to the passage, which of the following is a characteristic that distinguishes electroreceptors from tactile receptors?
  - (A) The manner in which electroreceptors respond to electrical stimuli
  - (B) The tendency of electroreceptors to be found in clusters
  - (C) The unusual locations in which electroreceptors are found in most species
  - (D) The amount of electrical stimulation required to excite electroreceptors
  - (E) The amount of nervous activity transmitted to the brain by electroreceptors when they are excited
2. Which of the following can be inferred about the experiment described in the first paragraph?
  - (A) Researchers had difficulty verifying the existence of electroreceptors in the anteater because electroreceptors respond to such a narrow range of electrical field strengths.
  - (B) Researchers found that the level of nervous activity in the anteater's brain increased dramatically as the strength of the electrical stimulus was increased.
  - (C) Researchers found that some areas of the anteater's snout were not sensitive to a weak electrical stimulus.
  - (D) Researchers found that the anteater's tactile receptors were more easily excited by a strong electrical stimulus than were the electroreceptors.
  - (E) Researchers tested small areas of the anteater's snout in order to ensure that only electroreceptors were responding to the stimulus.
3. The author of the passage most probably discusses the function of tactile receptors (lines 7-11) in order to
  - (A) eliminate an alternative explanation of anteaters' response to electrical stimuli
  - (B) highlight a type of sensory organ that has a function identical to that of electroreceptors
  - (C) point out a serious complication in the research on electroreceptors in anteaters
  - (D) suggest that tactile receptors assist electroreceptors in the detection of electrical signals
  - (E) introduce a factor that was not addressed in the research on electroreceptors in anteaters
4. Which of the following can be inferred about anteaters from the behavioral experiment mentioned in the second paragraph?
  - (A) They are unable to distinguish between stimuli detected by their electroreceptors and stimuli detected by their tactile receptors.
  - (B) They are unable to distinguish between the electrical signals emanating from termite mounds and those emanating from ant nests.
  - (C) They can be trained to recognize consistently the presence of a particular

stimulus.

- (D) They react more readily to strong than to weak stimuli.
- (E) They are more efficient at detecting stimuli in a controlled environment than in a natural environment.
5. The passage suggests that the researchers mentioned in the second paragraph who observed anteaters break into a nest of ants would most likely agree with which of the following statements?
- (A) The event they observed provides conclusive evidence that anteaters use their electroreceptors to locate unseen prey.
- (B) The event they observed was atypical and may not reflect the usual hunting practices of anteaters.
- (C) It is likely that the anteaters located the ants' nesting chambers without the assistance of electroreceptors.
- (D) Anteaters possess a very simple sensory system for use in locating prey.
- (E) The speed with which the anteaters located their prey is greater than what might be expected on the basis of chance alone.
6. Which of the following, if true, would most strengthen the hypothesis mentioned in lines 17-19?
- (A) Researchers are able to train anteaters to break into an underground chamber that is emitting a strong electrical signal.
- (B) Researchers are able to detect a weak electrical signal emanating from the nesting chamber of an ant colony.
- (C) Anteaters are observed taking increasingly longer amounts of time to locate the nesting chambers of ants.
- (D) Anteaters are observed using various angles to break into nests of ants.
- (E) Anteaters are observed using the same angle used with nests of ants to break into the nests of other types of prey.

### Passage 3 (3/5)

When A. Philip Randolph assumed the leadership of the Brotherhood of **Sleeping Car** Porters, he began a ten-year battle to win recognition from the **Pullman** Company, the largest private employer of Black people in the United States and the company that controlled the railroad industry's **sleeping car** and **parlor** service. In 1935 the Brotherhood became the first Black union recognized by a major corporation. Randolph's efforts in the battle helped transform the attitude of Black workers toward unions and toward themselves as an identifiable group; eventually, Randolph helped to weaken organized labor's antagonism toward Black workers.

In the Pullman contest Randolph faced formidable obstacles. The first was Black workers' understandable skepticism toward unions, which had historically barred Black workers from membership. An additional obstacle was the union that Pullman itself had formed, which weakened support among Black workers for an independent entity.

The Brotherhood possessed a number of advantages, however, including Randolph's own tactical abilities. In 1928 he took the bold step of threatening a strike against Pullman. Such a threat, on a national scale, under Black leadership, helped replace the stereotype of the Black worker as servant with the image of the Black worker as **wage earner**. In addition, the porters' very isolation aided the Brotherhood. Porters were scattered throughout the country, sleeping in

dormitories in Black communities; their segregated life protected the union's internal communications from interception. That the porters were a homogeneous group working for a single employer with single labor policy, thus sharing the same grievances from city to city, also strengthened the Brotherhood and encouraged racial identity and solidarity as well. But it was only in the early 1930's that federal legislation prohibiting a company from maintaining its own unions with company money eventually allowed the Brotherhood to become recognized as the porters' representative.

Not content with this triumph, Randolph brought the Brotherhood into the American Federation of Labor, where it became the equal of the Federation's 105 other unions. He reasoned that as a member union, the Brotherhood would be in a better position to exert pressure on member unions that practiced race restrictions. Such restrictions were eventually found unconstitutional in 1944.

1. According to the passage, by 1935 the skepticism of Black workers toward unions was
  - (A) unchanged except among Black employees of railroad-related industries
  - (B) reinforced by the actions of the Pullman Company's union
  - (C) mitigated by the efforts of Randolph
  - (D) weakened by the opening up of many unions to Black workers
  - (E) largely alleviated because of the policies of the American Federation of Labor
2. In using the word "understandable" (line 14), the author most clearly conveys
  - (A) sympathy with attempts by the Brotherhood between 1925 and 1935 to establish an independent union
  - (B) concern that the obstacles faced by Randolph between 1925 and 1935 were indeed formidable
  - (C) ambivalence about the significance of unions to most Black workers in the 1920's
  - (D) appreciation of the attitude of many Black workers in the 1920's toward unions
  - (E) regret at the historical attitude of unions toward Black workers
3. The passage suggests which of the following about the response of porters to the Pullman Company's own union?
  - (A) Few porters ever joined this union.
  - (B) Some porters supported this union before 1935.
  - (C) Porters, more than other Pullman employees, enthusiastically supported this union.
  - (D) The porters' response was most positive after 1935.
  - (E) The porters' response was unaffected by the general skepticism of Black workers concerning unions.
4. The passage suggests that if the grievances of porters in one part of the United States had been different from those of porters in another part of the country, which of the following would have been the case?
  - (A) It would have been more difficult for the Pullman Company to have had a single labor policy.
  - (B) It would have been more difficult for the Brotherhood to control its channels of



- communication.
- (C) It would have been more difficult for the Brotherhood to build its membership.
- (D) It would have been easier for the Pullman Company's union to attract membership.
- (E) It would have been easier for the Brotherhood to threaten strikes.
5. The passage suggests that in the 1920's a company in the United States was able to
- (A) use its own funds to set up a union
- (B) require its employees to join the company's own union
- (C) develop a single labor policy for all its employees with little employee dissent
- (D) pressure its employees to contribute money to maintain the company's own union
- (E) use its resources to prevent the passage of federal legislation that would have facilitated the formation of independent unions
6. The passage supplies information concerning which of the following matters related to Randolph?
- (A) The steps he took to initiate the founding of the Brotherhood
- (B) His motivation for bringing the Brotherhood into the American Federation of Labor
- (C) The influence he had on the passage of legislation overturning race restrictions in 1944
- (D) The influence he had on the passage of legislation to bar companies from financing their own unions
- (E) The success he and the Brotherhood had in influencing the policies of the other unions in the American Federation of Labor

### Passage 4 (4/5)

Historians of women's labor in the United States at first largely disregarded the story of female service workers—women earning wages in occupations such as **salesclerk**, domestic servant, and office secretary. These historians focused instead on factory work, primarily because it seemed so different from traditional, unpaid "women's work" in the home, and because the underlying economic forces of industrialism were presumed to be gender-blind and hence emancipatory **in effect**. Unfortunately, emancipation has been less profound than expected, for not even industrial wage labor has escaped continued sex segregation in the workplace.

To explain this unfinished revolution in the status of women, historians have recently begun to emphasize the way a prevailing definition of femininity often determines the kinds of work allocated to women, even when such allocation is inappropriate to new conditions. For instance, early textile-mill entrepreneurs, in justifying women's employment in wage labor, made much of the assumption that women were **by nature** skillful at detailed tasks and patient in carrying out repetitive chores; the mill owners thus imported into the new industrial order hoary stereotypes associated with the homemaking activities they presumed to have been the purview of women. Because women accepted the more unattractive new industrial tasks more readily than did men, such jobs came to be regarded as female jobs. And employers, who assumed that women's "real" aspirations were for marriage and family life, declined to pay women wages commensurate with those of men. Thus many lower-skilled, lower-paid, less secure jobs came to be perceived as "female."

More remarkable than the origin has been the persistence of such sex segregation in

twentieth-century industry. Once an occupation came to be perceived as “female,” employers showed surprisingly little interest in changing that perception, even when higher profits beckoned. And despite the urgent need of the United States during the Second World War to mobilize its human resources fully, job segregation by sex characterized even the most important war industries. Moreover, once the war ended, employers quickly returned to men most of the “male” jobs that women had been permitted to master.

1. According to the passage, job segregation by sex in the United States was
  - (A) greatly diminished by labor mobilization during the Second World War
  - (B) perpetuated by those textile-mill owners who argued in favor of women’s employment in wage labor
  - (C) one means by which women achieved greater job security
  - (D) reluctantly challenged by employers except when the economic advantages were obvious
  - (E) a constant source of labor unrest in the young textile industry
2. According to the passage, historians of women’s labor focused on factory work as a more promising area of research than service-sector work because factory work
  - (A) involved the payment of higher wages
  - (B) required skill in detailed tasks
  - (C) was assumed to be less characterized by sex segregation
  - (D) was more readily accepted by women than by men
  - (E) fitted the economic dynamic of industrialism better
3. It can be inferred from the passage that early historians of women’s labor in the United States paid little attention to women’s employment in the service sector of the economy because
  - (A) the extreme variety of these occupations made it very difficult to assemble meaningful statistics about them
  - (B) fewer women found employment in the service sector than in factory work
  - (C) the wages paid to workers in the service sector were much lower than those paid in the industrial sector
  - (D) women’s employment in the service sector tended to be much more short-term than in factory work
  - (E) employment in the service sector seemed to have much in common with the unpaid work associated with homemaking
4. The passage supports which of the following statements about the early mill owners mentioned in the second paragraph?
  - (A) They hoped that by creating relatively unattractive “female” jobs they would discourage women from losing interest in marriage and family life.
  - (B) They sought to increase the size of the available labor force as a means to keep men’s wages low.
  - (C) They argued that women were inherently suited to do well in particular kinds of factory work.
  - (D) They thought that factory work bettered the condition of women by emancipating

- them from dependence on income earned by men.
- (E) They felt guilty about disturbing the traditional division of labor in family.
5. It can be inferred from the passage that the “unfinished revolution” the author mentions in line 13 refers to the
- (A) entry of women into the industrial labor market
- (B) recognition that work done by women as homemakers should be compensated at rates comparable to those prevailing in the service sector of the economy
- (C) development of a new definition of femininity unrelated to the economic forces of industrialism
- (D) introduction of equal pay for equal work in all professions
- (E) emancipation of women wage earners from gender-determined job allocation
6. The passage supports which of the following statements about hiring policies in the United States?
- (A) After a crisis many formerly “male” jobs are reclassified as “female” jobs.
- (B) Industrial employers generally prefer to hire women with previous experience as homemakers.
- (C) Post-Second World War hiring policies caused women to lose many of their wartime gains in employment opportunity.
- (D) Even war industries during the Second World War were reluctant to hire women for factory work.
- (E) The service sector of the economy has proved more nearly gender-blind in its hiring policies than has the manufacturing sector.
7. Which of the following words best expresses the opinion of the author of the passage concerning the notion that women are more skillful than men in carrying out detailed tasks?
- (A) “patient” (line 21)                      (B) “repetitive” (line 21)                      (C) “hoary” (line 22)
- (D) “homemaking” (line 23)                      (E) “purview” (line 24)
8. Which of the following best describes the relationship of the final paragraph to the passage as a whole?
- (A) The central idea is reinforced by the citation of evidence drawn from twentieth-century history.
- (B) The central idea is restated in such a way as to form a transition to a new topic for discussion.
- (C) The central idea is restated and juxtaposed with evidence that might appear to contradict it.
- (D) A partial exception to the generalizations of the central idea is dismissed as unimportant.
- (E) Recent history is cited to suggest that the central idea’s validity is gradually diminishing.

### Passage 5 (5/5)

According to a recent theory, Archean-age gold-quartz vein systems were formed over two



billion years ago from magnetic fluids that originated from molten granite-like bodies deep beneath the surface of the Earth. This theory is contrary to the widely held view that the systems were deposited from metamorphic fluids, that is, from fluids that formed during the dehydration of wet sedimentary rocks.

The recently developed theory has considerable practical importance. Most of the gold deposits discovered during the original gold rushes were exposed at the Earth's surface and were found because they had shed trails of **alluvial gold** that were easily traced by simple **prospecting** methods. Although these same methods still lead to an occasional discovery, most deposits not yet discovered have gone undetected because they are buried and have no surface expression.

The challenge in exploration is therefore to unravel the subsurface geology of an area and pinpoint the position of buried minerals. Methods widely used today include analysis of aerial images that yield a broad geological overview; geophysical techniques that provide data on the magnetic, electrical, and mineralogical properties of the rocks being investigated; and sensitive chemical tests that are able to detect the subtle chemical halos that often envelop mineralization. However, none of these high-technology methods are of any value if the sites to which they are applied have never mineralized, and to maximize the chances of discovery the explorer must therefore pay particular attention to selecting the ground formations most likely to be mineralized. Such ground selection relies to varying degrees on conceptual models, which take into account theoretical studies of relevant factors.

These models are constructed primarily from empirical observations of known mineral deposits and from theories of ore-forming processes. The explorer uses the models to identify those geological features that are critical to the formation of the mineralization being modeled, and then tries to select areas for exploration that exhibit as many of the critical features as possible.

1. The author is primarily concerned with
  - (A) advocating a return to an older methodology
  - (B) explaining the importance of a recent theory
  - (C) enumerating differences between two widely used methods
  - (D) describing events leading to a discovery
  - (E) challenging the assumptions on which a theory is based
2. According to the passage, the widely held view of Archean-age gold-quartz vein systems is that such systems
  - (A) were formed from metamorphic fluids
  - (B) originated in molten granite-like bodies
  - (C) were formed from alluvial deposits
  - (D) generally have surface expression
  - (E) are not discoverable through chemical tests
3. The passage implies that which of the following steps would be the first performed by explorers who wish to maximize their chances of discovering gold?
  - (A) Surveying several sites known to have been formed more than two billion years ago
  - (B) Limiting exploration to sites known to have been formed from metamorphic fluid
  - (C) Using an appropriate conceptual model to select a site for further exploration
  - (D) Using geophysical methods to analyze rocks over a broad area
  - (E) Limiting exploration to sites where alluvial gold has previously been found

4. Which of the following statements about discoveries of gold deposits is supported by information in the passage?
- (A) The number of gold discoveries made annually has increased between the time of the original gold rushes and the present.
  - (B) New discoveries of gold deposits are likely to be the result of exploration techniques designed to locate buried mineralization.
  - (C) It is unlikely that newly discovered gold deposits will ever yield as much as did those deposits discovered during the original gold rushes.
  - (D) Modern explorers are divided on the question of the utility of simple prospecting methods as a source of new discoveries of gold deposits.
  - (E) Models based on the theory that gold originated from magnetic fluids have already led to new discoveries of gold deposits.
5. It can be inferred from the passage that which of the following is easiest to detect?
- (A) A gold-quartz vein system originating in magnetic fluids
  - (B) A gold-quartz vein system originating in metamorphic fluids
  - (C) A gold deposit that is mixed with granite
  - (D) A gold deposit that has shed alluvial gold
  - (E) A gold deposit that exhibits chemical halos
6. The theory mentioned in line 1 relates to the conceptual models discussed in the passage in which of the following ways?
- (A) It may furnish a valid account of ore-forming processes, and, hence, can support conceptual models that have great practical significance.
  - (B) It suggests that certain geological formations, long believed to be mineralized, are in fact mineralized, thus confirming current conceptual models.
  - (C) It suggests that there may not be enough similarity across Archean-age gold-quartz vein systems to warrant the formulation of conceptual models.
  - (D) It corrects existing theories about the chemical halos of gold deposits, and thus provides a basis for correcting current conceptual models.
  - (E) It suggests that simple prospecting methods still have a higher success rate in the discovery of gold deposits than do more modern methods.
7. According to the passage, methods of exploring for gold that are widely used today are based on which of the following facts?
- (A) Most of the Earth's remaining gold deposits are still molten.
  - (B) Most of the Earth's remaining gold deposits are exposed at the surface.
  - (C) Most of the Earth's remaining gold deposits are buried and have no surface expression.
  - (D) Only one type of gold deposit warrants exploration, since the other types of gold deposits are found in regions difficult to reach.
  - (E) Only one type of gold deposit warrants exploration, since the other types of gold deposits are unlikely to yield concentrated quantities of gold.
8. It can be inferred from the passage that the efficiency of model-based gold

exploration depends on which of the following?

- I. The closeness of the match between the geological features identified by the model as critical and the actual geological features of a given area
  - II. The degree to which the model chosen relies on empirical observation of known mineral deposits rather than on theories of ore-forming processes
  - III. The degree to which the model chosen is based on an accurate description of the events leading to mineralization
- (A) I only                                      (B) II only                                      (C) I and II only  
 (D) I and III only                              (E) I, II and III

### ANSWERS

#### Passage 1 (1/5)

1. D	2. E	3. D	4. D	5. C
6. A	7.	8.	9.	10.

#### Passage 2 (2/5)

1. D	2. C	3. A	4. C	5. E
6. B	7.	8.	9.	10.

#### Passage 3 (3/5)

1. C	2. D	3. B	4. C	5. A
6. B	7.	8.	9.	10.

#### Passage 4 (4/5)

1. B	2. C	3. E	4. C	5. E
6. C	7. C	8. A	9.	10.

#### Passage 5 (5/5)

1. B	2. A	3. C	4. B	5. D
6. A	7. C	8. D	9.	10.