Medical College Admission Test: Verbal Reasoning, Biological Sciences, Physical Sciences, Writing Sample

1. In the early nineteenth century a large number of communal experiments, both secular and religious, sprang up in the northeastern United States. Perhaps the most famous secular commune was Brook Farm, founded by transcendentalists George Ripley and William H. Channing to promote the pursuit of leisure and culture through the proper application of time and labor. Its members (among the more notable were Nathaniel Hawthorne and Margaret Fuller) pursued field labor by day, art and philosophy by night. For a time the system worked so well that two afternoons a week were set aside for leisure and Brook Farm began outcompeting local farmers at the produce market. But by nature the Farm's members were thinkers, not workers; despite their success they remained mainly interested in the theoretical and philosophical implications of the experiment. Thus, when a devastating fire brought the community considerable financial burdens in its fifth year, the members felt little compunction about closing shop and returning to their comfortable Boston homes.

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The passage implies that the end of the Brook Farm experiment was probably brought on by:

A. faltering commitment in the face of hardship.

B. a failure to attract members of sufficient intellect or ability.

C. the completion of the community's aims.

D. the incompetence of philosophers at field labor.

Answer(s): A

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2. In the early nineteenth century a large number of communal experiments, both secular and religious, sprang up in the northeastern United States. Perhaps the most famous secular commune was Brook Farm, founded by transcendentalists George Ripley and William H. Channing to promote the pursuit of leisure and culture through the proper application of time and labor. Its members (among the more notable were Nathaniel Hawthorne and Margaret Fuller) pursued field labor by day, art and philosophy by night. For a time the system worked so well that two afternoons a week were set aside for leisure and Brook Farm began outcompeting local farmers at the produce market. But by nature the Farm's members were thinkers, not workers; despite their success they remained mainly interested in the theoretical and philosophical implications of the experiment. Thus, when a devastating fire brought the community considerable financial burdens in its fifth year, the members felt little compunction about closing shop and returning to their comfortable Boston homes.
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According to the passage, the Oneidans believed that:

A. men and women were equal in the eyes of God.

B. monogamy was wrong in principle.

C. rules and standards of behavior were unnecessary.

D. they were destined to witness Christ's second coming.

Answer(s): B

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The passage implies that Brook Farm's economic system:

A. did not include the selling of produce outside the farm.

B. was based on the hiring of farm hands.

C. efficiently utilized time and labor.

D. was primarily intended to maximize collective profit.

Answer(s): C

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According to the passage, all of the following were characteristic of the Oneida community EXCEPT:

A. complex marriage.

B. maintenance of order through social pressure.

C. belief in present grace.

D. shared living quarters.

Answer(s): D

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The Shakers resembled the Oneidans in their attitude toward:

A. sexual practices.

B. equality of men and women.

C. personal property.

D. contact with the outside world.

Answer(s): C

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discipline, led to a decline in numbers, but even today a small number of elderly Shakers in two communities in Maine and New Hampshire continue to keep the faith.
It can be inferred from the passage that the cohesion of a secular workers' cooperative, based on the principles of collective ownership and the sharing of profits, would probably be weakened by:
I). diminished contact with the outside world.
II). increasing agnosticism.
III). considerable economic losses.

A. I only

B. II only

C. III only

D. I and II only

Answer(s): C

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If the passage were to continue, the next topic the author would discuss would probably be:

A. a comparison between nineteenth and twentieth century communal living experiments.

B. a theory explaining why communal living might become popular again.

C. an analysis of why early communes attracted intellectuals and artists.

D. an investigation into why the three communes discussed were successful to varying degrees.

Answer(s): D

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8. The time has come to acknowledge the ascendancy of the humanistic psychology movement. The so-called "Third Stream" emerged at mid-century, asserting itself against the opposition of a pair of mighty, long- established currents, psychoanalysis and behaviorism. The hostility between these two older schools, as well as divisiveness within each of them, probably helped enable humanistic psychology to survive its early years. But the movement flourished because of its wealth of insights into the nature of this most inexact science.
Of the three major movements in the course of 20th century psychology, psychoanalysis is the oldest and most introspective. Conceived by Sigmund Freud as a means of treating mental and emotional disorders, psychoanalysis is based on the theory that people experience unresolved emotional conflicts in infancy and early childhood. Years later, although these experiences have largely disappeared from conscious awareness, they may continue to impair a person's ability to function in daily life. The patient experiences improvement when the psychoanalyst eventually unlocks these long-repressed memories of conflict and brings them to the patient's conscious awareness.
In the heyday of behaviorism, which occurred between the two world wars, the psychoanalytic

movement was heavily criticized for being too concerned with inner subjective experience. Behavioral psychologists, dismissing ideas and feelings as unscientific, tried to deal only with observable and quantifiable facts. They perceived the human being merely as an organism which generated responses to stimuli produced by its body and the environment around it. Patients' neuroses no longer needed analysis; they could instead by modified by behavioral conditioning. Not even babies were safe: B.F. Skinner devised a container in which infants could be raised under "ideal" conditions if a sound-proof box can be considered the ideal environment for child-rearing.

By mid-century, a number of psychologists had grown dissatisfied with both the deterministic Freudian perspective and the mechanistic approach of behaviorism. They questioned the idea that human personality becomes permanently fixed in the first few years of life. They wondered if the purpose of psychology was really to reduce people to laboratory specimens. Was it not instead possible that human beings are greater than the sum of their parts? That psychology should speak to their search for fulfillment and meaning in life?

It is questions like these that members of the Third Stream have sought to address. While the movement cannot be simplified down to a single theoretical position, it does spring from certain fundamental propositions. Humanistic psychologists believe that conscious experience, rather than outward behavior, is the proper subject of psychology. We recognize that each human being is unique, capable of change and personal growth. We see maturity as a process dependent on the establishment of a set of values and the development of self. And we believe that the more aspects of self which are satisfactorily developed, the more positive the individual's self-image. Abraham Maslow, a pioneer of the Third Stream, articulated a hierarchy of basic human needs, starting with food, water and air, progressing upward through shelter and security, social acceptance and belonging, to love, esteem and self-expression. Progress toward the higher stages cannot occur until all of the more basic needs have been satisfied. Individuals atop the pyramid, having developed their potential to the highest possible extent, are said to be "self-actualized".

If this humanist theoretical perspective is aimed at empowering the individual, so too are the movement's efforts in the practical realm of clinical psychology. Believing that traditional psychotherapists tend to lead patients toward predetermined resolutions of their problems, Carl Rogers pressed for objective evaluations of both the process and outcome of psychotherapeutic treatment. Not content to function simply as a reformer,

Rogers also pioneered the development of "client-centered" or nondirective therapy, which emphasizes the autonomy of the client (i.e., patient). In client-centered therapy, clients choose the subjects for discussion, and are encouraged to create their own solutions to their problems.

If the author of this passage met a Freudian psychoanalyst who felt that it was important for patients to consider themselves capable of fundamental change, he would most likely conclude that the psychoanalyst was:

A. opposed to the Third Stream.

B. concerned only with conscious experience.

C. influenced by humanist theory.

D. rejecting Maslow's hierarchy of human needs.

Answer(s): C

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The author states that "not even babies were safe" (line 35) most probably in order to:

A. emphasize that the use of even very young subjects is considered valid among most psychologists.

B. indicate the pervasive influence of behaviorists on the field of psychology.

C. show that behaviorists were anxious to apply their theories to a wide range of subjects.

D. warn of the dangers of psychoanalysis for children.

Answer(s): C

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The author most probably believes that, in its early days, the humanistic psychology movement:

I). benefited from dissension among psychologists.

II). acknowledged Maslow and Rogers as its only leaders.

III). was an offshoot of behaviorism.

A. I only

B. II only

C. I and II only

D. II and III only

Answer(s): A

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Of the three major movements in the course of 20th century psychology, psychoanalysis is the oldest and most introspective. Conceived by Sigmund Freud as a means of treating mental and emotional disorders, psychoanalysis is based on the theory that people experience unresolved emotional conflicts in infancy and early childhood. Years later, although these experiences have largely disappeared from conscious awareness, they may continue to impair a person's ability to function in daily life. The patient experiences improvement when the psychoanalyst eventually unlocks these long-repressed memories of conflict and brings them to the patient's conscious awareness.

In the heyday of behaviorism, which occurred between the two world wars, the psychoanalytic movement was heavily criticized for being too concerned with inner subjective experience. Behavioral psychologists, dismissing ideas and feelings as unscientific, tried to deal only with observable and quantifiable facts. They perceived the human being merely as an organism which generated responses to stimuli produced by its body and the environment around it. Patients' neuroses no longer needed analysis; they could instead by modified by behavioral conditioning. Not even babies were safe: B.F. Skinner devised a container in which infants could be raised under "ideal" conditions if a sound-proof box can be considered the ideal environment for child-rearing.

By mid-century, a number of psychologists had grown dissatisfied with both the deterministic Freudian perspective and the mechanistic approach of behaviorism. They questioned the idea that human personality becomes permanently fixed in the first few years of life. They wondered if the purpose of psychology was really to reduce people to laboratory specimens. Was it not instead possible that human beings are greater than the sum of their parts? That psychology should speak to their search for fulfillment and meaning in life?

It is questions like these that members of the Third Stream have sought to address. While the movement cannot be simplified down to a single theoretical position, it does spring from certain

fundamental propositions. Humanistic psychologists believe that conscious experience, rather than outward behavior, is the proper subject of psychology. We recognize that each human being is unique, capable of change and personal growth. We see maturity as a process dependent on the establishment of a set of values and the development of self. And we believe that the more aspects of self which are satisfactorily developed, the more positive the individual's self-image. Abraham Maslow, a pioneer of the Third Stream, articulated a hierarchy of basic human needs, starting with food, water and air, progressing upward through shelter and security, social acceptance and belonging, to love, esteem and self-expression. Progress toward the higher stages cannot occur until all of the more basic needs have been satisfied. Individuals atop the pyramid, having developed their potential to the highest possible extent, are said to be "self-actualized".
If this humanist theoretical perspective is aimed at empowering the individual, so too are the movement's efforts in the practical realm of clinical psychology. Believing that traditional psychotherapists tend to lead patients toward predetermined resolutions of their problems, Carl Rogers pressed for objective evaluations of both the process and outcome of psychotherapeutic treatment. Not content to function simply as a reformer, Rogers also pioneered the development of "client-centered" or nondirective therapy, which emphasizes the autonomy of the client (i.e., patient). In client-centered therapy, clients choose the subjects for discussion, and are encouraged to create their own solutions to their problems.

A. Skinner is mentioned in the passage to support the point that:

B. the ultimate goal of behaviorism is technological innovation.

C. raising babies in isolation prevents childhood conflicts.

D. stimulus-response conditioning was attempted on all sorts of individuals.

E. behaviorists reject the scientific validity of subjective experience.

Answer(s): C

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According to the passage, the ultimate goal of Carl Rogers's client-centered therapy is:

A. simplification of the Third Stream's theoretical perspective.

B. self-directed personal growth for the client.

C. rejection of Maslow's scheme of self-actualization.

D. increased autonomy of psychotherapists.

Answer(s): B

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Psychoanalysts and humanistic psychologists would be most likely to disagree about:

A. the effects of internal conflicts on childhood behavior.

B. the necessity of proper training for psychologists.

C. the relevance and utility of clinical psychology.

D. the significance of conscious experience.

Answer(s): A

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14. Due to ever-increasing paranoia about the transmission of hepatitis and AIDS via blood transfusions and the frequent difficulty of procuring matching blood donors for patients, researchers have been working at a feverish pace to produce disease-free and easy-to-use blood substitutes. The difficulty most synthetic blood researches have had is in formulating a substance that combines qualities of sterility, high capacity for carrying oxygen to body tissues, and versatility within the human body. Three major substitute technologies have been developed to date; each has certain advantages and shortcomings.
"Red blood," the first of the blood substitute technologies, is derived from hemoglobin which has been recycled from old, dead, or worn-out red blood cells and modified so that it can carry oxygen outside the red blood cell. Hemoglobin, a complex protein, is the blood's natural oxygen

carrier and is attractive to scientists for use in synthetic blood because of its oxygen-carrying capacity. However, hemoglobin can sometimes constitute a two- fold threat to humans when it is extracted from the red blood cell and introduced to the body in its naked form. First, hemoglobin molecules are rarely sterile and often remain contaminated by viruses to which they were exposed in the cell. Second, naked hemoglobin is extremely dangerous to the kidneys, causing blood flow at these organs to shut down and leading, ultimately, to renal failure. Additional problems arise from the fact that hemoglobin is adapted to operate optimally within the intricate environment of the red blood cell. Stripped of the protection of the cell, the hemoglobin molecule tends to suffer breakdown within several hours. Although modification has produced more durable hemoglobin molecules which do not cause renal failure, undesired side effects continue to plague patients and hinder the development of hemoglobin-based blood substitutes.

Another synthetic blood alternative, "white blood," is dependent on laboratory synthesized chemicals called perfluorocarbons (PFCs). Unlike blood, PFCs are clear oil like liquids, yet they are capable of absorbing quantities of oxygen up to 50% of their volume, enough of an oxygen carrying potential for oxygen-dependent organisms to survive submerged in the liquid for hours by "breathing" it. Although PFCs imitate real blood by effectively absorbing oxygen, scientists are primarily interested in them as constituents of blood substitutes because they are inherently safer to use than hemoglobin-based substitutes. PFCs do not interact with any chemicals in the body and can be manufactured in near-perfect sterility. The primary pitfall of PFCs is in their tendency to form globules in plasma that can block circulation. Dissolving PFCs in solution can mitigate globulation; however, this procedure also seriously curtails the PFCs' oxygen capacity.

The final and perhaps most ambitious attempt to form a blood substitute involves the synthesis of a modified version of human hemoglobin by genetically-altered bacteria. Fortunately, this synthetic hemoglobin seems to closely mimic the qualities of sterility, and durability outside the cellular environment, and the oxygen-carrying efficiency of blood. Furthermore, researchers have found that if modified hemoglobin genes are added to bacterial DNA, the bacteria will produce the desired product in copious quantities. This procedure is extremely challenging, however, because it requires the isolation of the human gene for the production of hemoglobin, and the modification of the gene to express a molecule that works without support from a living cell.

While all the above technologies have serious drawbacks and difficulties, work to perfect an ideal blood substitute continues. Scientists hope that in the near future safe synthetic blood transfusions may ease blood shortages and resolve the unavailability of various blood types.

The author mentions all of the following as weaknesses of synthetic bloods EXCEPT:

A. naked hemoglobin can cause renal failure in humans.

B. "red blood" can transmit viruses to a recipient.

C. genetic engineering can be extremely difficult.

D. "white blood" has a low oxygen-carrying potential.

Answer(s): D

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While all the above technologies have serious drawbacks and difficulties, work to perfect an ideal blood substitute continues. Scientists hope that in the near future safe synthetic blood

transfusions may ease blood shortages and resolve the unavailability of various blood types.
According to the passage, PFCs are helpful in the synthesis of blood substitutes because they:
I). mimic the oxygen-carrying capacity of blood.
II). do not react with other body chemicals.
III). break down in the blood within several hours.

A. I only

B. II only

C. I and II only

D. II and III only

Answer(s): C

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16. Due to ever-increasing paranoia about the transmission of hepatitis and AIDS via blood transfusions and the frequent difficulty of procuring matching blood donors for patients, researchers have been working at a feverish pace to produce disease-free and easy-to-use blood substitutes. The difficulty most synthetic blood researches have had is in formulating a substance that combines qualities of sterility, high capacity for carrying oxygen to body tissues, and versatility within the human body. Three major substitute technologies have been developed to date; each has certain advantages and shortcomings.
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While all the above technologies have serious drawbacks and difficulties, work to perfect an ideal blood substitute continues. Scientists hope that in the near future safe synthetic blood transfusions may ease blood shortages and resolve the unavailability of various blood types.
According to the passage, all of the following are reasons for research into the development of synthetic bloods EXCEPT:

A. dangerous diseases can be transmitted by conventional blood transfusions.

B. synthetic bloods have greater oxygen-carrying capacities than naturally-produced human blood.

C. donor blood is sometimes in short supply.

D. certain blood types are not readily available.

Answer(s): B

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We can infer that all of the synthetic blood technologies discussed in this passage:

A. sustain submerged oxygen-dependent organisms.

B. possess high oxygen-carrying capacities.

C. maintain high standards of sterility.

D. exhibit versatility in the human body

Answer(s): B

18. Due to ever-increasing paranoia about the transmission of hepatitis and AIDS via blood transfusions and the frequent difficulty of procuring matching blood donors for patients, researchers have been working at a feverish pace to produce disease-free and easy-to-use blood substitutes. The difficulty most synthetic blood researches have had is in formulating a substance that combines qualities of sterility, high capacity for carrying oxygen to body tissues, and versatility within the human body. Three major substitute technologies have been developed to date; each has certain advantages and shortcomings.

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While all the above technologies have serious drawbacks and difficulties, work to perfect an ideal blood substitute continues. Scientists hope that in the near future safe synthetic blood

transfusions may ease blood shortages and resolve the unavailability of various blood types. Which of the following is mentioned in the passage as a problem specific to "red blood"?

A. "Red blood" cannot be produced in large enough quantities.

B. "Red blood" tends to form globules that block circulation.

C. Hemoglobin does not carry oxygen effectively.

D. "Red blood" exhibits poor durability in the bloodstream.

Answer(s): D

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According to the passage, how much oxygen can be absorbed by a 300 cc sample of PFC?

A. 50 cc

B. 100 cc

C. 150 cc

D. 300 cc

Answer(s): C

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blood flow at these organs to shut down and leading, ultimately, to renal failure. Additional problems arise from the fact that hemoglobin is adapted to operate optimally within the intricate environment of the red blood cell. Stripped of the protection of the cell, the hemoglobin molecule tends to suffer breakdown within several hours. Although modification has produced more durable hemoglobin molecules which do not cause renal failure, undesired side effects continue to plague patients and hinder the development of hemoglobin-based blood substitutes.

Another synthetic blood alternative, "white blood", is dependent on laboratory synthesized chemicals called perfluorocarbons (PFCs). Unlike blood, PFCs are clear oil like liquids, yet they are capable of absorbing quantities of oxygen up to 50% of their volume, enough of an oxygen carrying potential for oxygen-dependent organisms to survive submerged in the liquid for hours by "breathing" it. Although PFCs imitate real blood by effectively absorbing oxygen, scientists are primarily interested in them as constituents of blood substitutes because they are inherently safer to use than hemoglobin-based substitutes. PFCs do not interact with any chemicals in the body and can be manufactured in near-perfect sterility. The primary pitfall of PFCs is in their tendency to form globules in plasma that can block circulation. Dissolving PFCs in solution can mitigate globulation; however, this procedure also seriously curtails the PFCs' oxygen capacity.

The final and perhaps most ambitious attempt to form a blood substitute involves the synthesis of a modified version of human hemoglobin by genetically-altered bacteria. Fortunately, this synthetic hemoglobin seems to closely mimic the qualities of sterility, and durability outside the cellular environment, and the oxygen-carrying efficiency of blood. Furthermore, researchers have found that if modified hemoglobin genes are added to bacterial DNA, the bacteria will produce the desired product in copious quantities. This procedure is extremely challenging, however, because it requires the isolation of the human gene for the production of hemoglobin, and the modification of the gene to express a molecule that works without support from a living cell.

While all the above technologies have serious drawbacks and difficulties, work to perfect an ideal blood substitute continues. Scientists hope that in the near future safe synthetic blood transfusions may ease blood shortages and resolve the unavailability of various blood types.

It can be inferred from the passage that the difficulty of producing an ideal blood substitute is compounded by all of the following EXCEPT:

A. there is no known way to isolate the DNA responsible for hemoglobin.

B. naked hemoglobin tends to break down in the bloodstream.

C. non-globulating PFCs have significantly abbreviated oxygen-carrying capacities.

D. the use of PFCs may lead to blood clotting.

Answer(s): A
