NMAT

National Medical Admission Test *Part 1*

PRACTICE SET

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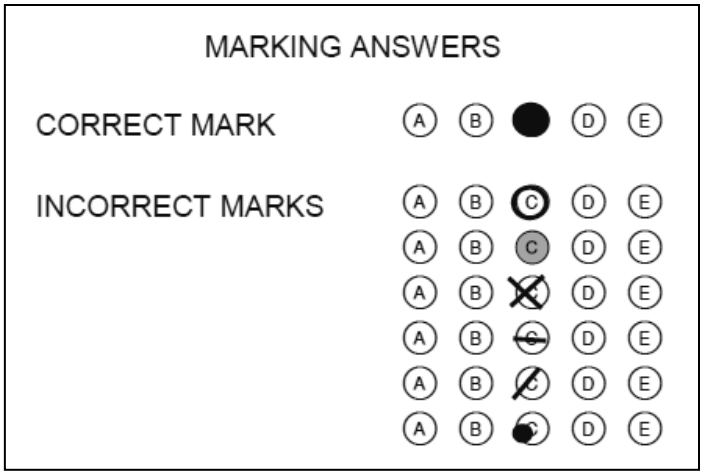
THE TEST OF EXCELLENCE

GENERAL DIRECTIONS

Part 1 of the National Medical Admission Test consists of four subtests. Each subtest contains multiple-choice items.

For each item, select your answer from the options given. On your answer sheet, shade the circle marked with the letter of your chosen answer. For example, if your answer to an item is option C, then completely shade the circle marked C as shown below. Make sure your mark on the circle is dark. Avoid incorrect shading of circles as they may not be recognized as an answer.



Make sure you are marking the answer columns corresponding to the item number you are on. Mark only one answer for each item. If you want to change your answer, erase the first answer completely. Incomplete erasures will be interpreted as another answer thereby producing "multiple answers." Items with multiple answers are automatically considered wrong.

Do not write anything on this test booklet. Use the blank pages of your answer sheet for your scratch work.

Follow carefully the specific directions for each subtest or section. When you finish a subtest, proceed to the next until you have completed the entire test.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

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TEST A. VERBAL

Section 1. Analogies

DIRECTIONS: Each item in this section consists of a series of words. The first word is related to the second in the same way as the third word is related to a fourth one which is missing. Select this missing word from the given choices.

Example:

MAN : WOMAN :: BOY :

(A) child (C) baby
(B) friend (D) girl

In this example, the correct answer is D, girl, because it is the only word that is related to BOY in the same way as MAN : WOMAN.

There are other relationships involved in the items aside from that illustrated above.

1. ALVEOLI : RESPIRATORY :: VENTRICLES :

(A) endocrine (C) digestive
(B) circulatory (D) nervous

2. HEAD : FEET :: STALACTITE :

(A) icicle (C) calcium
(B) limestone (D) stalagmite

3. GOAL : ACTION :: POLICY :

(A) formulation (C) implementation
(B) presentation (D) evaluation

4. CHEF : KNIFE :: SURGEON :

(A) anesthesia (C) bandage
(B) scalpel (D) gloves

5. SCALPEL : CUT :: FORCEPS :

(A) transfuse (C) retract
(B) remove (D) hold

6. SEDATIVE : PAIN :: ANTISEPTIC :

(A) emergency (C) fracture
(B) anxiety (D) wound

7. VINEGAR : RUNNY :: KETCHUP :

(A) turbid (C) viscous
(B) motile (D) pectinous

8. ENTHUSIASTIC : PASSIONATE :: PLENTIFUL :

(A) abundant (C) minimal
(B) scant (D) ample

9. SCLERA : EYEBALL :: CRANIUM :

(A) scalp (C) head
(B) bone (D) brain

10. VALID : LOGIC :: TRUE :

(A) false (C) argument
(B) fact (D) reason

11. COMFORT : AFFLICTION :: SALVE :

(A) problem (C) tragedy
(B) fear (D) wound

12. DRUPE : POME :: VEGETABLE :

(A) mulch (C) bulb
(B) crop (D) herb

13. DISCOVER : LEARN :: PROCESS :

(A) work (C) prepare
(B) apply (D) pass

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14. PRECISE : AMBIGUOUS :: CONCISE :

(A) verbose (C) narrow
(B) profound (D) thorough

15. RESPECT : REVERE :: SHAME :

(A) ostracize (C) execute
(B) repudiate (D) humiliate

16. WEIGHT : KILOGRAM :: VOLUME :

(A) liter (C) intensity
(B) carat (D) quantity

17. WATER : THIRST :: SALVE :

(A) ointment (C) scar
(B) wound (D) cure

Section 2. Reading Comprehension

DIRECTIONS: This section contains reading selections that are followed by a set of items. Answer the items according to what is stated or implied in the selection.

Selection 1

(1) English is the language of learning. I've known this since before I could go to school. As a toddler, my first study materials were a set of flash cards that my mother used to teach me the English alphabet.

(2) My mother made home conducive to learning English: all my storybooks and coloring books were in English, and so were the cartoons I watched and the music I listened to. She required me to speak English at home. She even hired tutors to help me learn to read and write in English.

(3) In school I learned to think in English. We used English to learn about numbers, equations and variables. With it we learned about observation and inference, the moon and the stars, monsoons and photosynthesis. With it we learned about shapes and colors, about meter and rhythm. I learned about God in English, and I prayed to Him in English.

(4) Filipino, on the other hand, was always the 'other' subject — almost a special subject like PE or Home Economics, except that it was graded the same way as Science, Math, Religion, and English. My classmates and I used to complain about Filipino all the time. Filipino was a chore, like washing the dishes; it was not the language of learning. It was the language we used to speak to the people who washed our dishes.

(5) We used to think learning Filipino was important because it was practical: Filipino was the language of the world outside the classroom. It was the language of the streets: it was how you spoke to the *tindera* when you went to the *tindahan*, what you used to tell your *katulong* when

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you had an *utos*, and how you texted *manong* when you needed "*sundo na.*"

(6) That being said though, I was proud of my proficiency with the language. Filipino was the language I used to speak with my cousins and uncles and grandparents in the province, so I never had much trouble reciting.

(7) It was really only in university that I began to grasp Filipino in terms of language and not just dialect. Filipino was not merely a peculiar variety of language, derived and continuously borrowing from the English and Spanish alphabets; it has its own system, with its own grammar, semantics, sounds, even symbols.

(8) But more significantly, it has its own way of reading, writing, and thinking. There are ideas and concepts unique to Filipino that can never be translated into another. Try translating *bayanihan, tagay, kilig* or *diskarte.*

(9) Only recently have I begun to grasp Filipino as the language of identity: the language of emotion, experience, and even of learning. And with this comes the realization that I do, in fact, smell worse than a *malansang isda*. My own language is foreign to me: I speak, think, read and write primarily in English. To borrow the terminology of Fr. Bulatao, I am a split-level Filipino.

(10) It is neither the language of the classroom and the laboratory, nor the language of the boardroom, the court room, or the operating room. It is not the language of privilege. I may be disconnected from my being Filipino, but with a tongue of privilege I will always have my connections.

(11) So I have my education to thank for making English my mother language.

An excerpt from "Language, Learning, Identity, Privilege" by James Soriano. The Philippine Daily Inquirer, September 10, 2011.

18. With reference to the pieces of information given in the second paragraph, which statement would best describe the author's mother?

    (A) She was overprotective.
    (B) She highly valued education.
    (C) She had strong preference for English.
    (D) She spent a lot of time with her child.

19. When the author referred to Filipino as *the other subject*, most likely he meant that it is a _____.

    (A) skills-based subject
    (B) prestigious subject
    (C) difficult subject
    (D) minor subject

20. What is the most likely reason why the author should thank his mother for making English his language of education?

    (A) English gave him an elevated social status.
    (B) Opportunities were opened to him because of his English proficiency.
    (C) Learning English made him appreciate Filipino even more.
    (D) Being good in English allowed him to meet several friends.

21. Which statement would the author most likely agree with?

    (A) English is only for the social elites.
    (B) English is vital to one's education.
    (C) Filipino should be used more in the academe.
    (D) Filipino should be removed from the curriculum.

Selection 2

(1) In the mid-1980s, the world became suddenly aware that the protective ozone shield in the atmosphere was in danger – was, in fact, greatly depleted in a huge "hole" over the frozen wastes of Antarctica.

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The mysterious stuff called ozone, which until then was known to the public chiefly as an acrid, lung-burning element of smog in overcrowded cities, was being destroyed in the stratosphere by chemicals made and released in the 20th century by humans.

(2) Ozone is a variant form of oxygen – the most life-sustaining gas of all. Under the intense ultraviolet bombardment from the sun at the upper reaches of the earth's atmosphere, normal two-atom molecules of oxygen are split into single atoms – O rather than O_2, in chemists' terms. Some of these single-oxygen atoms rejoin with O_2 to form ozone – O_3. The amount in the stratosphere is very scant, less than ten parts per million (at sea level, the layer would be about as thick as a pane of window glass), but that layer is enough to stop most of the sun's most dangerous ultraviolet rays from reaching the earth's surface, 10 to 30 miles below.

(3) The possibility of ozone destruction by man-made chemicals had been predicted as early as 1974 by two farsighted researchers, F. Sherwood Rowland and Mario J. Molina, at the University of California at Irvine.

(4) Certain industrial gases dubbed as CFCs – chlorofluorocarbons – are so higly stable and inert that they do not react with other substances in nature. They have long been used as coolants in refrigerators and air conditioners, as propellants in aerosol cans, in making foam-plastic objects, such as coffee cups and fast-food containers, and as solvents for cleasing electronic circuit boards and computer chips. But there could be great danger, warned Rowland and Molina, when these same long-lived gases drift to the upper layers of the atmosphere.

(5) In that same region where ozone is created by solar bombardment, the CFCs could break apart, they postulated, freeing chlorine atoms that could attack and destroy ozone molecules by the billions. If these were to deplete the ozone layer around the whole world, it would put all mankind at risk.

An excerpt from "National Geographic Learning Reader: Climate Change Printed Access Card" by National Geographic Learning. Cengage Learning, 2012.

22. What is the author's manner of presenting the material in the selection?

    (A) Practical
    (B) Persuasive
    (C) Informative
    (D) Argumentative

23. What use has ozone on the environment?

    (A) It provides protection from ultraviolet rays.
    (B) It provides a shield against chlorofluorocarbons.
    (C) It acts as deterrent to atmospheric changes.
    (D) It provides the substance necessary in industrial operations.

24. Why are CFCs used in industry?

    (A) They prevent contamination of food and air.
    (B) They easily dissolve in other substances to produce a cleaning agent.
    (C) They are inert, stable, and easy to form.
    (D) They are abundant in the atmosphere.

25. Which of the following titles is most appropriate for the selection?

    (A) The Risk of the Ozone Layer
    (B) The Hazards Mankind Faces
    (C) The Dangers of Ozone Formation
    (D) The Problem About Ozone Depletion

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Selection 3

(1) I was born in a log cabin on a winter. The first thing I remember is being grateful for windows. I was three years old. My mother had set me to play on a mattress carefully placed in the one ray of sunlight streaming through the one glass window of our log cabin. Baby as I was, I had ached in the agonizing cold of a pioneer winter. Lying there, warmed by that blessed sunshine, I was suddenly aware of wonder and joy and gratitude. It was gratitude for glass, which could keep out the biting cold and let in the warm sun...

(2) My father came from a family of school teachers in New England. My mother was the daughter of a hardworking Scotch immigrant. Father's family set store on ancestry. Mother's side was more practical...

(3) The year before my birth, these two young people had started West in a prairie schooner to stake a homestead claim...

(4) After mother's eighth and last baby, she lay ill for a year. The care of the children fell principally on my young shoulders. One day I found her crying.

(5) "Mary," she said, with a tenderness that was rare, "If I die, you must take care of all your brothers and sisters. You will be the only woman within eighteen miles."

(6) I was ten years old.

(7) That night and many other nights I lay awake, trembling at the possibility of being left the only woman within eighteen miles.

(8) But mother did not die. I must have been a sturdy child, for, with the little help father and his homestead partner could spare, I kept that home going until she was strong again...

(9) Every fall, the shoemaker made his rounds through the country, reaching our place last, for beyond us lay only untamed forest and wild beasts. His visit thrilled us more than the arrival of any king today. We had been cut off from the world for months. The shoemaker brought news from neighbors eighteen, forty, sixty, even a hundred and fifty miles away. Usually he brought a few newspapers too, treasured afterward for months. He remained a royal guest, for many days, until all the family was shod...

(10) By the time I was fourteen, three tremendous events had marked my life: sunlight through a windowpane, the log-rolling on the river when father added two rooms to our cabin, and the night I thought mother would die and leave me the only woman within eighteen miles...

(11) But there was a fourth event that was the most tremendous. One night father handed my mother a letter. Our Great-Aunt Martha had willed father her household goods and personal belongings and a modest sum that to us was a fortune. Someone back East "awaited his instructions." Many discussions followed, but in the end my mother gained her way. Great-Aunt Martha's household goods were sold at auction. Father, however, insisted that her "personal belongings" be shipped to us...

(12) After a long, long wait, one day a trunk and two packing cases came. It was a solemn moment when the first box was opened. Then mother gave a cry of delight. Sheets and bedspreads edged with lace! Real linen pillowcases with crocheted edgings. Soft woolen blankets and bright handmade quilts. Two heavy, lustrous tablecloths and two dozen napkins, one white set hemmed, and one red-and-white, bordered with a soft fringe.

(13) What the world calls wealth has come to me in years. Nothing ever equaled in my eyes the priceless value of Great-Aunt Martha's "personal belongings."

(14) I was in a seventh heaven of delight. My father picked up the books and began to read, paying no attention to our exclamations over dresses and ribbons, the boxful of laces, or the little shell-covered

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case holding a few ornaments in gold and silver and jet. Then I picked up a napkin.

(15) "What are these for?" I asked curiously.

(16) My father slammed his book shut. I had never seen such a look on his face.

(17) "How old are you, Mary?" he demanded suddenly.

(18) I told him that I was going on fifteen.

(19) "And you never saw a table napkin?"

(20) His tone was bitter and accusing. I didn't understand—how could I?

(21) Father began to talk, his words growing more and more bitter. Mother defended herself hotly. Today, I know that justice was on her side. But in that first adolescent self-consciousness, my sympathies were all with father.

(22) Mother had neglected us—she had not taught us to use table napkins! People in history used them.

(23) From that time on, we used napkins and a tablecloth on Sundays.

An excerpt from "The Log-Cabin Lady: An Anonymous Autobiography" by Marie Mattingly Meloney

26. What was the proof that Mary was a healthy ten-year old?

(A) She learned to hunt for food.
(B) She never got sick in spite of the hardships.
(C) She helped her father cut the logs for their cabin.
(D) She ran the household when her mother was sick.

27. What experience made the greatest impact on Mary's life?

(A) Rolling logs on the river with her father
(B) The fear of being orphaned by her mother
(C) Inheriting their great-aunt's personal belongings
(D) The warmth of sunlight streaming through the glass window

28. What does the underlined statement in paragraph 9 mean?

(A) He was a giver of gifts.
(B) He was a loyal subject of the king.
(C) He received the best treatment from the people.
(D) He was known to everybody in the community.

29. What triggered the bitter argument between husband and wife?

(A) The wife's decision to sell great-aunt Martha's household goods
(B) The wife's insistence on using table napkins on Sundays only
(C) The realization that the children did not have table manners
(D) The wife's failure to teach her children table manners

Selection 4

(1) Sean sighed as he leaned his head back against the tree. The good ones always left him with this amalgamation of thoughts and feelings, this clash of excitement and longing with the realization of routine and boredom.

(2) He closed his eyes and listened to the water in the stream and rustle of the leaves. He felt the warmth on his bare feet where they encountered the light at the edge of the shade. This is why he came to the park to read. The solitary quiet made the transition back to reality somewhat more bearable.

(3) It had been this way ever since he first realized the marks on the page

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conveyed meaning, created worlds that couldn't be seen with his eyes. Thomas, Winnie and Piglet, Max; they took him with them. Taught him loyalty, goodness, and perseverance. Let him step into their worlds and wonder if he could ever be so daring, or humble, or wise. Then, as he grew, he rafted down the Mississippi with Tom and Huck, ate hotroot soup at Redwall Abbey, climbed Mount Doom with Frodo and Sam, and fought chaos with Pendragon and Lord Foul with Foam follower and Bannor. Then he had discovered that heroes were not always make believe. He circumnavigated the earth, climbed Mount Everest, and explored the South Pole with real people.

(4) But he was born too late for that type of real-life adventure. Everything was charted and analyzed. Plus, he was stuck here in this remote corner of the universe where life dribbled by in a monotonous, mind-numbing rhythm. Digging minerals out of the ground day after day. Mom and Dad said they were a "tight knit community". He longed for a new face, a new horizon. He had never seen an ocean or mountain with his own eyes. He had never been more than 110 kilometers from this little nowhere where he was born. He wanted to go, he wanted to do and be! Adventure, excitement, heroic deeds were what he was made for. If only he could have been born 500, 200, or even 50 years ago. Then he would have lived a life worth living. Then he would not have to live with this constant ache and yearning.

(5) He felt it first as a deep, bone resonating vibration that was far below the frequency his ears could discern. The vibration increased until the leaves were dancing on the limbs above him and he could hear the deep rumble as it climbed up the octaves. He glanced up just in time to see the stars beyond the park's observation strips occluded by a blunt, massive object as it hurtled past. He glanced at his comp pad. Exactly what he had been thinking. Five ten on the dot and another 210 metric tons on its way in-system to the Goslar refinery station. The same thing three times a day, every day. His eyes strayed toward the brightest star, the Sun. Somewhere in that general direction was Earth, where it started, birthplace of the human race. Oh, to be free to walk under open sky, to have a whole world to discover.

An excerpt from Otte, N. (2018). Born Too Late. 365 tomorrows.

30. Which of the following descriptions does NOT illustrate the park where Sean stayed?

    (A) The rustling leaves can be heard.
    (B) The sunlight was touching Sean's bare feet.
    (C) The sound of the flowing stream is soothing.
    (D) The noise of the children playing brings happiness.

31. Why does Sean prefer to go to the park to read?

    (A) He thinks of running away from his family.
    (B) He sets his fantasies in the park where he stays.
    (C) The serene location helps in transporting his imagination.
    (D) There are other things to do at the park when he gets bored reading.

32. Based on the story's premises, how would Sean most likely feel when he finally visits Earth?

    (A) Disappointed
    (B) Nonchalant
    (C) Fulfilled
    (D) Ecstatic

33. Which of the following best expresses the theme of the passage?

    (A) Books can take our imaginations to far-flung places.
    (B) It is almost impossible to recover what was once lost.
    (C) Amazement engulfs us when we look at the heavens.
    (D) People need to cope with the drudgery of everyday life.

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Selection 5

(2) The pain of loss…

(3) Now I can say with certainty that I had never understood others suffering from unbearable loss of a dear person. For my part, it used to be pity, compassion. When this happened to me, when my dear mother died, I started to understand all those people who lost someone they loved. There are perhaps no proper words to describe this pain, at least none used on this planet. This intolerable pain which tears you apart, which is like a stone on your heart, and which make tears run down your face with each recollection of the dear person who passed away. Time is unlikely to alleviate this hurt, no matter what others claim.

(4) The memory of my mother will follow me wherever I go, and however far tinting my dreams with a gentle scent of rosemary and the shimmering silver of her laugh. My mother had a serene charisma and a soothing aura around her. She was there to show me my first butterfly and my first rain. She was there when I made my first steps. She taught me to smile and laugh.

(5) Moreover, my mother listened to all my fears and apprehensions with a gentle patience, which can only be admired. She covered my winters of self-doubt and self-hate with such warm and tender blankets of caring love. Her eyes were so soft, wandering, and full of comprehension when they focused on other people. My mother's greatest desire was only to cherish, protect, and lavish affection and care to her family. When I had really bad times, she washed me with her healing sympathy and distracted me with her brilliant humor. My mother was the only person I could really rely on.

(6) No one has ever loved me the way she did. My mother was my sole support system, whenever something exciting happened or there was a crisis in my life, she was the first person I turned to. She understood me better than anyone else I knew. I miss our talks, her support, advices, care.

(7) When my family and I found out she had cancer, I was really distraught. It was a life changing moment. I tried to do my best to support my mother as soon as I got to know that she was incurably ill. I started doing more around the house (washing dishes, cooking for my mom, etc., so that she could rest). Apart from that, I tried to find out as much as possible about the breast cancer, still hoping that something could be done to make her healthy again. Till the day she finally passed away I had a hope that everything would turn out to be fine.

(8) These days I try hard not to think about the past and focus on my future. Although my pain is still as immense as on the day of my mom's death, now I clearly see what I have to do to go on living. I must not stay on my own, with all my depressive thoughts. I will have to take up any activity – start yoga, read books, play computer games, do sports. It is also worth using my time and energy for helping other people. Helping others will give a meaning to my life, and I will have less time to plunge into the abyss of despair. To stride over grief. Without forgetting the person that meant so much in your life.

Excerpt from "The Most Significant Person In My Life" from http://www.custom-essays.org/examples/My_Mother_Narrative_Essay.html

34. "She covered my winters of self-doubt and self-hate with such warm and tender blankets of caring love" means that her mother _____.

(A) has also self-doubt and self-hate sometimes
(B) accepts and understands her limitations as a person
(C) is always vigilant of her self-doubt and self-hate
(D) thinks that she is a person doubting herself

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35. The following could be a generalization about the story EXCEPT _____.

(A) treasuring each moment with the person you love is important
(B) the child learned her lesson in life when her mother passed away
(C) the joy of life is achieved through loving and caring for each other
(D) children should appreciate every moment they are with their parents

36. What does the persona imply when she said, "She was the first person I turned to"?

(A) She always considers her mother as a person to rely on
(B) She always asks her mother to be with her all the time
(C) She picks up the pieces of life with her mother
(D) She guarantees herself that her mother will heed her

Selection 6

(1) "I can't say no," says Madhavi Dandu, a professor and clinician at the University of California, San Francisco School of Medicine. "I've always been that way. Most of the time I've framed it as: There are a lot of things I want to do. But now that I have two school-age children, everything I do takes away from something else, or makes it impossible to do any one thing really well."

(2) In addition to teaching, seeing patients, and sitting on faculty committees, Dandu fields queries from trainees seeking guidance. All get a yes. "I received that support," she says, "so I have to be there for the students."

(3) At her children's school, she sits on the PTA board, a race and equity curriculum committee, and the district's advisory council, and she put together a Science Day for students featuring 30 interactive stations. "The school asked if I could do a two-day event next year," she says. Guess who said "Sure."

(4) Dandu has high expectations for herself and doesn't like disappointing people. If something is challenging, she just figures she needs to step up. "I say yes more than I want to because it's hard to figure out what matters most," she says. Though she's benefited from the projects she's taken on and the relationships she's forged, the toll is mounting. "The checklist in my brain is always expanding. It's mentally exhausting."

(5) For such a tiny word, no looms large in our consciousness. We don't like saying it, and we don't like hearing it. But it is the sharpest weapon we have in the clash between our desire to connect with and please others and our need to assert and defend our individuality and autonomy. How we wield no—if we do at all—has great consequences for our mental health and our ability to thrive.

(6) We come up with plenty of reasons not to say no. We don't want to hurt anyone's feelings. We don't like confrontation or conflict. Or we've been raised to be polite and helpful.

(7) The word is so fraught, says linguist Nick Enfield of the University of Sydney, that we've developed a litany of ways to communicate it without actually having to say it. "A recurrent way to say no is to not say it at all, but to produce signals that suggest a no is on the way, such as an audible breath and an interjection like 'well,' or 'um,' " he says. "A second-long delay by itself is often enough for others to know that a no is coming." An observant requester might take in these cues and jump in, in a prosocial way, to let the imminent rejecter off the hook: "…or maybe you're too busy?"

An excerpt from Flora, C. (2017). The Hardest Word. Retrieved from http://psychologytoday.com

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37. According to the article, all of the following are the reasons why it is difficult to say "no" EXCEPT _____.

(A) something is done out of a deep sense of gratitude
(B) the benefit one gets from the commitments outweigh the disadvantages
(C) people feel that it is immodest to disappoint others who ask favor from us
(D) it is sometimes difficult to determine which engagement is more important

38. How do the examples from Madhavi Dandu's life support the argument that keeping a sound mental health entails learning to say "no"?

(A) It illustrates the dilemma faced by majority of the articles' readers, especially those who are considered to be millennials.
(B) It shows the potential mental illnesses associated with the common cultural understanding about saying "no".
(C) It provides a personal narrative to give an in-depth insights about the topic though these cannot be said to be true of all individuals.
(D) It does not give us an accurate picture of how saying "no" maintains a sound mental health.

39. Which of the following can best substantiate the underlined statement in paragraph 5?

(A) A statistical report consisting of a small sample size taken from a local high school
(B) A group of psychologists issuing a statement in agreement with the writer's assertions
(C) An article from a peer-reviewed journal that features a study, the conclusion of which is the underlined statement
(D) A personal narrative from another source that corresponds to the ideas conveyed in the underlined statement

40. Which of the following is most likely to be considered as a valid criticism of the article?

(A) The example and narratives given reflect only the perspective of an accomplished professor and does not mention other professions, let alone blue collar workers.
(B) The credibility of the article is highly diminished by the fact that it has been published in a popular magazine rather than a scholarly compendium.
(C) The psychologist mentioned in the article lack the credentials in order to make an authoritative claim.
(D) The featured topic is immaterial to the needs of the general reading public.

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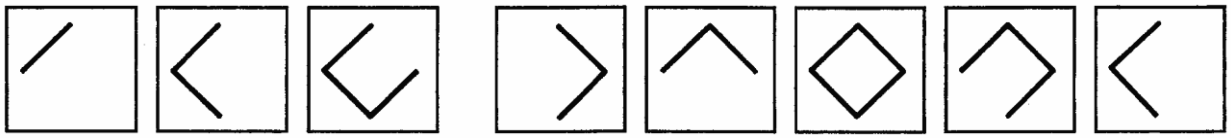
TEST B. INDUCTIVE REASONING

Section 1. Figure Series

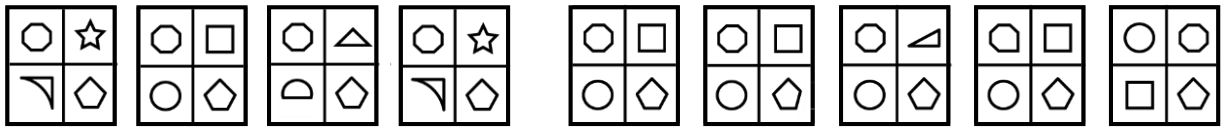
DIRECTIONS: In each of the following items, the series of figures at the left shows a continuously changing pattern. Discover this pattern of change. From the five figures at the right, choose the one which should come next in the series.

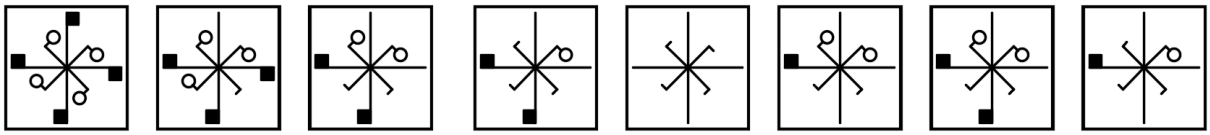
Example:

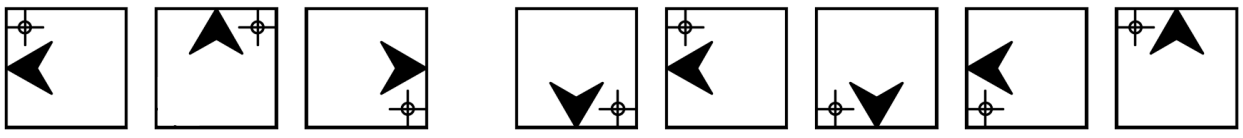


In the example, the three diagrams at the left show a line increasing progressively in such a way as to approach a closed figure. If another line is added, the resulting form would look exactly like figure C at the right. Thus, the correct answer is C.

There are other principles involved in the items aside from that illustrated in the example.

1. 

2. 

3. 

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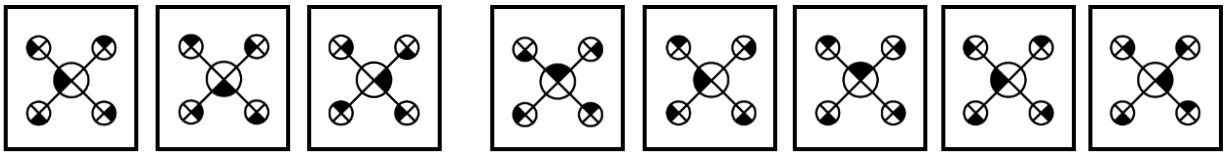
4. 
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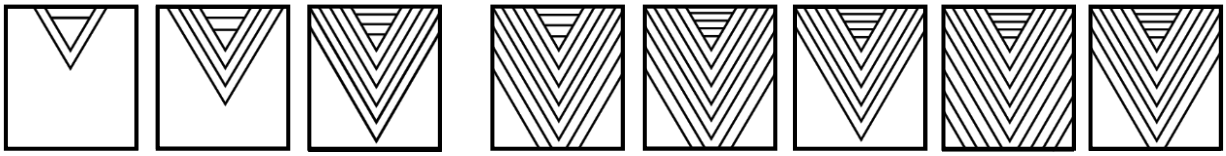
5. 
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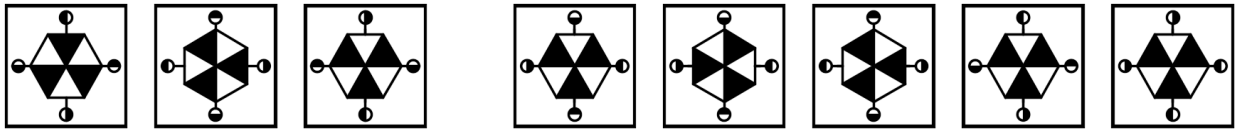
6. 
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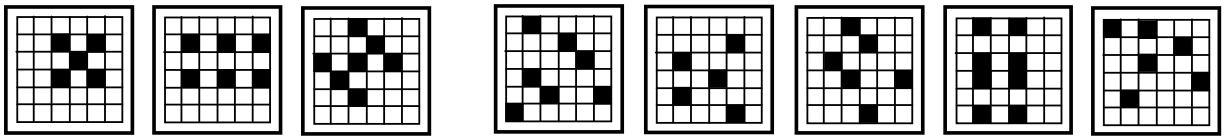
7. 
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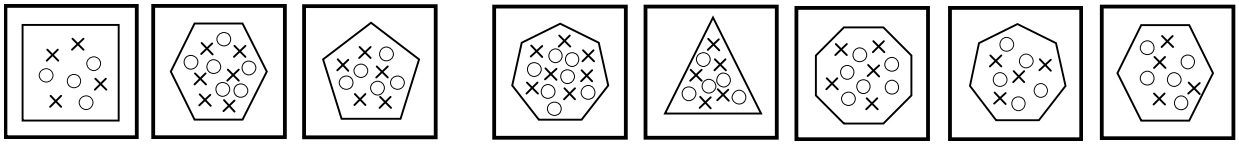
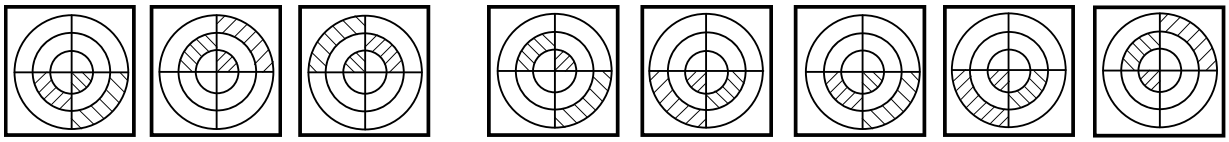
8. 
(A) (B) (C) (D) (E)

9. 
(A) (B) (C) (D) (E)

PRACTICE SET

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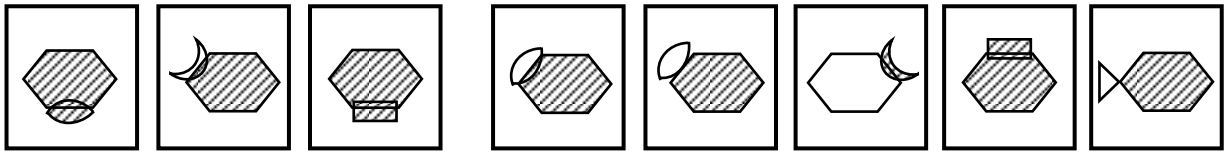
10. 
(A) (B) (C) (D) (E)

11. 
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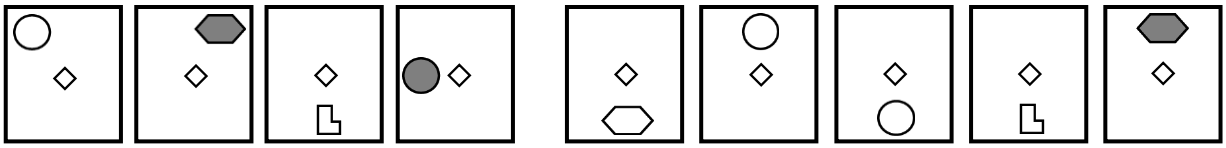
12. 
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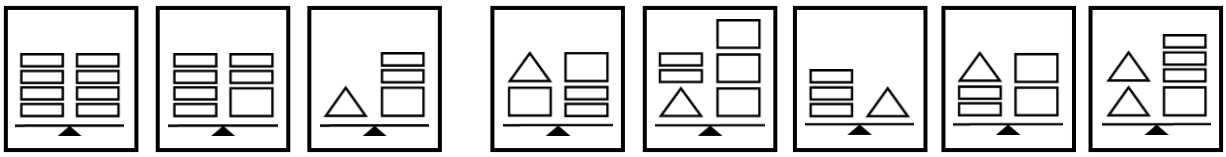
13. 
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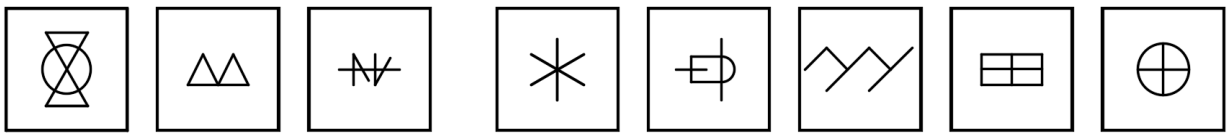
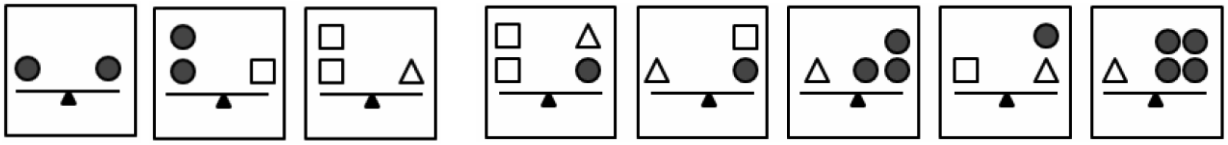
14. 
(A) (B) (C) (D) (E)

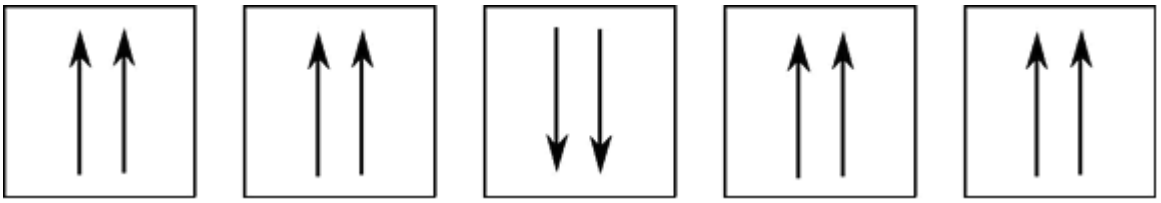
15. 
(A) (B) (C) (D) (E)

PRACTICE SET

Section 2. Figure Grouping

DIRECTIONS: Each item in this section consists of five figures, four of which are similar in some respect. Choose the figure that is different from the other four.

Example:

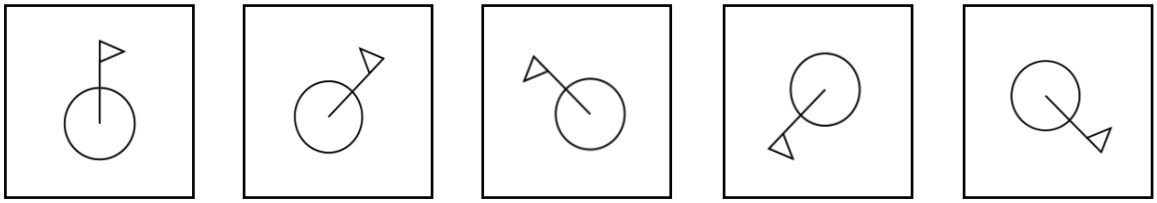


(A) (B) (C) (D) (E)

In the example, the correct answer is figure C, because the arrows are all pointing downward, whereas the arrows in each of the other figures are all pointing upward.

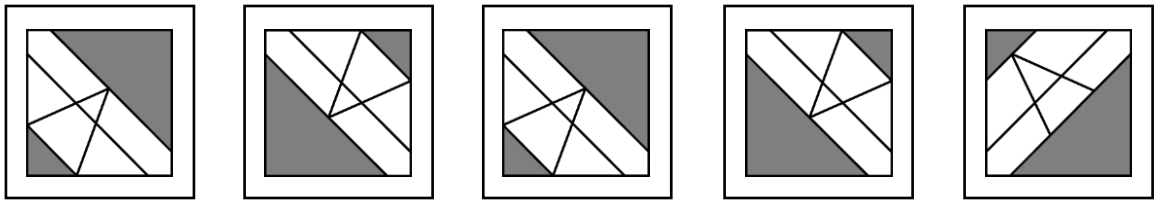
There are other principles involved in the items aside from that illustrated in the example.

16.



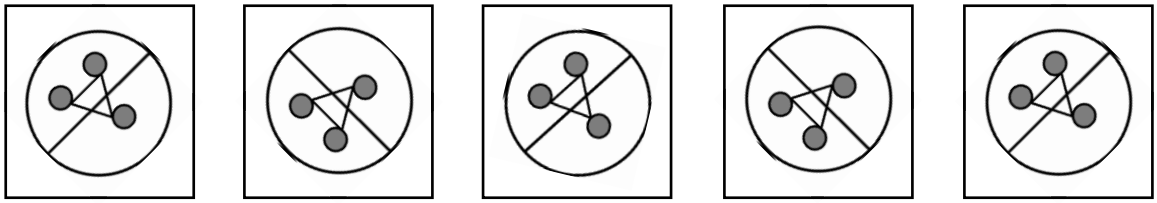
(A) (B) (C) (D) (E)

17.



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

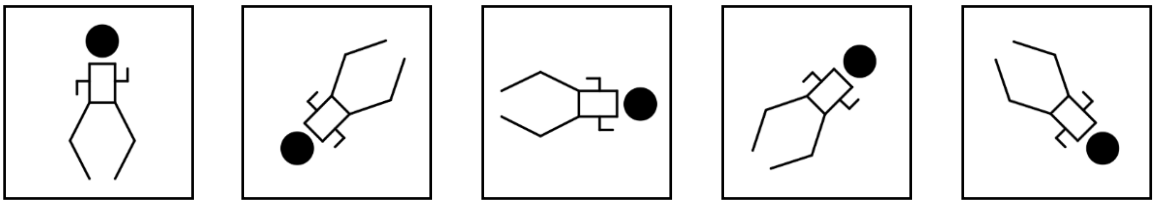
18.



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

PRACTICE SET

19.



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

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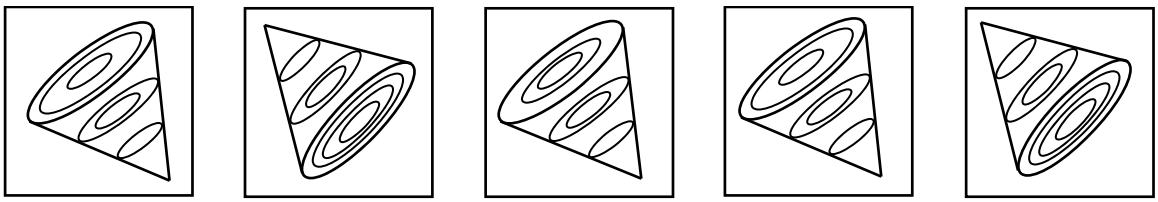

(A) (B) (C) (D) (E)

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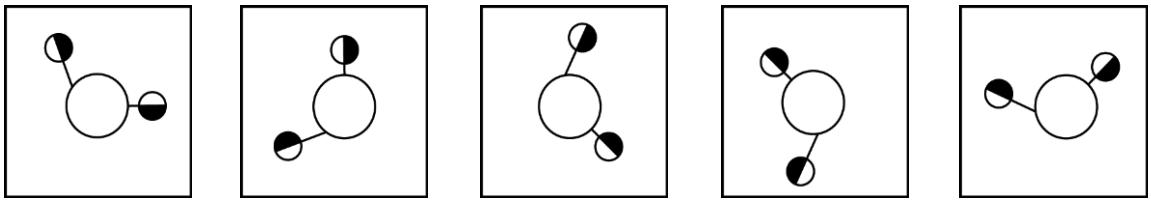
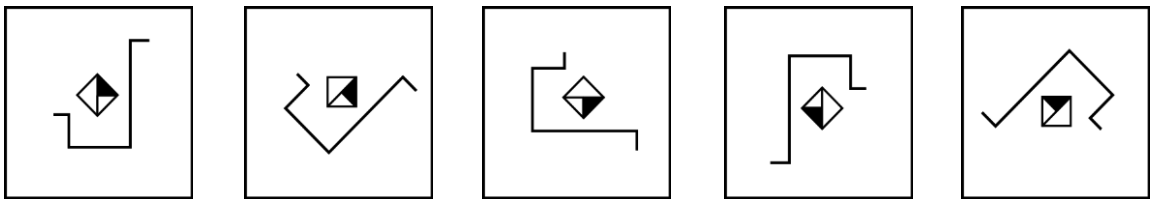


(A) (B) (C) (D) (E)

22.

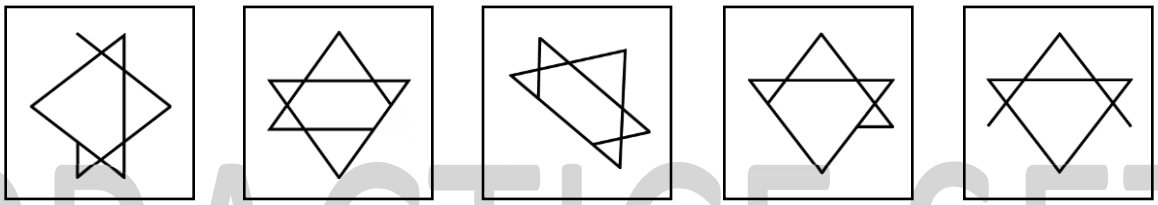


(A) (B) (C) (D) (E)

23.

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

24.

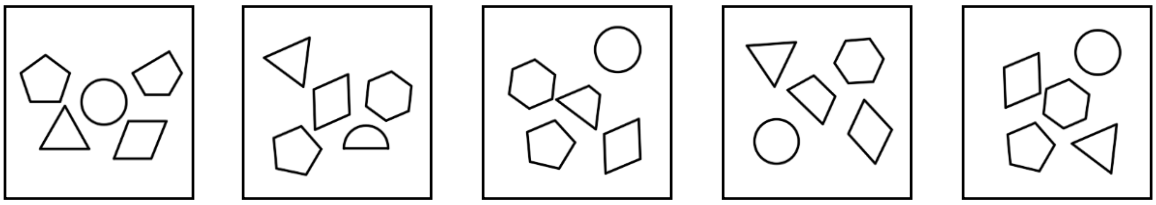


(A) (B) (C) (D) (E)

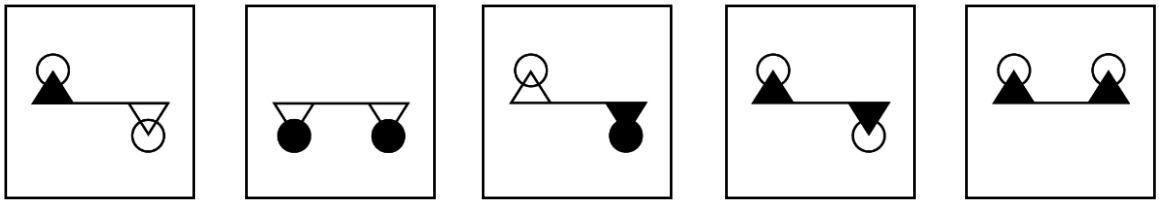
PRACTICE SET

25. 

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

26. 

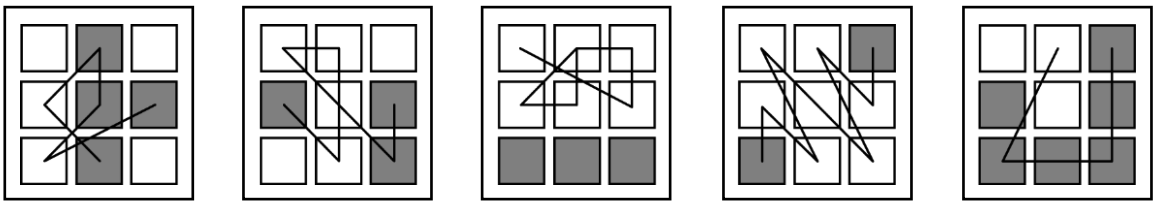
(A) (B) (C) (D) (E)

27. 

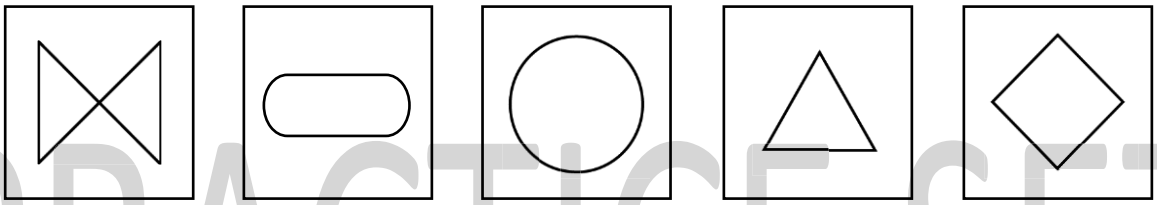
(A) (B) (C) (D) (E)

28. 

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

29. 

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

30. 

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

PRACTICE SET

Section 3. Number and Letter Series

DIRECTIONS: In the following items, discover the principle involved in the series. Select from the five choices the number or letter that should come next in the series.

Examples:

1. 2 4 6 8 10

(A) 1 (D) 14
(B) 12 (E) 13
(C) 16

2. A C E G I

(A) J (D) H
(B) L (E) M
(C) K

In example 1, the correct answer is B, because 2 is added to a number to obtain the next number. In example 2, the correct answer is C, because the given succession of letters has intervals of two.

There are other principles involved in the items aside from those illustrated in the examples.

31. 50 51 49 52 48 53 47

(A) 46 (D) 54
(B) 45 (E) 56
(C) 57

32. 100 96 89 85 79 75 70

(A) 70 (D) 62
(B) 68 (E) 56
(C) 66

33. A D H K O R V

(A) X (D) Y
(B) U (E) Z
(C) W

34. AEB CFD GKH ILJ MQN ORP

(A) QRS (D) TSW
(B) QST (E) SWT
(C) TSU

35. 11 22 12 24 14 28 18

(A) 26 (D) 8
(B) 33 (E) 36
(C) 34

36. 3 3 5 2 8 13 7

(A) 49 (D) 42
(B) 0 (E) 14
(C) 1

37. X T W R U P R

(A) L (D) M
(B) N (E) O
(C) P

38. C M E Q G U I

(A) K (D) W
(B) M (E) X
(C) Y

39. CD VU HI QP MN

(A) KL (D) SR
(B) RS (E) LK
(C) KJ

40. 10 11 16 18 23 26

(A) 27 (D) 29
(B) 32 (E) 31
(C) 30

PRACTICE SET

TEST C. QUANTITATIVE

Section 1. Fundamental Operations

DIRECTIONS: In the following items, select the correct answer from the given choices.

Example:

$$\frac{12 + 3 - 5}{5} =$$

(A) $\frac{1}{2}$ (C) 2

(B) $\frac{1}{5}$ (D) 5

The correct answer is C.

1. $5{,}845 + 24{,}768 - 9{,}651 - 7{,}325 =$

(A) 13,637
(B) 13,647
(C) 20,962
(D) 23,288

2. $\dfrac{x+\dfrac{2x}{x-2}}{1+\dfrac{4}{x^2-4}} =$

(A) $x^2 + 4$
(B) $x^2 + 2$
(C) $x + 4$
(D) $x + 2$

3. $\dfrac{(25^{-1}) + (25^{-2})}{(625^0) + (25^{-2})} =$

(A) 26
(B) $\frac{25}{26}$
(C) $\frac{1}{5}$
(D) 0

4. $(4\sqrt{3})\,(5\sqrt{3}) =$

(A) $20\sqrt{3}$ (C) 60
(B) 27 (D) 180

5. $3^{n+2} + (3^{n+3} - 3^{n+1}) =$

(A) $\frac{1}{3^{n+1}}$ (C) $\frac{3}{8}$
(B) $\frac{1}{3^{n+2}}$ (D) $\frac{1}{3}$

6. $(x + y)^3 + (x - y)^3 =$

(A) $2x(x^2 + 3y^2)$ (C) $2y(y^2 + 3x)$
(B) $2x^2(x + 3y)$ (D) $2y^2(y + 3x)$

7. $1 + \frac{6}{x} + \frac{9}{x^2} =$

(A) $(x + 3)^2$
(B) $\frac{x^2 + 9}{x^2}$
(C) $(x^2 + 9)x^2$
(D) $\frac{(x + 3)^2}{x^2}$

8. $2(x - y) + 3 + (x + 3y) - 2(x + 1) =$

(A) $x - y + 1$ (C) $y + 1$
(B) $x + y + 1$ (D) $x + 1$

9. Simplify: $\sqrt[6]{9x^8y^{12}}$

(A) $x^6y^{12}\sqrt[6]{9x^2}$
(B) $xy^2\sqrt[3]{3x}$
(C) $x^6y^{12}\sqrt[3]{3x}$
(D) $xy^2\sqrt[3]{9x^2}$

PRACTICE SET

GO ON TO THE NEXT PAGE ⇨

10. Simplify: $\left(8^{\frac{3}{4}} + 2^3\right)^{\frac{1}{2}}$

(A) $2\sqrt{3}$
(B) $4\sqrt{3}$
(C) 8
(D) 12

11. Simplify: $\dfrac{\sqrt[3]{(x+3)^2}}{\sqrt[3]{x-3}}$

(A) $\sqrt[3]{x+3}$

(B) $\dfrac{1}{x-3}$

(C) $\dfrac{\sqrt[3]{(x^2-3)^2}}{x-3}$

(D) $\dfrac{\sqrt[3]{(x^2-9)^2}}{x-3}$

Section 2. Problem Solving

DIRECTIONS: Solve each problem and select the correct answer from the given choices.

Example:

Anita earned the following scores in 5 quizzes: 82, 93, 76, 85, and 80. What is her average score?

(A) 81.2 (C) 83.2

(B) 82.0 (D) 85.2

The correct answer is C.

12. The sum of two numbers is 19. If 5 times the smaller number is 3 less than twice the larger number, what are the numbers?

(A) 12 and 7 (C) 14 and 5
(B) 13 and 6 (D) 15 and 4

In items 13 and 14, refer to the following information:

In a list of numbers, the first is 2, the second is 7, and each subsequent number is the sum of all the preceding numbers.

13. What is the fifth number in the list?

(A) 18 (C) 36
(B) 22 (D) 72

14. If the 100th number in the list is x, what is the 103rd number in the list?

(A) x + 3 (C) 3x
(B) x + 8 (D) 8x

---

15. The jeepney fare for the first 4 kilometers is ₱9.50 and for each additional kilometer, 25¢ is added. How much is the fare for a 17-kilometer distance?

(A) ₱13.00 (C) ₱13.25
(B) ₱12.75 (D) ₱11.75

PRACTICE SET

GO ON TO THE NEXT PAGE ⇨

16. One box measures 7 meters by 15 meters by 8 meters. Another box measures 8 meters by 9 meters by 10 meters. By how many cubic meters is the volume of one box greater than the other?

(A) 37 m^3 (C) 120 m^3
(B) 57 m^3 (D) 840 m^3

17. If out of the top 1,000 corporations in the Philippines, 45% were established before January 1, 1980 and 25% were established before January 1, 1970, how many of these corporations were established between January 1, 1970 and January 1, 1980?

(A) 180 (C) 300
(B) 200 (D) 380

{1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233}

18. In the number series above, what is the probability of getting an even number?

(A) $\frac{1}{3}$ (C) $\frac{1}{2}$
(B) $\frac{5}{12}$ (D) $\frac{2}{3}$

19. The total interest on two investments is ₱464, where the rate of interest of one investment is 8% and the other, $7\frac{1}{2}$ %. How much was invested at 8% if the total investment is ₱6,000?

(A) ₱3,500 (C) ₱2,800
(B) ₱3,200 (D) ₱2,500

20. A teacher demonstrates an equilateral triangle to his class. If one side is 12 centimeters, what is the area of the triangle?

(A) $18\sqrt{3}$ square centimeters
(B) $12\sqrt{3}$ square centimeters
(C) $72\sqrt{3}$ square centimeters
(D) $36\sqrt{3}$ square centimeters

21. In a Mathematics test, the mean score of a class of 30 students is 45 while that of another class of 20 students is 48. What is the mean score of the two classes?

(A) 45.8 (C) 46.5
(B) 46.2 (D) 46.8

22. The dimensions of a rectangular shape cardboard are 8 cm by 3 cm rotated about the axis of 8 cm which to form a cylinder. What is the volume of the cylinder?

(A) 24π cubic centimeters
(B) 20π cubic centimeters
(C) 18π cubic centimeters
(D) 22π cubic centimeters

23. Suppose a triangle is plotted on a coordinate plane with vertices located at (–9, 3), (–3, –9) and (13, –1). What is the perimeter of the triangle?

(A) $24\sqrt{5}$
(B) $25 + 14\sqrt{5}$
(C) $39\sqrt{5}$
(D) $25 + 6\sqrt{5}$

24. The sum of money of Billy and Zander is ₱4,230. If two-thirds of Billy's money is equal to five-sixth of Zander's money, how much money does Billy have?

(A) ₱2,350 (C) ₱2,820
(B) ₱3,525 (D ₱1,180

25. Three pipes can be used to fill up a swimming pool with water. It takes 9 minutes for Pipe A to fill up the pool while 6 minutes for Pipe B. A third pipe, Pipe C, takes 4 minutes to empty the pool. How long would it take to fill the swimming pool given these conditions?

(A) 10 minutes
(B) 11 minutes
(C) 25 minutes
(D) 36 minutes

PRACTICE SET

GO ON TO THE NEXT PAGE ⇨

Section 3. Data Interpretation

DIRECTIONS: In this section, some sets of data are given. Each set is followed by questions regarding the data. Select the correct answer from the options given.

EATING HABITS OF ENGLISH SAMPLE BETWEEN 2001 AND 2013
AND ITS RELATION TO MORTALITY RATE

Cause of death	Portions of fruit and vegetables consumed per day Decreased risk of death				
	0<1	1<3	3<5	5<7	7+
All causes	0%	14%	29%	36%	42%
Cancer	0%	11%	19%	25%	25%
Heart disease	0%	9%	18%	20%	31%

Source: University College London, ScienceDaily, 2014.
URL: http://www.sciencedaily.com/releases/2014/03/140331194030.htm

26. What is the best graphical presentation of the table shown above?

(A) Bar graph
(B) Pie chart
(C) Flowchart
(D) Line graph

27. Which of the following shows that while there was an increase in daily portions of fruits and vegetables consumed, the mortality rate did NOT change?

(A) Cancer, 5<7
(B) Cancer, 7+
(C) Heart disease, 3<5
(D) Heart disease, 5<7

PRACTICE SET

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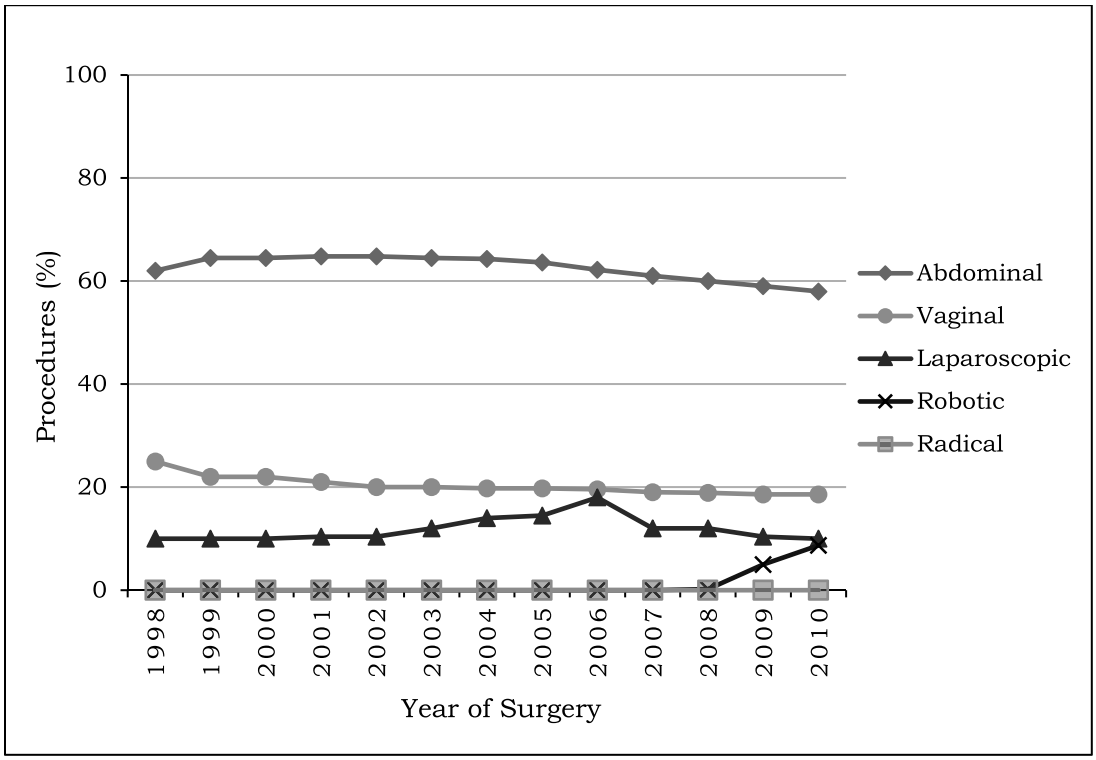
The data from the American College of Obstetricians and Gynecologists (2013) on hysterectomy procedures that were performed from 1998 to 2010 is shown in the graph below.



Source: Unearthed, Science, Health and Environmental News
URL: https://unearthedmag.wordpress.com/2014/05/08/in-a-culture-of-hysterectomy-is-informed-consent-enough/

28. The above graph shows that the percentage of performed vaginal hysterectomy decreases. Which of the following is the best estimate for the percent decrease from 1998 to 2010?

    (A) 17%
    (B) 32%
    (C) 50%
    (D) 57%

29. Which of the following statements is(are) correct?

    I. The median percentage of abdominal surgery is in the year 2004.
    II. The percentage of vaginal and laparoscopic hysterectomy were the same in 2006.

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

PRACTICE SET

The table below shows the performance of four Higher Education Institutions (HEIs) in the CPA Licensure Examinations from 2015 to 2017.

Higher Education Institution (HEI)	Year					
	2015		2016		2017	
	Total Number of Examinees	Total Number of Passers	Total Number of Examinees	Total Number of Passers	Total Number of Examinees	Total Number of Passers
Ateneo de Zamboanga University	58	49	70	61	51	41
De La Salle University-Manila	91	82	97	86	109	101
University of the Philippines - Diliman	77	76	69	69	69	69
University of Santo Tomas	382	364	388	352	362	333

Source: http://www.thesummitexpress.com/2017/10/performance-of-schools-october-2017-cpa-board-exam-results.html

30. On the whole, how many examinees from the University of Santo Tomas took the licensure examination?

    (A) 1,132
    (B) 1,103
    (C) 1,096
    (D) 1,049

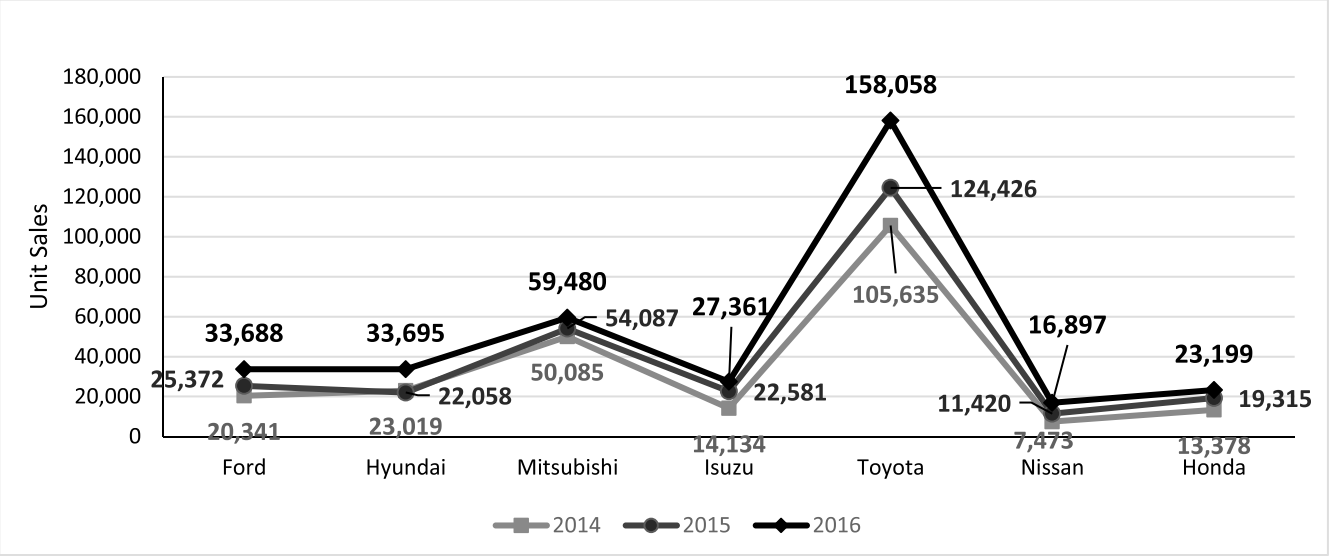
31. Which of the following correctly shows the descending order of HEIs by passing percentage in 2017?

    I. Ateneo de Zamboanga University
    II. De La Salle University-Manila
    III. University of the Philippines-Diliman
    IV. University of Santo Tomas

    (A) III – II – I – IV
    (B) III – II – IV – I
    (C) III – IV – I – II
    (D) III – IV – II – I

PRACTICE SET

The graph below shows the best-selling car companies in the Philippines from 2014 to 2016.



Source: https://www.autoindustriya.com/auto-industry-news/philippine-auto-industry-sets-new-milestone-in-2016-with-404-051-units-sold.html

32. If Toyota and Mitsubishi are the top 2 best-selling car companies, which of the following arrangements shows the next top selling car companies down to the least during the given years?

I. Ford
II. Hyundai
III. Isuzu
IV. Nissan
V. Honda

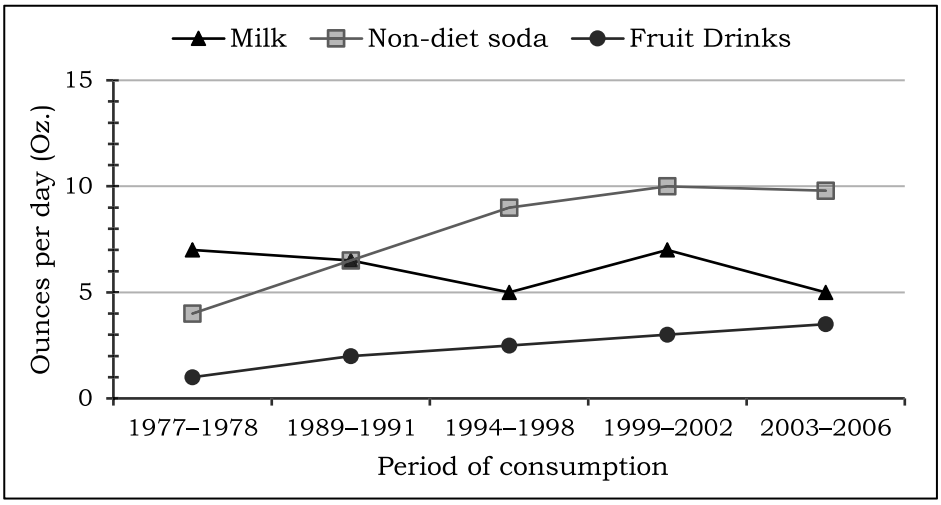
(A) I – II – III – V – IV
(B) II – I – III – V – IV
(C) I – III – II – V – IV
(D) II – I – V – III – IV

33. Which of the following statements can be inferred from the graph?

(A) All the given car companies consistently increased in unit sales from 2014 to 2016.
(B) In 2016, the increase in unit sales of the given car companies was twice as much as that of the increase in 2015 from 2014.
(C) In 2016, the unit sales of Hyundai increased by more than 50% of its unit sales in 2015.
(D) Toyota had the highest percent increase in 2016.

PRACTICE SET

Consumption of Different Types of Drinks by US Adults



Source: Healthline, Nutrition, 2017.
URL: http://www.healthline.com/nutrition/11-graphs-that-show-what-is-wrong-with-modern-diet

34. Between 1994 and 1998, if the adults consume half of the amount of fruit drinks that they normally consume in a year, how much would it be?

    (A) 230.25 oz.
    (B) 360.50 oz.
    (C) 456.25 oz.
    (D) 502.50 oz.

35. In the span of 1999–2002, how many ounces of non-diet soda did the adults drink in total?

    (A) 1,095 oz.
    (B) 1,460 oz.
    (C) 10,950 oz.
    (D) 14,600 oz.

36. Which of the following statements about the consumption of drinks in general is FALSE?

    (A) Between 1999 and 2002, adults consumed 10 ounces of non-diet soda per day.
    (B) Fruit drinks has the same amount of intake throughout the years.
    (C) Between 1989 and 1991, adults consumed approximately the same amount of milk and non-diet soda per day.
    (D) Adults consumed less milk everyday compared to non-diet soda.

PRACTICE SET

2014 SOUTHEAST ASIA PC SHIPMENTS

Country	Quarter 1	Quarter 2	Quarter 3
Indonesia	814,878	739,533	590,576
Malaysia	317,155	315,036	293,772
Philippines	196,956	212,773	279,957
Singapore	157,463	181,877	198,582
Thailand	297,820	266,010	341,137
Vietnam	193,643	213,796	352,741
Grand Total	1,977,915	1,929,025	2,056,765

Source: Forbes, 2014.
URL: https://www.forbes.com/sites/susancunningham/2014/11/21/indonesian-smartphone-shipments-surge-55-in-2014/

37. Which of the following countries showed a consistent decrease in PC shipments?

(A) Thailand
(B) Vietnam
(C) Indonesia
(D) Malaysia

38. Which of the following graphs will make the data easier to convey?

(A) Flow chart
(B) Pie chart
(C) Stem and leaf plot
(D) Time series graph

39. Which of the following countries has the LEAST increase in PC shipments during the third quarter of 2014?

(A) Philippines
(B) Singapore
(C) Thailand
(D) Vietnam

40. Which of the following statements is(are) correct regarding the PC shipments in Southeast Asia?

I. The shipments of PC in Indonesia and Malaysia fell by 20% and 7%, respectively during the third quarter.
II. In Singapore and Vietnam the PC shipments appear to be continuously upswing until the third quarter by 9% and 65%, respectively.
III. The PC shipments of the Philippines was raised by 25% after the second quarter.

(A) II only
(B) I and II only
(C) I and III only
(D) I, II, and III

PRACTICE SET

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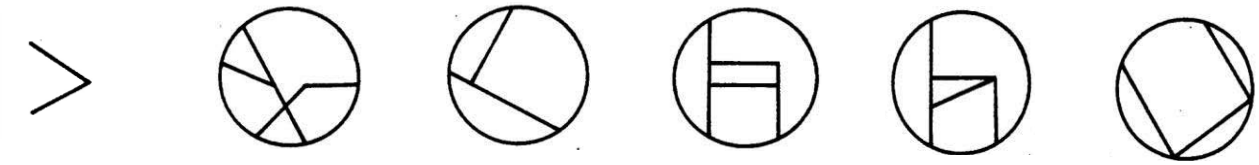
TEST D. PERCEPTUAL ACUITY

Section 1. Hidden Figure

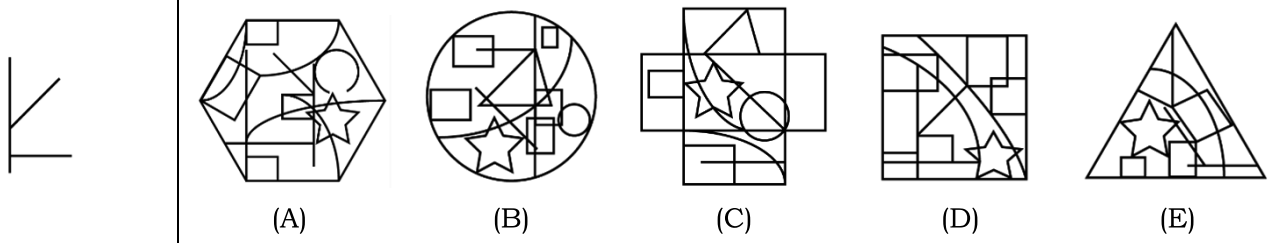
DIRECTIONS: Each item in this section is made up of a simple figure at the left and five complicated drawings at the right. Select the complicated drawing that contains the simple figure. The hidden figure may appear in a different position, but it must have the same shape and size as the simple figure.

Example:

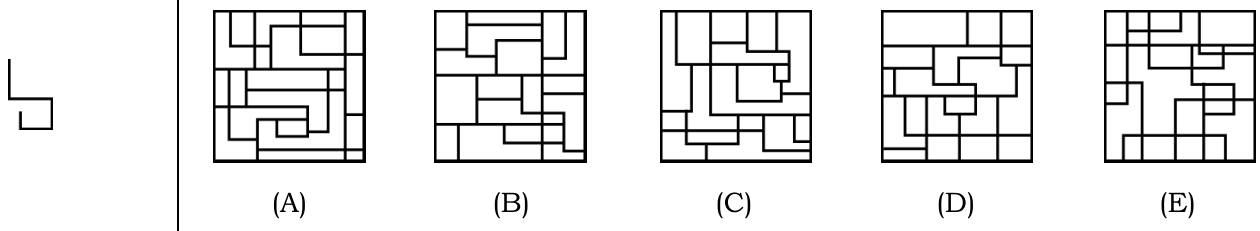


In the example, the correct answer is D, because it contains the simple figure at the left.

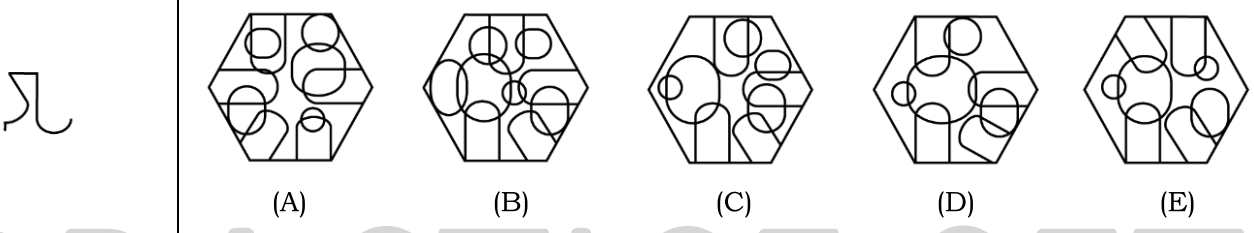
1.



2.



3.

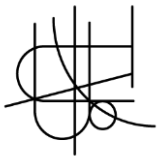


PRACTICE SET

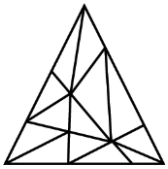
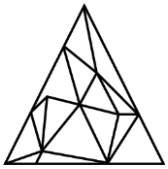
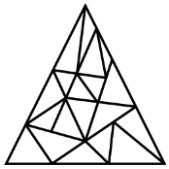
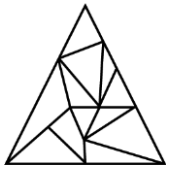
4.

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

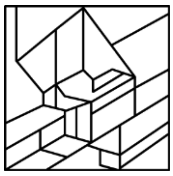
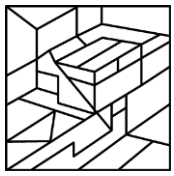
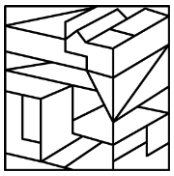
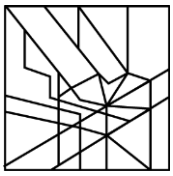
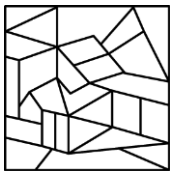
5.

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

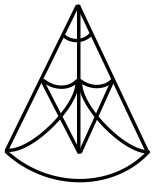
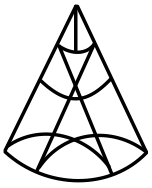
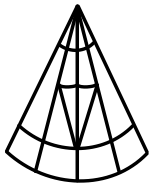
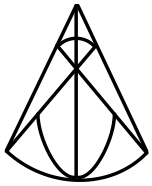
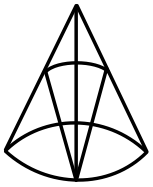
6.

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

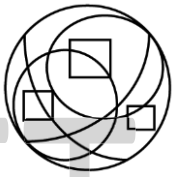
7.

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

8.

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

9.

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

PRACTICE SET

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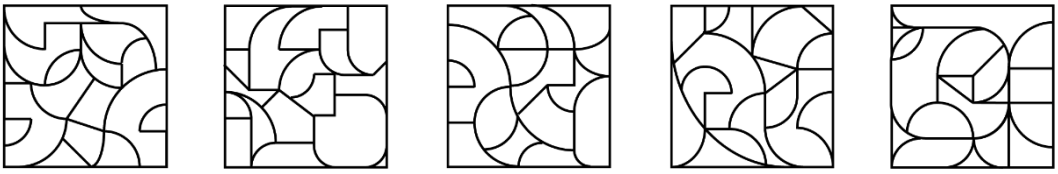
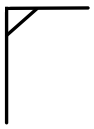
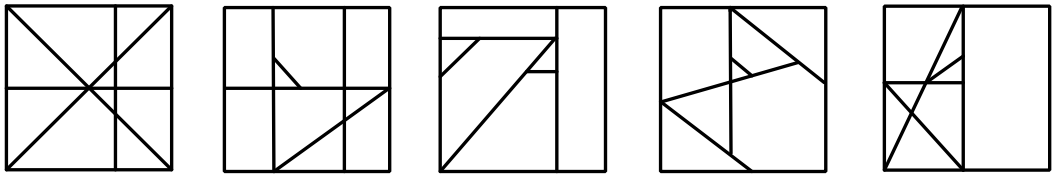
10. 

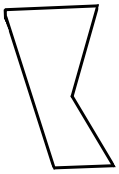


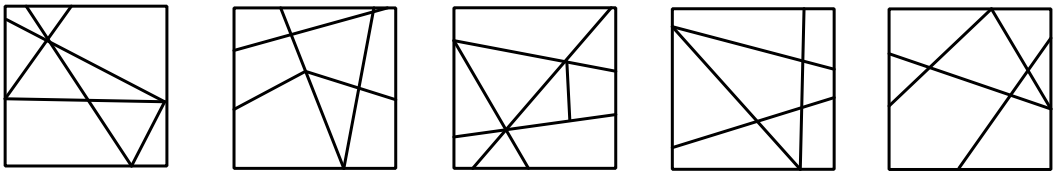
(A) (B) (C) (D) (E)

11. 

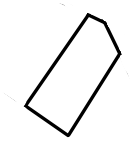


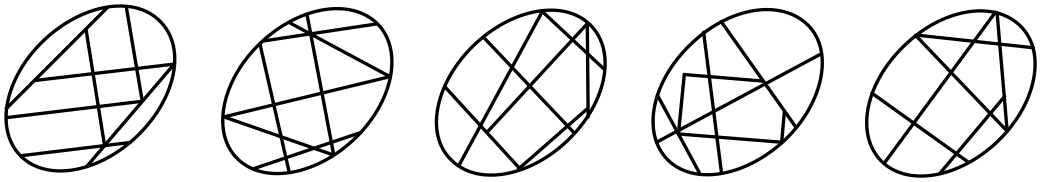
(A) (B) (C) (D) (E)

12. 



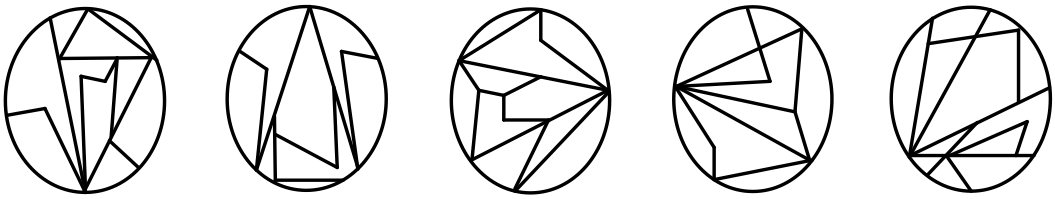
(A) (B) (C) (D) (E)

13. 



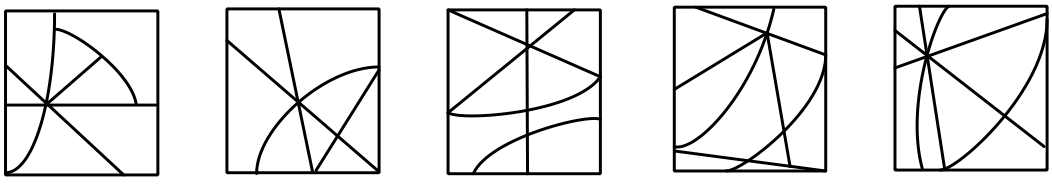
(A) (B) (C) (D) (E)

14. 



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

15. 



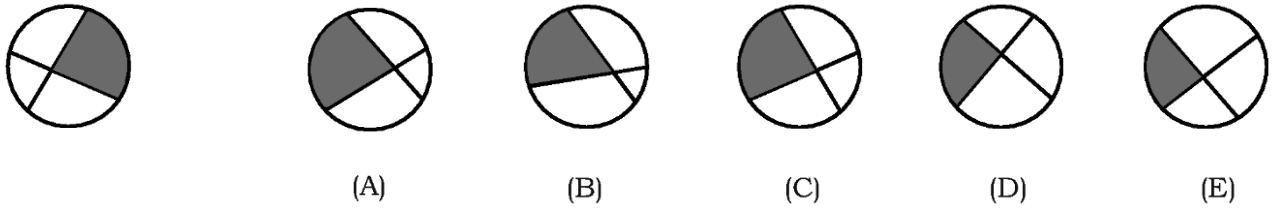
(A) (B) (C) (D) (E)

PRACTICE SET

Section 2. Mirror Image

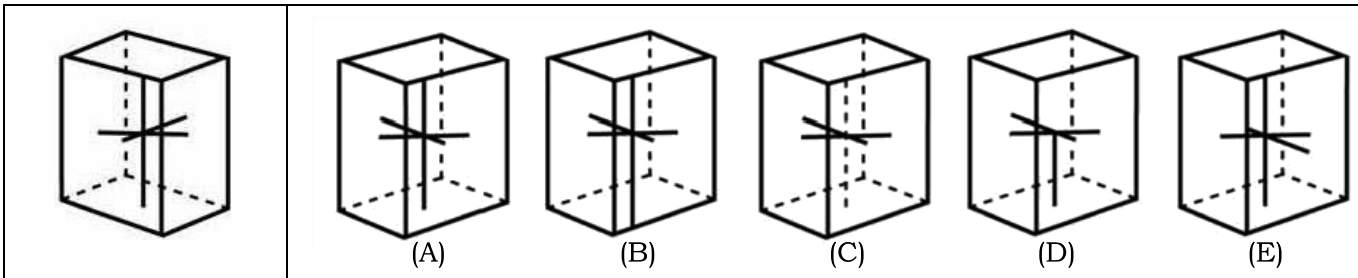
DIRECTIONS: Each item in this section consists of a figure followed by five options. Select from the options the mirror image of the given figure.

Example:

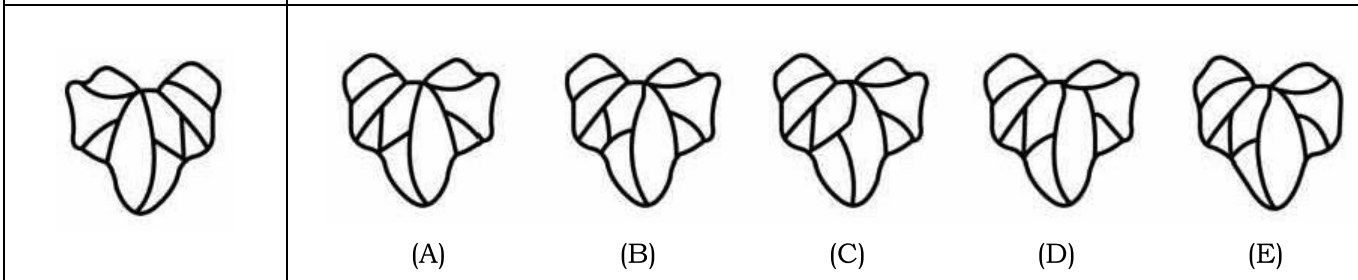


In the example, the correct answer is C.

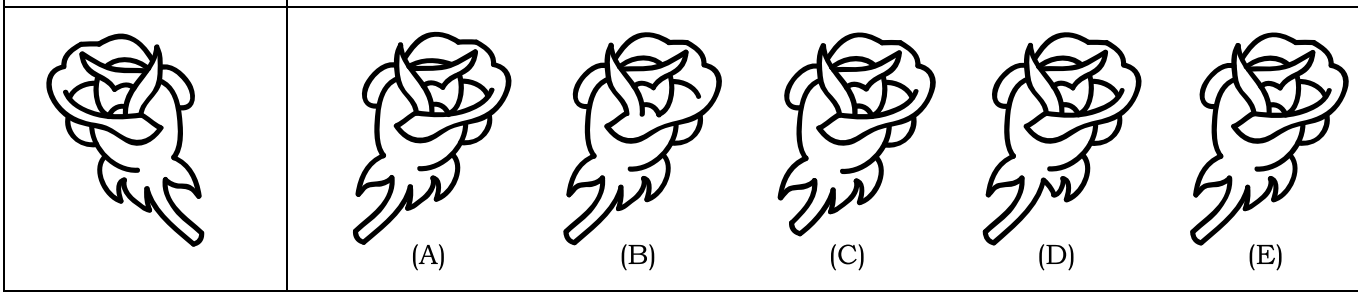
16.



17.



18.



PRACTICE SET

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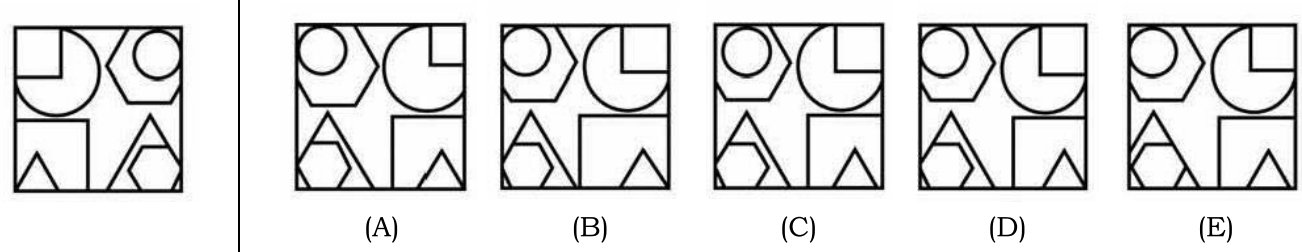
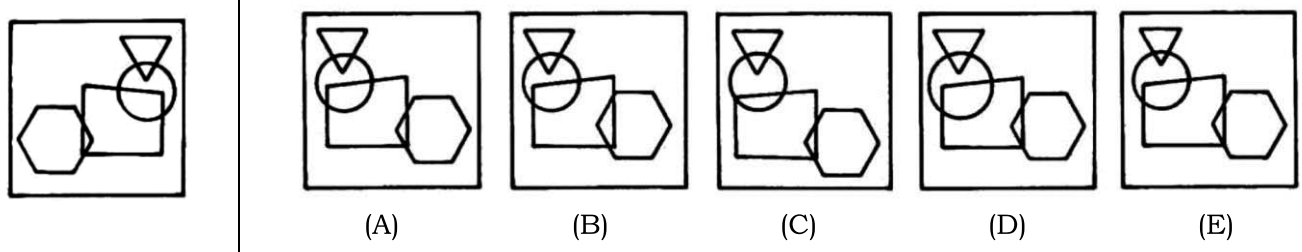
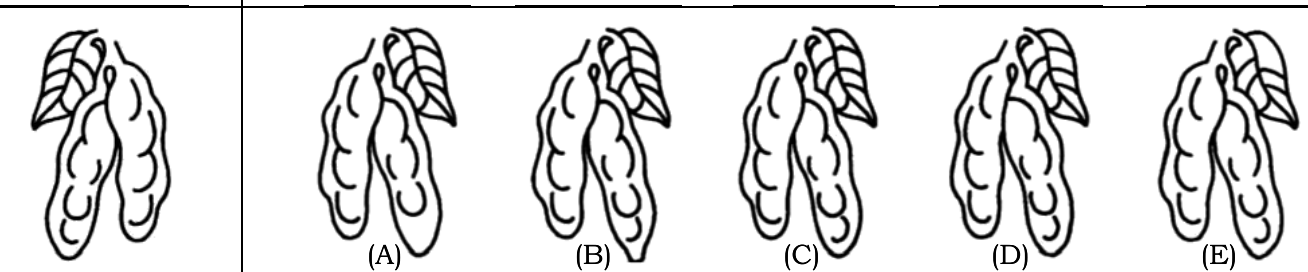
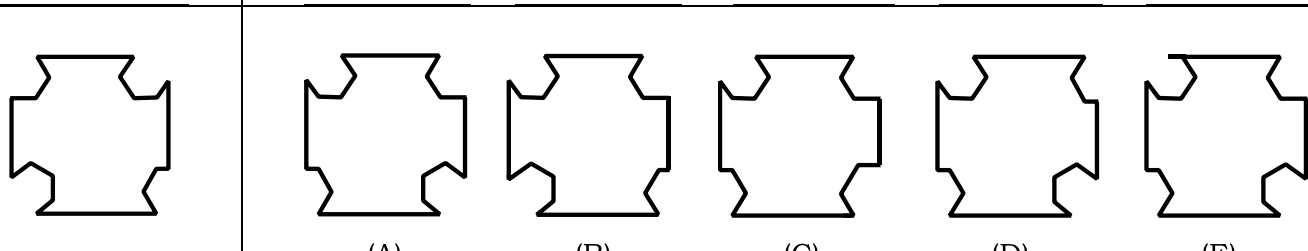
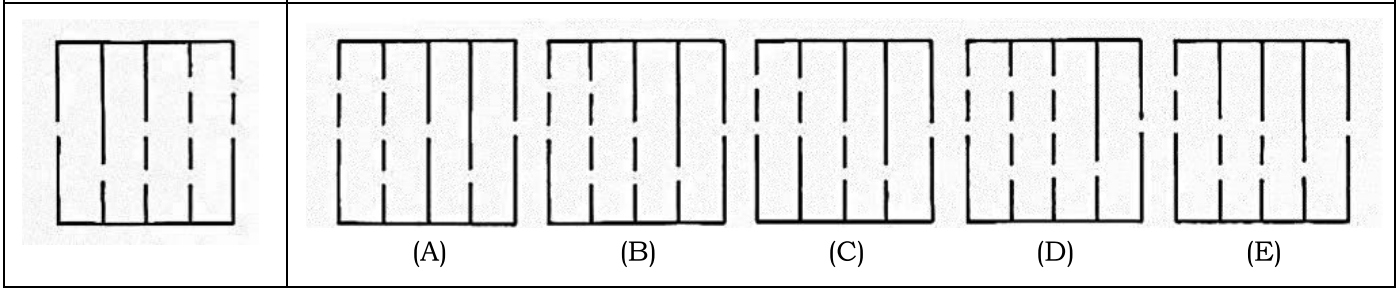
19. 

20. 

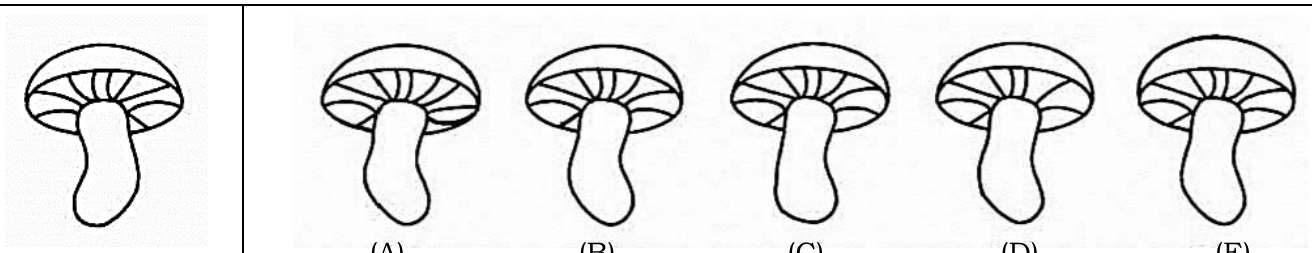
21. 

22. 

23. 

PRACTICE SET

24.



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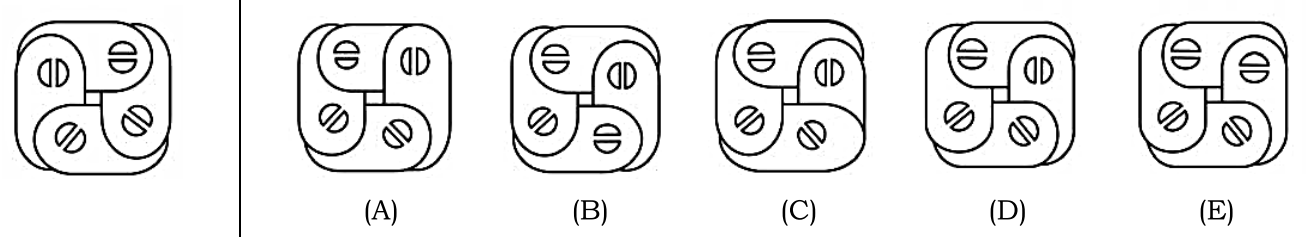
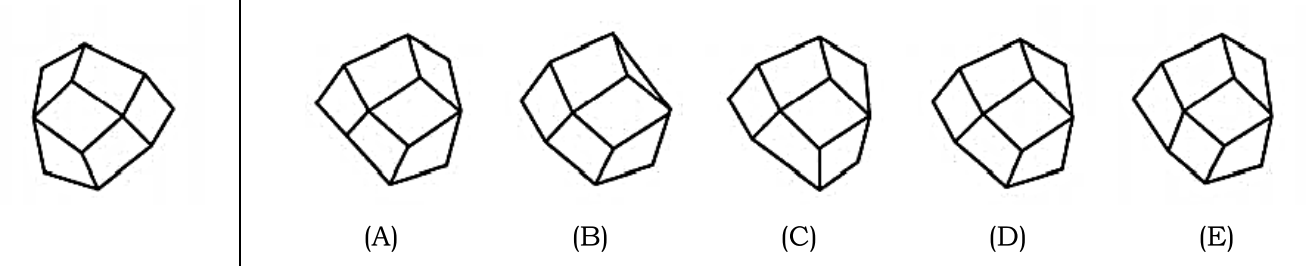
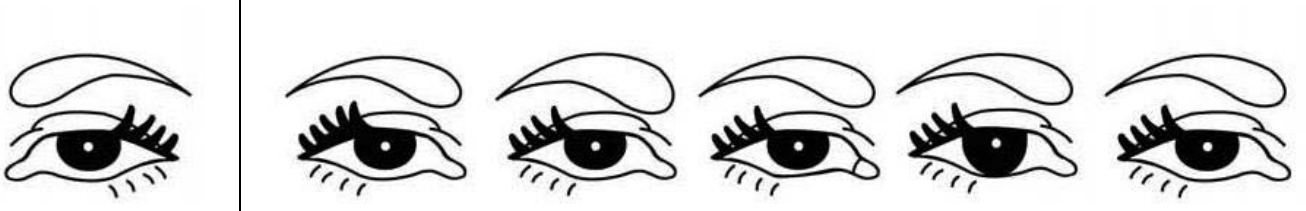


26.



27.



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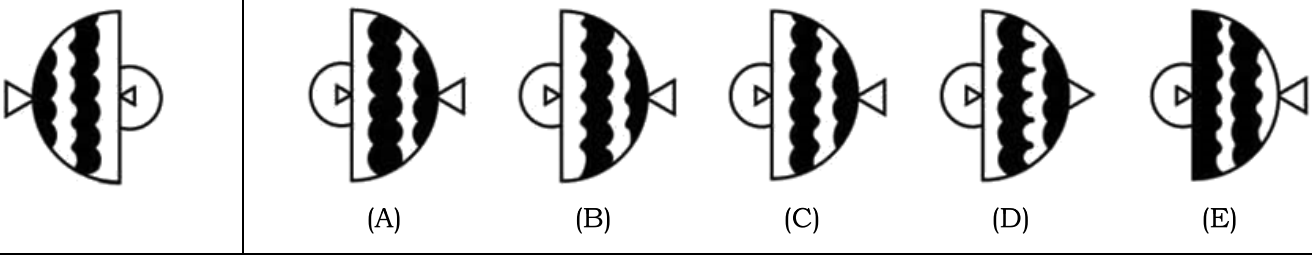

PRACTICE SET

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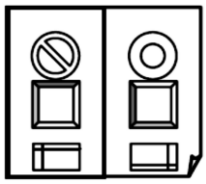
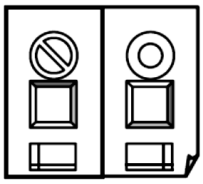
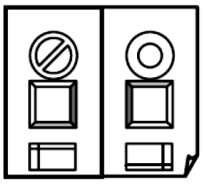
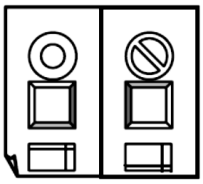
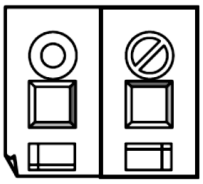
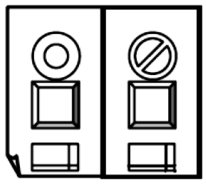
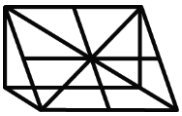
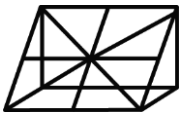
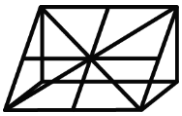
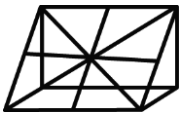
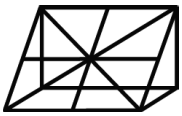
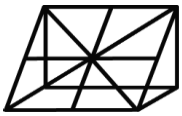
29.



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

30.



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

PRACTICE SET

Section 3: Identical Information

DIRECTIONS: Each item in this section consists of a name and an address, a bibliographical entry, or a sentence. From the options that follow, select the one which exactly matches the given information in word sequence, spelling, and punctuation.

Example:

West, J. B. (1974). *Digestive Physiology*. Baltimore: Williams, Inc.

(A) West, J. B. (1974). *Digestive Physiology*. Baltimore: William, Inc.

(B) West, J. B. (1974). *Digestive Physiology*. Baltimore; Williams, Inc.

(C) West, B. J. (1974). *Digestive Physiology*. Baltimore: Williams, Inc.

(D) West, J. B. (1974). *Digestive Physiology*. Baltimore: Williams, Inc.

(E) West, J. B. (1994). *Digestive Physiology*. Baltimore: Williams, Inc.

In the example, the correct answer is D, because the bibliographical entry in option D has exactly the same text as the one given although the way it is printed is different.

31. *Bordetella pertussis*, a pathogenic bacterium that secretes adenylate cyclase toxins, and enables the AC-II to enter host cells, where the exogenous AC activity undermines normal cellular processes.

(A) *Bordetella pertussis*, a pathogenic bacterium that secretes adenylate cyclase toxins and enables the AC-II to enter host cells, where the exogenous AC activity undermines normal cellular processes.

(B) *Bordetella pertussis*, a pathogenic bacterium that secretes adenylate cyclase toxins, and enables the AC-II to enter host cells, where the exogenous AC activity undermines normal cellular processes.

(C) *Bordetella pertusses*, a pathogenic bacterium that secretes adenylate cyclase toxins, and enables the AC-II to enter host cells, where the exogenous AC activity undermines normal cellular processes.

(D) *Bordetella pertussis*, a pathogenic bacterium that secretes adenylate cyclase toxins, and enables the AC-II to enter host cells, where the exogenous CA activity undermines normal cellular processes.

(E) *Bordetella pertussis*, a pathogenic bacterium that secretes adynelate cyclase toxins, and enables the AC-II to enter host cells, where the exogenous AC activity undermines normal cellular processes.

PRACTICE SET

32. He should continue on Prilosec 40 mg a day as part of a chronic antireflux regimen. Biopsies of the stomach are negative for Helibacter.

(A) He should continue on Prilosec 40 mg a day as part of a chronic anti-reflux regimen. Biopsies of the stomach are negative for Helibacter.

(B) He should continue on Prilosec 40 mg a day as part of a chronic antireflux regimen. Biopsies of the stomach are negative for Helibacter.

(C) He should continue on Prolisec 40 mg a day as part of a chronic antireflux regimen. Biopsies of the stomach are negative for Helibacter.

(D) He should continue on Prilosec 40 mg a day as part of a chronic antireflux regimen. Biopsies of the stomach are negative for Helibacteria.

(E) He should continue on Prilosec 40 mg a day, as part of a chronic antireflux regimen. Biopsies of the stomach are negative for Helibacter.

33. Carbon dioxide dissolved in water forms carbonic acid, H_2CO_3.

(A) Carbon dissolved dioxide in water forms carbonic acid, H_2CO_3.

(B) Carbon dioxide dissolved in water forms carbonic acid H_2CO_3.

(C) Carbon dioxide dissolved in water forms carbonic acid, H_2CO_3.

(D) Carbon dioxide dissolved in water form carbonic acid, H_2CO_3.

(E) Carbon dioxide dissolves in water forms carbonic acid, H_2CO_3.

34. Clarke, R.P. (1963). *Heredity (3rd ed.)*. Englewood Cliffs, N.J.: Prentice-Hall

(A) Clarke, R.P. (1963). *Heredity (3rd ed.)*. Englewood Cliffs, N.Y.: Prentice-Hall

(B) Clarke, R.P. (1963). *Heredity (3rd ed.)*. Englewood Cliffs, N.J.: Prentice-Hall

(C) Clark, R.P. (1963). *Heredity (3rd ed.)*. Englewood Cliffs, N.J.: Prentice-Hall

(D) Clarke, R.P. (1963). *Heredity (3rd ed.)*. Englewood Cliffs, N.J.: Prentice-Hale

(E) Clarke, P.R. (1963). *Heredity (3rd ed.)*. Englewood Cliffs, N.J.: Prentice-Hall

PRACTICE SET

35. Franks, J., et al. (1959). The role of anxiety in psychophysiological reactions. *A.M.A. Arch. Neurol. Psychiat.*, 81:227-232.

    (A) Franks, J., et al. (1959). The role of anxiety in psychophysiological reaction. *A.M.A. Arch. Neurol. Psychiat.*, 81:227-232.

    (B) Franks, J., et al. (1959). The role of anxiety in psychophycological reactions. *A.M.A. Arch. Neurol. Psychiat.*, 81:227-232.

    (C) Franks, J., et al. (1959). The role of anxiety in psychophysiological reactions. *A.W.A. Arch. Neurol. Psychiat.*, 81:227-232.

    (D) Franks, J., et al. (1959). The role of anxiety in psychophysiological reactions. *A.M.A. Arch. Neurol. Psychiat.*, 81:227-232.

    (E) Franks, J., et al. (1959). The role of anxiety in psychophysiological reactions. *A.M.A. Arch. Neuro. Psychiat.*, 81:227-232.

36. Ku Choi Tong Drug Store
    Cubao Branch No. 3
    2369 Aurora Blvd., Q.C.

    (A) Ku Chai Tong Drug Store
    Cubao Branch No. 3
    2369 Aurora Blvd., Q.C.

    (B) Ku Choi Tong Drug Store
    Cubao Branch No. 3
    2396 Aurora Blvd., Q.C.

    (C) Ku Choi Tong Drug Store
    Cubao Branch No. 3
    2369 Aurora Blvd, Q.C.

    (D) Ku Choi Tong Drug Store
    Cubao Branch No. 8
    2369 Aurora Blvd., Q.C.

    (E) Ku Choi Tong Drug Store
    Cubao Branch No. 3
    2369 Aurora Blvd., Q.C.

37. Yucuanseh Drug, Inc.
    284 Dasmariñas Street
    P.O. Box 1761
    Manila, Philippines

    (A) Yucuanseh Drug, Inc.
    284 Dasmariñas St.
    P.O. Box 1761
    Manila, Philippines

    (B) Yucuanseh Drug, Inc.
    284 Dasmariñas Street
    P.O. Box 1671
    Manila, Philippines

    (C) Yucuanseh Drug, Inc.
    284 Dasmariñas Street
    P.O. Box 1761
    Manila, Phillippines

    (D) Yucuanseh Drug, Inc.
    284 Dasmariñas Street
    P.O. Box 1761
    Maynila, Philippines

    (E) Yucuanseh Drug, Inc.
    284 Dasmariñas Street
    P.O. Box 1761
    Manila, Philippines

38. Phosphorous acid, H_3PO_3, can be prepared by the action of water upon P_4O_6, PCl_3, PBr_3, or PI_3.

    (A) Phosphorous acid, H_3PO_3, can be prepared by the action of water upon P_4O_6, P_3Cl, PBr_3, or PI_3.

    (B) Phosphorous acid, H_3PO_3, can be prepared by the action of water upon P_6O_4, PCl_3, PBr_3, or PI_3.

    (C) Phosphorous acid, HPO_3, can be prepared by the action of water upon P_4O_6, PCl_3, PBr_3, or PI_3.

    (D) Phosphorous acid, H_3PO_3, can be prepared by the action of water upon P_4O_6, PCl_3, PBr_3, or PI_3.

    (E) Phosphoros acid, H_3PO_3, can be prepared by the action of water upon P_4O_6, PCl_3, PBr_3, or PI_3.

PRACTICE SET

GO ON TO THE NEXT PAGE ⇨

39. Books on China Rare & O/P. Also Japan & SE Asia. Latest catalogue from Oxus Books, 121 Astonville St., London SW 18.

    (A) Books on China Rare & O/P. Also Japan & SE Asia. Latest catalogoe from Oxus Books, 121 Astonville St., London SW 18.

    (B) Books on China Rare & O/P. Also Japan & SE Asia. Latest catalogue from Oxus Books, 121 Astonvilla St., London SW 18.

    (C) Books on China Rare & O/P. Also Japan & SE Asia. Latest catalogue from Onus Books, 121 Astonville St., London SW 18.

    (D) Books on China Rare & O/P. Also Japan & SE Asia. Latest catalogue from Oxus Book, 121 Astonville St., London SW 18.

    (E) Books on China Rare & O/P. Also Japan & SE Asia. Latest catalogue from Oxus Books, 121 Astonville St., London SW 18.

40. The end product of glycolysis is pyruvic acid, an important source of energy in all aerobic cells.

    (A) The end product of glycolyses is pyruvic acid, an important source of energy in all aerobic cells.

    (B) The end product of glycolysis is pyruvic acid, an important source of energy in all airobic cells.

    (C) The end product of glycolysis is pryuvic acid, an important source of energy in all aerobic cells.

    (D) The end product of glycolysis is pyruvic acid, an important source of energy in all aerobic cells.

    (E) The end products of glycolysis is pyruvic acid, an important source of energy in all aerobic cells.

STOP! WAIT FOR FURTHER INSTRUCTIONS.

PRACTICE SET

PS NMAT_0619

NMAT

National Medical Admission Test *Part 2*

PRACTICE SET

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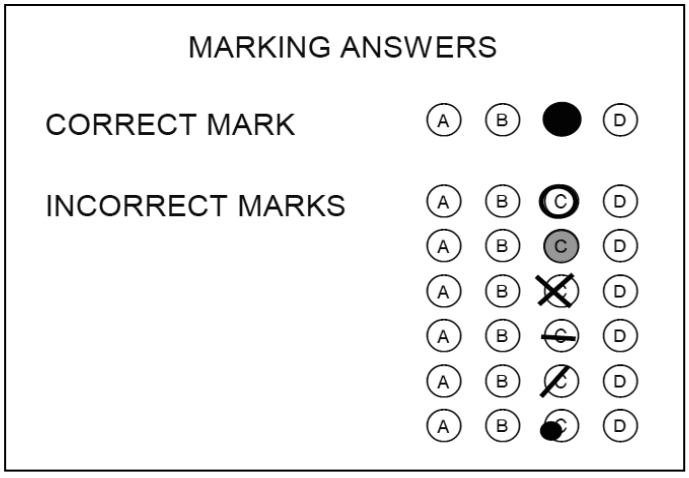
Center for
Educational
Measurement, Inc.

THE TEST OF EXCELLENCE

GENERAL DIRECTIONS

Part 2 of the National Medical Admission Test consists of four subtests. Each subtest contains multiple-choice items.

For each item, select your answer from the options given. On your answer sheet, shade the circle marked with the letter of your chosen answer. For example, if your answer to an item is option C, then completely shade the circle marked C as shown below. Make sure your mark on the circle is dark. Avoid incorrect shading of circles as they may not be recognized as an answer.



Make sure you are marking the answer columns corresponding to the item number you are on. Mark only one answer for each item. If you want to change your answer, erase the first answer completely. Incomplete erasures will be interpreted as another answer thereby producing "multiple answers." Items with multiple answers are automatically considered wrong.

Do not write anything on this test booklet. Use the blank pages of your answer sheet for your scratch work.

When you finish a subtest, proceed to the next until you have completed the entire test.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

PRACTICE SET

TEST A. BIOLOGY

1. Three animals have different forelimbs. Animal 1 has flippers, animal 2 has wings, and animal 3 has no limbs. Which of the following gives the corresponding functions of the forelimbs of these animals?

   (A) Animal 1 = running
   Animal 2 = climbing
   Animal 3 = swimming
   (B) Animal 1 = walking
   Animal 2 = swimming
   Animal 3 = crawling
   (C) Animal 1 = swimming
   Animal 2 = flying
   Animal 3 = crawling
   (D) Animal 1 = diving
   Animal 2 = flying
   Animal 3 = jumping

2. Cardiac muscle cells are connected by regions of intercalated discs which contain the gap junctions and the _____.

   (A) T tubule
   (B) sarcomere
   (C) desmosome
   (D) cardiac myofibril

3. What is the structure and function of lipids?

   (A) They have an amino acid sequence that is programmed by a unit of inheritance known as a gene; thus, they can store and transmit hereditary information.
   (B) They include polymers, generally with molecular formulas that are multiples of the unit CH_2O; thus, they can serve as fuel and building material.
   (C) They have many structures, resulting in a wide range of functions; thus, they can serve as structures for support, storage, transport, and cellular signaling; and defense against foreign substances.
   (D) They are assembled from smaller molecules such as glycerol by dehydration reactions; thus, they can store large amounts of energy.

4. Which of the following contribute to the speciation of an organism?

   I. Genetic drift
   II. Gene flow
   III. Mutation

   (A) I and II only
   (B) II and III only
   (C) I and III only
   (D) I, II, and III

5. A woman consulted a doctor because she has the following symptoms: low energy level and fatigue; slow wound healing; poor concentration and trouble learning; and muscle, bone, and joint pain. The patient is most likely suffering from deficiency in _____.

   (A) carbohydrates
   (B) nucleic acids
   (C) proteins
   (D) lipids

6. Which of the following comparisons between active and the passive transport systems best describes them?

   (A) Active transport system does not require ATP molecules, while passive transport system does.
   (B) Passive transport system does not require ATP molecules, while active transport system does.
   (C) Both the active and the passive transport systems require ATP molecules.
   (D) Neither the active nor the passive transport system requires ATP molecules.

7. What are the products of the light-dependent reactions which are used in the light-independent reactions to produce glucose?

   (A) H_2O and ATP
   (B) H_2O and CO_2
   (C) ATP and NADPH
   (D) O_2 and CO_2

PRACTICE SET

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8. A cell biologist is observing two types of cells, labeled as A and B. Cell A has ribosomes, circular DNA, and no distinct nucleus. Cell B has ribosomes and other organelles, DNA arranged in double helices, and a distinct nucleus. Based on these observations, what type of cell are Cells A and B?

   (A) Cell A is a eukaryotic cell while Cell B is a prokaryotic cell.
   (B) Cell A is a prokaryotic cell while Cell B is a eukaryotic cell.
   (C) Both Cells A and B are prokaryotic cells.
   (D) Both Cells A and B are eukaryotic cells.

9. A molecular biologist had successfully determined the partial amino acid sequence of an *Aedes aegypti* intestinal protein. The tRNA molecules used in the synthesis have the anticodons UACCGAGGAGCUUUUGGA. Given this partial sequence, what is the nucleotide sequence of the DNA chain complementary to the DNA chain that encodes for the intestinal protein?

   (A) ATGGCTCCTCGAAAACCT
   (B) ATGGCTCCTCGATTTCCT
   (C) ATGGCTGGACGAAAACCT
   (D) ATGGCTCCTCGAAAAGGA

10. Which statements is(are) true about mitosis and meiosis?

   I. Both processes have two nuclear divisions.
   II. Both processes are forms of division of the nucleus in eukaryotic cells.
   III. Mitosis happens in sex cells while meiosis happens in body cells.
   IV. Mitosis produces two diploid daughter cells while meiosis produces four haploid daughter cells.

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

$C_6H_{12}O_6 + O_2 \rightarrow 6CO_2 + 6H_2O$ + energy (ATP + heat)

11. What type of metabolism is suggested by the chemical equation shown above?

   (A) Anabolic
   (B) Catabolic
   (C) Exergonic
   (D) Endergonic

12. Cultured cells were treated with a compound in early Gap 1 (G_1) phase resulting to arrest before entering S phase. It was identified that similar checkpoint acts during G_1 phase to ensure that sufficient growth has occurred before the cells enter S phase. Which of the following was the most plausible mechanism of arrest?

   (A) Inhibition of Rb activity
   (B) Overproduction of E2F
   (C) Inhibition of DNA polymerase
   (D) Inhibition of G_1 cyclin transcription

13. Which of the following occurs during the Calvin cycle?

   (A) Release of O_2
   (B) Release of CO_2
   (C) Production of ATP
   (D) Production of $NADP^+$

14. Certain free ribosomes need to bind to the outer surface of the endoplasmic reticulum to complete their protein synthesis. What is the importance of this process?

   (A) It converts mRNA into protein.
   (B) It acts as a messenger to produce the appropriate proteins.
   (C) It transcribes proteins encoded by the mitochondrial DNA.
   (D) It prevents the possibility that synthesis of certain proteins will be completed in the cytoplasm.

15. Which of the following mechanisms in cellular respiration generates the highest yield of ATP molecules?

   (A) Glycolysis
   (B) Krebs cycle
   (C) Chemiosmosis
   (D) Glycogenolysis

PRACTICE SET

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16. Which of the following diseases are most probably caused by both heredity and environment?

    (A) Asthma, cancer, hypertension
    (B) Hemophilia, Huntington's disease, osteoporosis
    (C) Spinal atrophy, muscular atrophy, *cri-du-chat* syndrome
    (D) Sickle-cell anemia, Tay-Sach's disease, cystic fibrosis

17. Descendants of Queen Victoria (1819-1901) of England is believed to have suffered from hemophilia B, otherwise known as Christmas disease. Suppose that her affected son married her carrier daughter, what would be the chances of having a normal child?

    (A) 0%
    (B) 25%
    (C) 50%
    (D) 75%

18. A few families in a very remote region show a high frequency of the blue offspring. The skin of affected individuals appears bright blue due to lack of diaphorase. Without diaphorase, a blue form of hemoglobin accumulates in the blood. Which of the following agents of microevolution must have caused this?

    (A) Artificial selection
    (B) Natural selection
    (C) Genetic drift
    (D) Gene flow

19. Which of the following enzymes catalyzes the formation of covalent bonds between deoxyribose of one DNA fragment and the PO_4 of another DNA fragment?

    (A) Permease
    (B) DNA ligase
    (C) Endonuclease
    (D) tRNA synthetase

20. In this process of gene transfer, the DNA is transferred through the donor that is temporarily joined to the recipient. What must be present in the donor for the process to occur?

    (A) Temperate phage
    (B) Lambda phage
    (C) R plasmid
    (D) F plasmid

21. The following procedure was carried out in an experiment that tried to mass-produce a gene of interest from a newly discovered *Bacillus* species. Which of these steps allows the gene of interest to get inserted into the bacterial plasmid?

    (A) The pBR322 DNA and *Bacillus* DNA were isolated.
    (B) The pBR3322 DNA and *Bacillus* DNA were cut with BamH1.
    (C) The DNA ligase was added.
    (D) The recombinant plasmid was inserted into the host bacterium.

22. A hemophiliac man marries a woman who is not hemophiliac. Their first son, as well as their first daughter, exhibited hemophilia. On the other hand, their third offspring, a boy, and their youngest daughter did not exhibit the condition. Which among the patterns of inheritance characterize hemophilia?

    (A) Incomplete dominance
    (B) Codominance
    (C) Sex-influenced inheritance
    (D) Sex-linked inheritance

23. What function do root hairs, lenticels, and pneumatophores have in common?

    (A) Exchange of gases
    (B) Absorption of nutrients
    (C) Maintenance of hydrostatic pressure
    (D) Anchorage of the plant to its substrate

PRACTICE SET

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24. A forest that was greatly affected by forest fire became a vast grassland. This is an example of ecological succession. Which of the following is(are) the effects of this succession to the previous organisms inhabiting the said ecosystem?

    I. Most of the organisms will be gone or displaced since the new ecosystem is not the same as the previous one.
    II. Previous organisms will still be living there since it is their original habitat.
    III. New organisms will invade the place.

    (A) I only
    (B) II only
    (C) I and III only
    (D) II and III only

25. What stage of early mammalian development shows that cells can be removed without damaging the development of the embryo?

    (A) Fetal stage
    (B) Neurulation stage
    (C) Gastrulation stage
    (D) Pre-gastrulation stage

26. A pregnant woman has undergone a prenatal screening. It was found out that the embryo has a genetic disorder named Trisomy 21. Which of the following would be the effect of this genetic disorder to the development of the child?

    I. The child will have poor neurologic performance.
    II. The child will experience lag in growth and development.
    III. The child will reach puberty; however, viability has no assurance.

    (A) I only
    (B) II only
    (C) I and II only
    (D) II and III only

27. Which of the following developmental stages in annual plants is characterized by fruits and seeds formation?

    (A) Reproductive
    (B) Ripening
    (C) Senescence
    (D) Vegetative

28. A teenager is observed to be physically "immature" than his peers as manifested by his short stature and weak bones. The doctor diagnosed him with pituitary tumor. He was recommended to undergo a hormonal therapy as part of the treatment. To which hormone is he deficient?

    (A) Insulin
    (B) Glucocorticoids
    (C) Growth hormone
    (D) Insulin-like growth factor 1

29. What happens to the stomach of a person who refuses to eat regularly?

    (A) The stomach constricts and the storage capacity is decreased.
    (B) The stomach becomes basic since acid is not secreted.
    (C) Ulcers are formed because gastric juices digest the stomach lining.
    (D) The opening between the esophagus and the stomach permanently closes.

30. Which of the following statements is true about the relationship of antibody and antigen?

    (A) Antigens and antibodies float free in the blood plasma.
    (B) Antigens and antibodies are substances that are attached to the outer surfaces of white blood cells.
    (C) An antigen is any substance which provokes an immune response in the body, resulting in the production of antibodies.
    (D) An antigen is any substance which attaches itself to an antibody to kill disease-causing organisms.

PRACTICE SET

GO ON TO THE NEXT PAGE ⇨

31. Why is cigarette smoking bad for one's overall health?

    (A) When red blood cells get damaged by smoke and tar, they cannot transport carbon dioxide anymore.
    (B) When the alveoli of the lungs get damaged by tar and carcinogenic chemicals, the exchange of oxygen and carbon dioxide cannot take place anymore.
    (C) When the nasopharynx area gets damaged by cigarette smoke, a person cannot inhale deeply anymore.
    (D) When the oral cavity and the nasopharynx area get damaged by cigarette smoke, a person will have shortness of breath.

32. Which of the following properties of lipids makes it hard to digest?

    (A) Their molecules need an acidic environment before being broken down by the body.
    (B) Their molecules require proper folding before being absorbed by the body.
    (C) They are water insoluble and must be emulsified before absorption by the body.
    (D) They consist of carbon, hydrogen, and oxygen atoms that are too complex to be broken down by the body.

33. Alex suffered a car accident and it was found out that the affected part was his cerebellum. Which of the following symptoms is likely to be observed in Alex's overall condition?

    (A) Loss of hearing ability
    (B) Difficulty of sensing pain
    (C) Impaired rational thinking
    (D) Loss of coordination of motor movement

34. A patient is diagnosed to have an autoimmune disease that causes raised, red, scaly patches to appear on the skin. His skin cells have an abnormal growth rate, hence the older layers only pile up instead of sloughing off. Which of the following skin conditions is the patient suffering from?

    (A) Acne
    (B) Warts
    (C) Rosacea
    (D) Psoriasis

35. Last summer, George noticed that his skin turned red. Which of the following explains this situation?

    (A) Red blood cell count elevated due to high temperature, causing the skin to turn red.
    (B) The skin changed color as its response to increasing atmospheric pressure during summer.
    (C) Because of increased external temperature, blood vessels dilated, allowing rush of blood to the skin.
    (D) Redness is one of the signs of inflammatory response of the body which indicates infection.

36. Which of the following happen(s) when our body temperature becomes higher than normal?

    I. Sweat is produced.
    II. Skin hair is erected.
    III. Blood vessels constrict.

    (A) I only
    (B) II only
    (C) I and II only
    (D) II and III only

37. Which of the following modes of transmission of human immunodeficiency virus is(are) correct?

    I. Contact with infected sexual fluids
    II. An infected mother who breastfeeds
    III. Closed-mouth kiss with an infected partner

    (A) I only
    (B) I and II only
    (C) II and III only
    (D) I, II, and III

PRACTICE SET

GO ON TO THE NEXT PAGE ⇨

38. Which of the following skin diseases is characterized by hyperproliferation of keratinocytes?

(A) Eczema
(B) Impetigo
(C) Psoriasis
(D) Urticaria

39. Which disorder can be prevented if women of childbearing age would take 400 micrograms of folic acid daily before conception and during early pregnancy?

(A) Microcephaly
(B) Beta thalassemia
(C) Neural tube defect
(D) Congenital coronary heart disease

40. Henry loves to eat foods rich in carbohydrates but he lacks regular exercise. What is most likely to be predicted out of the said situation?

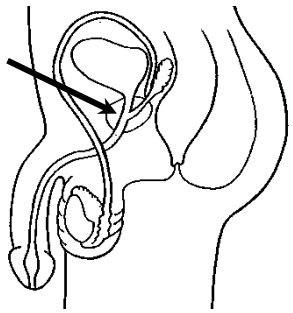
(A) His liver might fail to function; thus, digestion of fats could be affected.
(B) His pancreas might fail to function; thus, absorption of glucose could be affected.
(C) His parietal cells in the stomach might not secrete a normal amount of gastrin.
(D) His small intestine might over-secrete motilin which stimulates gastric activity.

41. Which of the following events results to the shortening of sarcomeres in muscle fibrils?

(A) Shortening of the t-tubule after the release of calcium ions by the sarcoplasmic reticulum
(B) Conformational modifications of the trypomyosin-troponin complex within the muscle fiber
(C) Release of ATP from the sarcoplasmic reticulum and the attachment of myosin to actin filaments
(D) Rapid influx of sodium ions into the cytoplasm after being released from the sarcoplasmic reticulum

42. A cerebellar lesion is suspected in a patient with history of traumatic brain injury. Which of the following tests could NOT initially verify this condition?

(A) Gait test
(B) Finger to nose test
(C) Babinski reflex test
(D) Rapid alternating finger movements test



43. Which part of the female reproductive gland is homologous to the structure of the male reproductive gland marked by the arrow in the diagram above?

(A) Bartholin's gland
(B) Skene's gland
(C) Fimbrae
(D) G-spot

44. Which of the following reproductive hormones is correctly matched with its function?

(A) Luteinizing hormone : stimulation of sperm production
(B) Estrogen : thickening of uterine lining
(C) Oxytocin : production of milk
(D) Progesterone : formation of germ cells

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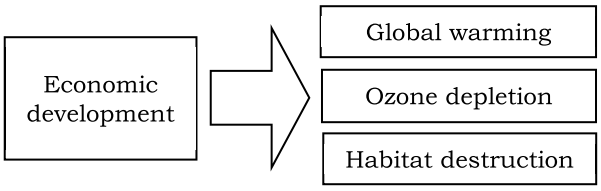
45. Which of the following statements on contraction of a skeletal muscle is FALSE?

(A) A muscle fiber has many mitochondria.
(B) Acetylcholine is released at the end of the motor neuron.
(C) A nerve impulse is transmitted from the brain to the muscle.
(D) ATP is used to make a thin filament slide across the thick filaments of the sarcomeres, thereby causing them to contract.



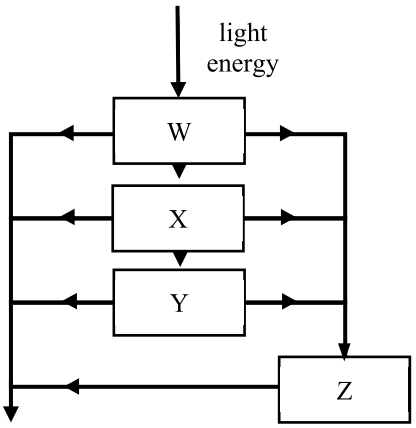
46. Which of the following is the best conclusion to the illustration shown above?

(A) Industrialization has bad effects to the environment.
(B) Global warming has the greatest effect on economic development.
(C) Economic development is the solution to lessen the effects of ecological destruction.
(D) Global warming, ozone depletion, and habitat destruction may lead to economic development.

47. Which of the following outcomes of economic development projects have NO environmental impact?

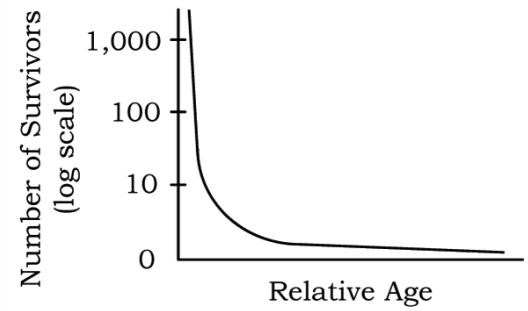
I. Global warming
II. Ozone depletion
III. Wildlife habitat destruction
IV. Greenhouse effect

(A) I and IV only
(B) II and III only
(C) I, II, and III only
(D) II, III, and IV only



48. The energy flow in a freshwater ecosystem is shown in the above diagram. Which group of organisms is represented by Box Z?

(A) Producers
(B) Decomposers
(C) Primary consumers
(D) Secondary consumers



49. What can be concluded from the survivorship curve shown above?

(A) Full survival occurs until old age.
(B) Mortality rate is high for the young.
(C) Mortality rate is low for the young.
(D) Mortality occurs at a constant rate over the life span.

50. Which of the following fields of study best supports evidences from paleontology about evolutionary relationships among species?

(A) Ecological genetics
(B) Molecular genetics
(C) Molecular biology
(D) Population genetics

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TEST B. PHYSICS

1. A tank is filled with water to a height of 2.0 meters. What is the pressure at the bottom of the tank?

   (A) 19.6 Pa
   (B) 39.2 Pa
   (C) 1.96×10^4 Pa
   (D) 3.92×10^4 Pa

2. The dimension L represents the length of an object. Which of the following dimensions can be represented by L^2?

   I. Area of the land
   II. Volume of the bottle
   III. Surface area of the earth

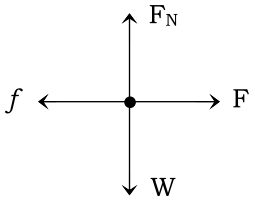
   (A) I only
   (B) II only
   (C) I and III only
   (D) I, II, and III

3. A 10-pound object is suspended by a string from an overhead support. A horizontal force of 5.8 pounds is applied on the object. The measure of the angle which the string makes with the horizontal is _____.

   (A) 30°
   (B) 45°
   (C) 60°
   (D) 90°

4. Which of the following is true at the highest point of a projectile? (a = acceleration, v = velocity)

   (A) $a = 0$, $v = 0$
   (B) $a = g$, $v = 0$
   (C) $a = g$, v = horizontal component of initial velocity
   (D) $a = 0$, v = horizontal component of initial velocity



5. A book is pushed along a table by force F. The book moved with a constant speed. The figure above shows the free-body diagram for the book, where F_N is the normal force, W is the weight of the book, and f is the frictional force. Which of the following is true about these forces?

   (A) $F > f$, $F_N = W$
   (B) $F < f$, $F_N \neq W$
   (C) $F = f$, $F_N = W$
   (D) $f = 0$, $F_N = W$

Material	ρ (kg/m^3)
Brass	8.60×10^3
Silver	10.5×10^3
Gold	19.3×10^3
Platinum	21.4×10^3
Water	1.00×10^3

6. Kris wants to know the material used in the bracelet she purchased from an antique shop. The weight of the bracelet when hanged from a scale is 3.16 N. When it is completely immersed in the water, the scale reads 2.86 N. Based on the table above, what material makes up the bracelet?

   (A) Platinum (C) Brass
   (B) Silver (D) Gold

7. A stone is thrown upward at the speed of 6.00 meters per second from the ground. A man who catches the stone is located 1.00 meters above the ground. What is the speed of the stone as it reaches the catcher's hand? (Use $g = 10\ m/s^2$)

   (A) 8.09 m/s (C) 4.61 m/s
   (B) 7.50 m/s (D) 4.00 m/s

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8. A metallic bear weighs 40 N in air and 30 N in water. What is its density?

   (A) 1×10^4 kg/m^3
   (B) 2×10^4 kg/m^3
   (C) 4×10^3 kg/m^3
   (D) 5×10^3 kg/m^3

9. The initial speed of a 15-gram bullet is 600 m/s. It penetrates 10 centimeters into a stationary target post before it stops. What is the average force exerted on the bullet by the target post?

   (A) 9.0×10^3 N
   (B) 5.3×10^4 N
   (C) 2.4×10^5 N
   (D) 1.6×10^6 N

10. Which of the following is NOT true about work and energy?

    (A) When only the force of gravity does work, the total mechanical energy is conserved.
    (B) Work and energy are expressed in the same units.
    (C) Work done on an object changes its kinetic energy.
    (D) The total kinetic energy of a composite system does not change when no work is done.

11. What happens when a ball is thrown up in the air?

    (A) It loses PE and gains KE.
    (B) It gains PE and loses KE.
    (C) It loses both PE and KE.
    (D) It gains both PE and KE.

12. Which of the following expressions is the dimension of pressure?

    (A) $ML^{-1}T^{-2}$
    (B) $ML^{-1}T^{-1}$
    (C) MLT^{-1}
    (D) MLT^{-2}

13. A plane is moving horizontally at the speed of 90.0 kilometers per hour and is located 4.50 kilometers above the ground. During the flight, a bomb is dropped. What is the horizontal distance travelled by the bomb before it reaches the ground? (Neglect the air friction effect; Use $g = 10$ m/s^2)

    (A) 1.13 km
    (B) 1.08 km
    (C) 1 km
    (D) 0.750 km

14. The earth's gravity exerts no torque on a satellite orbiting the earth in an elliptical orbit. Which of the following remains constant even when the distance between the earth and the satellite changes?

    (A) Angular momentum
    (B) Tangential velocity
    (C) Linear momentum
    (D) Angular velocity

15. A 50-N•m torque acts on a wheel with moment of inertia of 25 kg/m^2. If the wheel starts from rest, what is its angular acceleration?

    (A) 0.5 rad/s^2
    (B) 1.0 rad/s^2
    (C) 2.0 rad/s^2
    (D) 2.5 rad/s^2

16. If the atmospheric pressure is 1.014×10^5 Pa and the density of water is 1,000 kg/m^3, what is the gauge pressure under a 2-meter deep swimming pool?

    (A) 1.014×10^5 Pa
    (B) 2.028×10^5 Pa
    (C) 1.210×10^5 Pa
    (D) 2.014×10^5 Pa

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17. In baseball, a bat hits a 0.10 kilogram ball moving with 5.5 m/s velocity. If the reverse velocity of the ball is 15 m/s, what is the magnitude of impulse of the ball?

(A) 0.55 kg•m/s
(B) 0.95 kg•m/s
(C) 1.50 kg•m/s
(D) 2.05 kg•m/s

18. When heat is used to melt some ice in a water mixture, the internal energy of the water mixture increases. Which thermodynamic law is applied in this situation?

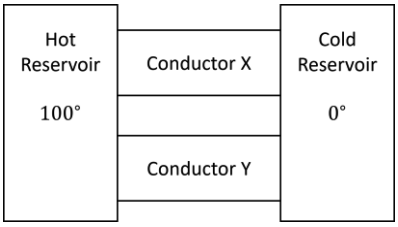
(A) Zeroth law of thermodynamics
(B) First law of thermodynamics
(C) Second law of thermodynamics
(D) Third aw of thermodynamics

19. A 0.750-kilogram calorimeter, with unknown specific heat, has an initial temperature of 25.0°C. Five hundred grams of water at 55.0°C is poured into the calorimeter. If the temperature of the water and calorimeter, upon reaching its thermal equilibrium, is 35.0°C, what is the specific heat of the calorimeter?
(Use c_{water} = 1.00 kcal/kg•C°)

(A) 3.00 kcal/kg•C°
(B) 1.33 kcal/kg•C°
(C) 0.750 kcal/kg•C°
(D) 0.333 kcal/kg•C°

20. A 418.6 N boy eats a protein bar with an energy content of 100 calories. What percent of this energy will be used up if he climbs a 100-meter stairs?

(A) 0.01%
(B) 0.1%
(C) 1.0%
(D) 100%



Conductor	Thermal Conductivity	Cross-sectional Area
X	$3k$	$A/2$
Y	$5k/3$	$3A$

21. Heat conductors X and Y are placed in between the hot and the cold reservoirs as shown in the figure above. Their thermal conductivities and their cross-sectional areas are listed in the table above. What is the relationship between the thermal currents of the two conductors?

(A) $I_X = \frac{10}{3} I_Y$
(B) $I_X = \frac{3}{10} I_Y$
(C) $I_X = \frac{9}{5} I_Y$
(D) $I_X = \frac{5}{9} I_Y$

22. A crane, used in lifting heavy equipment in infrastructure projects, has an efficiency of 75.0%. If it is supplied by an input heat of 20.0 kcal, how high can it lift a 1.00×10^3 kilogram boulder? (Use g = 10 m/s^2, J = 4.19 Joules/Calorie)

(A) 2.13 m
(B) 4.27 m
(C) 6.29 m
(D) 8.53 m

23. Which of the following laws of thermodynamics can explain why a refrigerator cannot transfer heat from cold to hot tanks without any external work applied to perform the process?

(A) Zeroth law
(B) First law
(C) Second law
(D) Third law

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24. A 400 watts water heater contains 1.00 kilogram of water initially at 20.0°C. Assuming that the water heater has 100% efficiency, how long will it take to increase the temperature of water to 100°C? ($c_{water} = 4{,}186$ J/kg•C°)

(A) 209 seconds
(B) 419 seconds
(C) 628 seconds
(D) 837 seconds

25. A long coil of many turns made from high melting point alloy is used as the heating element of an electric kettle. But a short length of wire is unsuitable to be used as the heating element of this appliance. What conclusion can be made from these statements?

(A) A short length of wire will melt when water is boiling.
(B) A long wire has a high resistance and gives more heat.
(C) A short length of wire has a high resistance and gives too much heat.
(D) A long wire will distribute the heat evenly throughout the liquid.

26. Two reservoirs of different temperatures are connected to a pipe. If the valve on the pipe is opened and heat flows freely, the natural direction of the heat flow is from a high-temperature reservoir to a low-temperature reservoir, regardless of the total energy content of each reservoir. This fact is stated in which law?

(A) Law of conservation of energy
(B) Law of conservation of entropy
(C) First law of thermodynamics
(D) Second law of thermodynamics

27. When a material released thermal energy without changing its state, the density ordinarily _____.

(A) increases
(B) decreases
(C) remains the same
(D) can not be predicted

Rod	Initial Length	Coefficient of Linear Expansion
X	$3L_0/2$	5α
Y	$4L_0$	$2\alpha/3$

28. Metallic rods can be used as a thermometer by measuring their change in lengths (ΔL) after thermal expansion. Consider rods X and Y with the same initial temperature at 20.0°C. Their initial lengths and coefficient of linear expansion are listed in the table shown above. If the said rods are both heated until they reach a temperature of 50.0°C, which of the following equations correctly shows their change in lengths?

(A) $\Delta L_X = \frac{45}{16}\Delta L_Y$
(B) $\Delta L_X = \frac{16}{45}\Delta L_Y$
(C) $\Delta L_X = \frac{15}{2}\Delta L_Y$
(D) $\Delta L_X = \frac{2}{15}\Delta L_Y$

29. Which of the following statements best differentiates spontaneous from stimulated emissions?

(A) Spontaneous emission allows the photon to travel in random direction, while in stimulated emission the photon travels in an identical direction.
(B) Spontaneous emission is difficult to achieve, while stimulated emission can be readily achieved.
(C) Spontaneous emission is achieved in excited state, while stimulated emission is independent of external forces.
(D) Spontaneous emission arises in the presence of electromagnetic radiation, while stimulated emission is induced by absorption.

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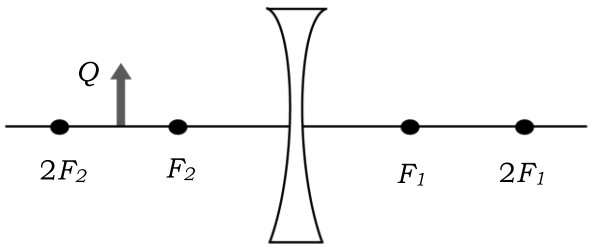

30. A concave lens and an object Q are positioned as shown above. What is the complete description of the image formed using this lens?

(A) Virtual image, upright, enlarged, between F_1 and the lens
(B) Virtual image, upright, reduced, between F_2 and the lens
(C) Real image, inverted, reduced, between F_2 and the lens
(D) Real image, upright, reduced, between F_2 and the lens

31. Which of the following will result if the number of lines in a diffraction grating of a given width is increased?

(A) The wavelengths that can be diffracted will be shorter.
(B) The wavelengths that can be diffracted will be longer.
(C) The spectrum produced will be narrower.
(D) The spectrum produced will be broader.

32. A light travels in a medium with an index of refraction of 1.50. Which of the following statements is(are) true about the light in the medium compared with that in the vacuum?

I. Its speed is lesser.
II. Its frequency is higher.
III. Its wavelength is the same.

(A) I only
(B) II only
(C) I and III only
(D) II and III only

33. The near point of an eye is 0.5 meters. What is the focal length of a contact lens that must be used for normal vision?

(A) +25 centimeters
(B) –25 centimeters
(C) –50 centimeters
(D) +50 centimeters

34. What physical entity is quantized, is always conserved, and is brought about by transfer of electrons?

(A) Electric charge
(B) Electric current
(C) Electric field
(D) Electric potential

35. Two charges q_1 and q_2 are separated by a distance d in air. The force between them is 100μ. What will be the force between $2q_1$ and $3q_2$ placed $2d$ apart?

(A) 100 μ
(B) 150 μ
(C) 200 μ
(D) 300 μ

36. Which of the following statements is NOT a property of electromagnetic waves?

(A) It travels at the speed of light.
(B) It carries both energy and momentum, which can be delivered to a surface.
(C) The ratio of the electric field to the magnetic field in an electromagnetic wave equals the speed of light.
(D) They are transverse waves because the electric and magnetic fields are parallel to the direction of propagation of the wave and to each other.

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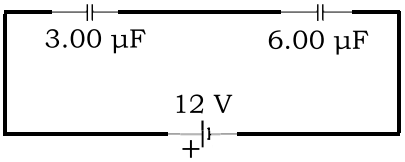
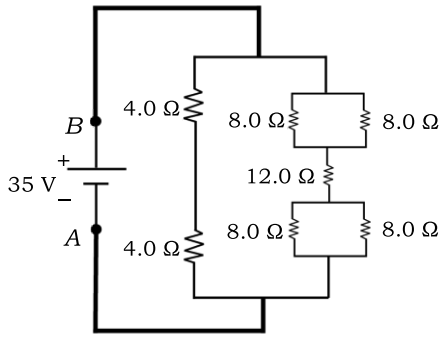


37. Based on the circuit diagram shown above, what are the values of the electric charge and the voltage dropped on the 3.00-μF capacitor, respectively?

(A) 12.0 μC, 8.00 V
(B) 12.0 μC, 4.00 V
(C) 24.0 μC, 8.00 V
(D) 24.0 μC, 12.0 V

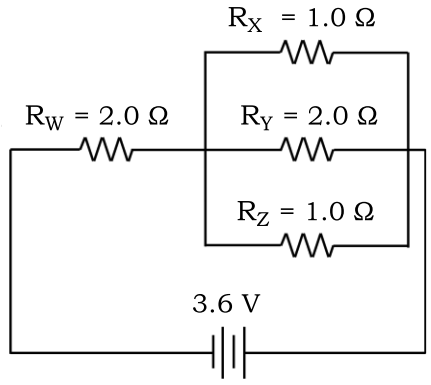


38. Given the circuit above, what is the equivalent resistance and current flowing through it?

(A) $\frac{7}{40}$ Ω, $\frac{49}{8}$ A
(B) $\frac{40}{7}$ Ω, 200 A
(C) $\frac{7}{40}$ Ω, 200 A
(D) $\frac{40}{7}$ Ω, $\frac{49}{8}$ A

39. An antenna is run by an LC circuit with inductance L = 4.00 mH and capacitance C = 6.40 μF. If the electromagnetic wave produced by the said antenna propagates to the vacuum, what is the wavelength of the electromagnetic wave?

(A) 1.22×10^3 m
(B) 7.64×10^3 m
(C) 4.80×10^4 m
(D) 3.02×10^5 m



40. Four resistors are connected in the circuit as shown in the figure above. What is the current through the resistor R_Y?

(A) 0.3 A
(B) 0.6 A
(C) 0.9 A
(D) 1.5 A

41. Based on the Maxwell's wave-model predictions, which of the following experimental results correctly prove the threshold frequency and stopping potential of an electron?

I. Photocurrent is determined by the light frequency.
II. There is no measurable time delay between the moment a light is turned on and the moment photoelectrons are emitted.
III. Frequency determines the stopping potential of an electron, but not intensity.

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II, and III

42. A typical person does not exhibit de Broglie wave behavior when walking through a doorway because _____.

(A) the Planck's constant *h* has a minuscule value
(B) net energy is being conserved in all interactions, including walking
(C) waves are reflected back to the person's surface and is negligible when walking
(D) the wavelength λ is far longer when doing an activity, creating a smaller frequency and energy

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43. According to de Broglie hypothesis, the wavelength of a moving particle is _____.

(A) directly proportional to its total energy
(B) inversely proportional to its total energy
(C) directly proportional to its momentum
(D) inversely proportional to its momentum

44. When a large atom such as U^{235} splits into two smaller atoms, then the combined mass of the products resulting from the splitting will be _____.

(A) one-half of the original mass
(B) the same as the original mass
(C) one-half more than the original mass
(D) two times more than the original mass

45. An electron is travelling at 1% the speed of light. What is its kinetic energy in joules? (Speed of light = 3×10^8 m/s)

(A) 4.000×10^{-18} J
(B) 4.098×10^{-18} J
(C) 4.098×10^{10} J
(D) 4.000×10^{18} J

46. Which of the following is an implication of the formula $E = mc^2$?

(A) Energy can be created from nothing.
(B) Matter can be created from nothing.
(C) Relatively large amounts of matter can be changed into relatively small amounts of energy.
(D) Relatively large amounts of energy can be obtained from relatively small amounts of matter.

47. Which of the following statements regarding isotopes is NOT true?

(A) Radioactive isotopes can be produced in the laboratory.
(B) Radioactive isotopes decay by the emission of particles from the nucleus.
(C) All isotopes are radioactive.
(D) There is a wide variety of decay rates for radioactive isotopes.

48. Which of the following statements is NOT true of protons and electrons?

(A) Protons and electrons have equal masses.
(B) All protons have the same charge.
(C) Protons and electrons have charges equal in magnitude although opposite in sign.
(D) The positive charge in an atomic nucleus is due to the protons it contains.

49. The radiation from a sample of Krypton-85 decreases to one-third of the original intensity I_o in a period of 18 years. What would be the intensity after 18 more years?

(A) I_o
(B) $\frac{1}{3} I_o$
(C) $\frac{1}{6} I_o$
(D) $\frac{1}{9} I_o$

$$^{235}_{92}U + {}^{1}_{0}n \rightarrow {}^{140}_{54}Xe + {}^{94}_{38}Sr + (?){}^{1}_{0}n + \text{energy}$$

50. In a U^{235} fission, represented by the equation above, Xe^{140} and Sr^{94} nuclei are produced and energy is released. How many n is(are) given off in the process?

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

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TEST C. SOCIAL SCIENCE

1. What is the best possible reason for the difficulty experienced by people who had criminal records in seeking employment after they are released?

   (A) People still label them as criminals even if they are no longer in jail.
   (B) They are considered not capable of doing things other than committing a crime.
   (C) They do not know the changes in the outside world.
   (D) People do not care about them.

2. In a medical institution, professionals such as nurses, doctors, dietitians, pharmacists, and medical technologists work in harmony providing specific services depending on a client or patient's needs. Which of the following social processes can be best observed in the said context?

   (A) Assimilation and competition
   (B) Cooperation and differentiation
   (C) Amalgamation and stratification
   (D) Enculturation and amalgamation

3. Which of the following statements reflects a functionalist understanding of the family?

   (A) The family is composed of a father, a mother, and at least one child.
   (B) The family is a source of genes from which the human species evolves.
   (C) The family is the site of different interests that are usually in a state of conflict.
   (D) The family ensures the continuance of a society through reproduction and socialization of children as new members of the society.

4. What do you call the societies that traces kinship descent through fathers?

   (A) Matrilineal
   (B) Matrilocal
   (C) Patrilineal
   (D) Patrilocal

5. Which of the following descriptions illustrates that culture is based on a system of shared symbols?

   (A) Tribes tend to use the same set of tools for agriculture.
   (B) Urban women tend to use the same methods of child rearing.
   (C) Muslims immediately recognize a mosque by the crescent and star above it.
   (D) Food preparation among *Kapampangans* is passed down across generations.

6. What is the technique in data gathering wherein the researcher takes special interest in how the people live, how they form their values, and what beliefs they have and apply in their lives?

   (A) Experiment
   (B) Content Analysis
   (C) Archival Research
   (D) Participant Observation

7. Which of the following behavioral abilities can be considered as culturally patterned and learned by humans unlike other primates?

   I. Modification in tool making
   II. Spoken and symbolic language
   III. Eating insects and small reptiles in addition to plants
   IV. Foraging in both males and females for themselves after infancy

   (A) I, II, and III only
   (B) I, II, and IV only
   (C) I, III, and IV only
   (D) II, III, and IV only

8. The process wherein a child enacts the behavior of his significant others and incorporates the standards, attitudes, and beliefs of these significant others into his own personality is called _____.

   (A) internalization
   (B) indoctrination
   (C) generalization
   (D) memorization

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9. According to Marxist theory, what is the main basis of social stratification in society?

   (A) Ethnic involvement
   (B) Economic capacities
   (C) Gender dynamics
   (D) Power relations

10. In sociological research, which of the following methods is used to obtain in-depth information from an individual respondent and is usually done over an extended period of time?

   (A) Survey
   (B) Interview
   (C) Participant Observation
   (D) Focus Group Discussion

11. Which of the following research methods entails staying in the research area for a long period of time and living with the community in order to describe and understand the community's culture?

   (A) Fieldwork
   (B) Sociography
   (C) Ethnography
   (D) Focus group discussion

12. Which of the following statements describes diffusionism theory?

   (A) Civilized society is more developed and sophisticated than the savage societies.
   (B) Just like a living body, the society also has different parts that are interrelated.
   (C) In general, humans are try to borrow/adapt from the other cultures.
   (D) Patterning and configuration of a particular culture is reflected in an individual's personality.

13. According to C. Wright Mills, what is the quality of mind that allows an individual to examine personal troubles in the light of broader social issues?

   (A) Objectivity
   (B) Ethnical neutrality
   (C) Empirical investigation
   (D) Sociological imagination

14. Which of the following somatotypes can be described as temperamentally relaxed, outgoing people who like physical comfort and eating?

   (A) Ectomorph
   (B) Entomorph
   (C) Endomorph
   (D) Mesomorph

15. What are the bases of Merton's typology of deviant behavior?

   I. A person's motivation or adherence to cultural goals
   II. A person's belief in how to attain his/her goals
   III. A person's political and cultural background
   IV. A person's idea of the world or worldview

   (A) I and II only
   (B) I and III only
   (C) I, II, and III only
   (D) I, II, III, and IV

16. Which of the following can be considered as the best plans formulated to overcome the urban sprawl of Metro Manila?

   I. Dispersal policy adopted by the government
   II. Relocation of illegal occupants in resettlement areas
   III. Developing subdivisions in the nearby provinces
   IV. Putting up branches and campuses of universities in the nearby places

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

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17. What is the fundamental task of social institutions in any society?

(A) Socialization of new members
(B) Protection of members from harm
(C) Provision of meaningful activities for members
(D) Distribution of resources to members

18. Which of the following has a legitimate capacity to use violence in a given territory according to Max Weber?

(A) Community
(B) Bureaucracy
(C) Government
(D) State

19. The antidote to many forms of intolerance is the conscious attempt by institutions and organizations toward _____.

(A) pluralism
(B) ghettoization
(C) absorption of differences
(D) institutionalization of hierarchies

20. Carl dreams of buying a house in Quezon City, but he cannot afford to pay whole in cash. The real estate agent offered him a payment term where a banking company will finance half of the total amount and he can pay his monthly dues in a fixed price. Carl decided to sign a contract with the agent, stating that he should complete the payment for fifteen years. This is an example of _____.

(A) socialism (C) capitalism
(B) feudalism (D) monopolism

21. Which of the following nonprobability sampling techniques should be used when conducting a research about the worldviews of HIV-positive patients, particularly the gender differentials on their local moral worlds?

(A) Consecutive sampling
(B) Convenience sampling
(C) Purposive sampling
(D) Quota sampling

22. Many biological anthropologist consider racial classification as _____.

(A) a useful device for differentiating humans with slightly different physical features
(B) social categories to which individuals are assigned, either by themselves or others, to separate their group from others
(C) an archaic and unnecessary tool that was used in the past to label groups that were considered inferior
(D) an effective system of classification to showcase the various cultural practices that different societies developed throughout their history

23. What is the nature of Marx's theory when compared to what Auguste Comte proposed?

(A) It is different in that it rejected Comte's position.
(B) It is different as the theory postulated that conflicts can be totally averted in society.
(C) It is similar as both theories proposed positivism.
(D) It is similar as both emphasized that using scientific methods would usher in a new "positivist" age of history.

24. An individual who is a radical feminist would believe that _____.

I. in order to attain equality, a society must completely reform the family system
II. to separate women's bodies from the process of childbearing, a society must use new reproductive technology
III. a socialist revolution will not lead to a society without patriarchy
IV. liberal feminism will eventually bring about an egalitarian society

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

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25. In modernization theory, it is believed that high-income countries would _____.

    (A) raise the productivity of their country by developing machinery and information technology
    (B) limit population growth by exporting birth control technology and promoting its use
    (C) provide aid to developing countries by administering state of the art medicine
    (D) accelerate economic growth by increasing their agricultural productivity by funding irrigation projects

26. Lito was studying for his exams while his neighbor was playing loud rock music. Though irritated by the loud music, he was able to retain information from the book he was reviewing by sustaining his focus. This is an example of _____.

    (A) iconic memory
    (B) signal detection
    (C) selective attention
    (D) perceptual process

27. A 25-year-old man is a fan of a movie actress. He would travel miles just to see her, would find ways to know her whereabouts, and firmly believes that the actress is secretly in love with him. In his room, he has a collection of significant memorabilia—pictures and personal belongings—from the actress. Based on these descriptions, is the behavior normal?

    (A) Yes, a diehard fanatic would want to marry his idol.
    (B) Yes, it is normal for any fan to try and find ways to see his idol.
    (C) No, not all fans are fixated and have a strong belief that their idol is attracted to them.
    (D) No, fanatics are content to see their idols on television.

28. What kind of love is exhibited if two people are very attracted to each other and are very passionate?

    (A) Consummate
    (B) Romantic
    (C) Fatuous
    (D) Empty

29. A behaviorist and a biopsychologist were discussing about attraction and love. Which of the following would you most likely hear from their conversation?

    (A) Behaviorist: Love is a choice.
        Biopsychologist: Love stems from unconsciousness.
    (B) Behaviorist: Love happens when you are rewarded.
        Biopsychologist: Love is a matter of remembering good experiences.
    (C) Behaviorist: Love is due to the pleasant consequences that happen in a relationship.
        Biopsychologist: Love is due to increasing levels of dopamine.
    (D) Behaviorist: Love happens because of pheromones.
        Biopsychologist: Love is needed to survive and adapt in the environment.

30. Jim was introduced to the world of online gaming by his friend. At first, he treated the game as a hobby, but little by little, he started spending more time online so he can play the game. His boss noticed that he no longer comes to work on time and is now beginning to lose focus on his work. What criterion is used by Jim's boss in determining if his behavior is still acceptable or not?

    (A) Distress
    (B) False belief
    (C) Dysfunction
    (D) Impaired perception

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31. The following are effects of stimulants EXCEPT _____.

    (A) they maximize arousal
    (B) they lessen the feeling of hunger
    (C) they cause a feeling of strength and power
    (D) they slow down the reaction time of an individual

32. Mel cannot stop eating. He still eats even if he feels full already. He prefers eating alone to reduce his embarrassment of eating too much. He feels guilty after consuming too much food. What disorder is he suffering from?

    (A) Anorexia nervosa
    (B) Binge-eating
    (C) Rumination
    (D) Pica

33. A mother trained her children to follow the curfew hours. Whenever they do not follow, their cell phones would be confiscated and they would see the phones placed inside a red paper bag. Because of this, whenever the red paper bag is present, they anticipated that one of them will have to give up his/her cell phone for a week. If they follow the curfew hours, however, their mother would cook their favorite snacks for a week. What is the conditioning applied in this situation?

    (A) Establishment of curfew hours as part of house rules
    (B) Following the curfew hours and enjoying the use of cell phones
    (C) Association between a red paper bag and a confiscated cell phone
    (D) Confiscation of the cell phone for rule breaking and cooking snacks for following the rule

34. Lately, Jan, a stage play actor, tends to forget her lines. She seems unable to focus and concentrate. She is having a hard time getting up each morning. She could not explain to her co-actors how less motivated she is. Which of the following conditions could the symptoms be more likely associated with?

    (A) Low dopamine
    (B) High dopamine
    (C) Low GABA
    (D) High GABA

35. Lyn thought that she heard her baby crying in the next room, but when she checked, her baby is actually fast asleep. This illustrates _____.

    (A) opponent-process theory
    (B) signal detection theory
    (C) top-down processing
    (D) trichromatic theory

36. If a known intelligent student failed a standardized achievement test administered at the end of the school year, which of the following should be investigated?

    (A) Administration, scoring, and interpretation of the test results
    (B) Consistency of the test results
    (C) Appropriateness of the test items given
    (D) Number of items included in the test

37. Cecile's heart pounded fast and her hands started to tremble upon discovering her house was on fire. She immediately realized that fear has engulfed her due to her trembling hands and pounding heart. Which of the following theories of emotion could best explain the experience of Cecile?

    (A) Schachter-Singer
    (B) Cannon-Bard
    (C) James-Lange
    (D) Solomon-Corbit

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38. What would happen if there is a failure to reuptake the excess neurotransmitter back into the presynaptic cell?

(A) The leftover neurotransmitter would be catalyzed by enzymes.
(B) Another neuron will absorb the leftover neurotransmitter.
(C) The leftover neurotransmitter will interact with another neurotransmitter and would then attach to the binding sites.
(D) The postsynaptic neuron would get another dose of the neurotransmitter and a new nerve impulse would be made.

39. RJ started to drive his car and after some time, he heard an annoying sound in his car. He immediately stopped and put on his seatbelt. Suddenly, the sound stopped. This _____ prompted him to always put his seatbelt on.

(A) positive reinforcement
(B) negative reinforcement
(C) positive punishment
(D) negative punishment

40. Waldy is confronted with an inconsiderate superior who continuously gives him work. He reminded himself "*Getting angry at him would not help at this point.*" This coping strategy is called _____.

(A) calming coping
(B) cognitive restructuring
(C) emotion–focused coping
(D) problem–focused coping

41. Which of the following quotations best describes an approach-avoidance conflict situation?

(A) "It's a choice between the devil and the deep blue sea."
(B) "I'm caught between goodbye and I love you."
(C) "Having your cake and eating it, too."
(D) "When life hands you a lemon, make a lemonade."

42. Ali is confronted with looming deadlines and uncooperative teammates at work. If she will use cognitive restructuring as her coping strategy, what will she most probably say to herself?

(A) "I just have to do my best, things will get better soon."
(B) "I will just keep myself busy to take my mind off the issues."
(C) "I have to talk to my teammates, we need to work on the deadlines."
(D) "I will think of positive things, I don't want to be stressed."

43. Which of the following statements about the nature and nurture issue of human development is FALSE?

(A) Nature and nurture equally influence the development of a person.
(B) Experiences, like neural networks, have the ability to form and change neural connections.
(C) Maturation is largely dependent on the type of experiences an individual is exposed to.
(D) Our cognitive development is the product of environmental and biological factors.

44. Which of the following could be the focus of a study on the influences of nature on prenatal development?

(A) Similarities among monozygotic twins separated at birth
(B) Similarities among dizygotic twins separated at birth
(C) Differences among monozygotic twins separated at birth
(D) Differences among dizygotic twins separated at birth

45. The statement "The cat convinced a little girl to buy him a litter box" is NOT correct based on which rule system?

(A) Morphology
(B) Phonology
(C) Semantics
(D) Syntax

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46. An office manager exhibits a very domineering behavior and is quick in reprimanding dominant employees. However, he does not see the pattern in himself when he exhibits the same behavior. What defense mechanism is he using?

    (A) Displacement
    (B) Rationalization
    (C) Reaction formation
    (D) Intellectualization

47. Melissa finally said yes to Ronald to be his girlfriend. The first few months together were exciting and fun. However, after six months, Melissa wanted to get out of their relationship because Ronald became too possessive and jealous. He did not want Melissa to go out with her male friends and always wanted them to be together almost every day. What kind of love is illustrated in the relationship between Melissa and Ronald?

    (A) Agape
    (B) Platonic
    (C) Romantic
    (D) Affectionate

48. In studying, RJ organizes concepts in terms of complex network of nodes, while Jerome organizes lessons from general to specific ones. What memory strategies does each one employ?

    (A) RJ – schema;
        Jerome – semantic networks
    (B) RJ – schema;
        Jerome – hierarchical networks
    (C) RJ – semantic networks;
        Jerome – hierarchical networks
    (D) RJ – hierarchical networks;
        Jerome – schema

49. Looking at Christmas lights, Ken was fascinated by how the lights seem to be moving from one position to another. This is an illustration of _____.

    (A) stroboscopic motion
    (B) autokinetic effect
    (C) phi phenomenon
    (D) motion parallax

50. At what level of awareness is a person who is daydreaming?

    (A) Higher-level awareness
    (B) Lower-level awareness
    (C) Altered state of consciousness
    (D) Subconscious awareness

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TEST D. CHEMISTRY

1. The density of water is 1.0 g/cm^3. Which of the following substances will float in water?

   (A) Density of gold = 19.3 g/cm^3
   (B) Density of silver = 10.5 g/cm^3
   (C) Density of milk = 1.03 g/cm^3
   (D) Density of ice = 0.92 g/cm^3

2. When a paper is crumpled, what physical property is altered?

   (A) Density
   (B) Shape
   (C) Mass
   (D) State

3. Hikers light a campfire at night to keep themselves warm. Lighting the campfire is an _____.

   (A) exothermic reaction which absorbs heat
   (B) exothermic reaction which releases heat
   (C) endothermic reaction which absorbs heat
   (D) endothermic reaction which releases heat

4. The molecular formula of caffeine is $C_8H_{10}N_4O_2$. What is its empirical formula? (H = 1 g/mol, O = 16 g/mol, C = 12 g/mol, N = 14 g/mol)

   (A) CHNO
   (B) $C_2H_2N_2O_2$
   (C) $C_4H_5N_2O$
   (D) $C_{16}H_{20}N_8O_4$

5. Which of the following represents a chemical change?

   (A) Boiling water to form steam
   (B) Heating lead until it melts
   (C) Burning a piece of wood
   (D) Breaking of glass

A: $CO(g) + \frac{1}{2}O_2(g) \rightarrow CO_2(g)$ $\quad \Delta H_A = -283$ kJ

B: $N_2(g) + O_2(g) \rightarrow 2NO(g)$ $\quad \Delta H_B = 180.6$ kJ

C: $CO(g) + NO(g) \rightarrow CO_2(g) + \frac{1}{2}N_2(g)$ $\quad \Delta H_C = ?$

6. Two gaseous pollutants that form in auto exhaust are CO and NO. An environmental chemist is studying ways to convert them to less harmful gases through equation C shown above. What is the value of ΔH_C given the information in equations A and B?

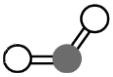
   (A) −57.1 kJ
   (B) −90.3 kJ
   (C) −223.7 kJ
   (D) −373.3 kJ

7. Using the valence-shell electron-pair repulsion theory, which of the following diagrams represents the molecular shape of carbon dioxide?

   (A) 

   (B) 

   (C) 

   (D) 

8. Which of the following is NOT true of Group II elements: Be, Mg, Ca, Sr, Ba, and Ra?

   (A) Be is the most active metal among them.
   (B) Ra has the lowest ionization potential.
   (C) Ca is bigger than Mg.
   (D) They have relatively low electronegativities.

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9. The solubility of $KClO_3$ at 60°C is 25 g per 100 g of water. If at 60°C, 15 g of the salt is dissolved in 50 g of water, then the solution must be _____.

   (A) unsaturated
   (B) saturated
   (C) supersaturated
   (D) diluted and unsaturated

10. A volume of 1.1 liters of O_2 was collected inside a balloon at 295 K and 13.6 psi. The next day, the surrounding conditions were observed to be 32°C and 0.98 atm. What is the volume of the gas inside the balloon? (1 atm = 14.7 psi)

    (A) 0.107 liter
    (B) 1.070 liters
    (C) 10.7 liters
    (D) 107.0 liters

Element	Electronegativity
K	0.8
Cl	3.0
H	2.1
O	3.5
C	2.5
N	3.0

11. Based on the table shown above, in which of the following compounds is the bonding ionic?

    (A) KCl
    (B) NH_3
    (C) CH_4
    (D) H_2O

12. Fifty-four grams of a certain metal at 98°C was placed in 80 mL of water at 297 K. Assuming no heat is lost to the surroundings, what is the temperature of the water and the metal? (Specific heat of the metal = 0.085 cal/g•C°)

    (A) 280°C
    (B) 35°C
    (C) 28°C
    (D) 25°C

13. What is the molecular weight of an unknown gas if 200 mL of this gas diffuses through an apparatus in 180 seconds while 250 mL of NO_2 under the same conditions diffuses through the same apparatus in 170 seconds?

    (A) 8.97 g/mole
    (B) 60.88 g/mole
    (C) 80.52 g/mole
    (D) 805.20 g/mole

14. A student mixes three tablespoons of orange powder in a glass of water at room temperature, and observes that much, but not all, of the orange powder has dissolved. Which statement concerning this solution is FALSE?

    (A) The solution is considered supersaturated since no additional orange powder will dissolve.
    (B) The solution is considered saturated since not all of the orange powder dissolved.
    (C) The solubility of the orange powder in water has been exceeded.
    (D) In order to get the additional orange powder to dissolve, the student can add more water.

$$2H_2 + O_2 \longrightarrow 2H_2O$$

15. The reaction of hydrogen and oxygen gas to produce water is shown above. Suppose 10.0 grams of hydrogen are mixed with 32.0 grams of oxygen, what is the limiting reagent and how many excess grams of the other is left at the end of the reaction? (Molar masses: H_2 = 2.0 g/mol; O_2 = 32.0 g/mol)

    (A) Limiting reagent = hydrogen; Excess = 16.0 grams of oxygen
    (B) Limiting reagent = hydrogen; Excess = 22.0 grams of oxygen
    (C) Limiting reagent = oxygen; Excess = 6.0 grams of hydrogen
    (D) Limiting reagent = oxygen; Excess = 8.0 grams of hydrogen

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16. Which of the following groups of compounds are arranged from the strongest to weakest intermolecular force?

(A) $F_2 \rightarrow HCL \rightarrow H_2O_2$
(B) $F_2 \rightarrow H_2O_2 \rightarrow HCL$
(C) $HCL \rightarrow F_2 \rightarrow H_2O_2$
(D) $H_2O_2 \rightarrow HCL \rightarrow F_2$

$$4\,{}^{1}_{1}\mathrm{H} \longrightarrow {}^{4}_{2}\mathrm{He} + 2\,{}^{0}_{+1}\beta + \text{energy}$$

17. What type of nuclear reaction is shown above?

(A) Nuclear fusion
(B) Nuclear fission
(C) Neutron emission
(D) Scintillation

18. Which of the following states that no two electrons in an atom can have the same set of quantum numbers?

(A) Hund's rule
(B) Madelung's rule
(C) Pauli exclusion principle
(D) Heisenberg uncertainty principle

19. In which of the following sets of condition will a real gas behave like an ideal gas?

(A) Low pressure, low temperature
(B) High pressure, low temperature
(C) Low pressure, high temperature
(D) High pressure, high temperature

20. A person has 6.0 qt of blood containing 95 mg of glucose per 100 mL. How much glucose is there in this person's total blood supply?

(A) 5400 g
(B) 5.4 g
(C) 540 g
(D) 570 g

21. How many *pi* electrons are there in naphthalene?

(A) 9
(B) 10
(C) 11
(D) 14

22. Which of the following correctly lists the five atoms in order of increasing atomic size? (Atomic numbers: F = 9, K = 19, Ge = 32, Br = 35, Rb = 37)

(A) F, K, Ge, Br, Rb
(B) F, Ge, Br, K, Rb
(C) F, Br, Ge, K, Rb
(D) F, K, Br, Ge, Rb

23. If 8.0 moles of potassium superoxide reacts with 5.0 moles of water, how many moles will remain unreacted?

(A) 1.0 mole KO_2
(B) 3.0 moles KO_2
(C) 1.0 mole H_2O
(D) 3.0 moles H_2O

$$n = 3,\ \ell = 2,\ m_\ell = -1,\ m_s = +\tfrac{1}{2}$$

24. Given the above quantum numbers, what is the maximum number of electrons in the atom?

(A) 1
(B) 3
(C) 10
(D) 14

25. When a chemist pours hot water with coffee extract to an ice bath, some of the coffee crystallizes. What kind of solution is formed?

(A) Unsaturated
(B) Saturated
(C) Supersaturated
(D) Diluted

$$NH_3 + H_2O \rightleftharpoons NH_4OH$$
$$NH_4^+(aq) \rightleftharpoons NH_3(aq) + H^+(aq)$$

26. An aqueous solution of NH_3 is in equilibrium. Suppose a gram of NH_4Cl is added to the solution, and it is allowed to come to a new equilibrium as shown above. What will happen to the pH as a result of the addition of NH_4Cl?

(A) It will go up.
(B) It will go down.
(C) It will not be affected.
(D) It cannot be determined.

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27. In a gravimetric analysis, the substance weighed is PbO_2. If the substance sought is Pb_3O_4, which is the correct gravimetric factor?

(A) $3PbO_2/Pb_3O_4$
(B) $Pb_3O_4/3PbO_2$
(C) $2PbO_2/Pb_3O_4$
(D) $Pb_3O_4/2PbO_2$

$H_2SO_4(aq) + 2NaOH(aq) \rightarrow 2H_2O(l) + Na_2SO_4(aq)$

28. Titration reveals that 8.33 mL of 3 M sulfuric acid is required to neutralize the sodium hydroxide in 25 mL of NaOH solution as shown in the chemical reaction above. What is the molarity of the NaOH solution?

(A) 2.5 M
(B) 2.0 M
(C) 1.5 M
(D) 1.0 M

29. Which of the following types of titration is best used in determining the total hardness of water?

(A) Complexometric titration
(B) Zeta potential titration
(C) Acid-base titration
(D) Redox titration

30. Which of the following pairs of compounds can act as a buffer solution?

I. HF and NaF
II. HNO_3 and KNO_3
III. NH_3 and NH_4Cl

(A) II only
(B) I and II only
(C) I and III only
(D) I, II, and III

31. A high school laboratory's waste container is used to dispose of aqueous solutions of sodium nitrate, potassium sulfate, hydrochloric acid, and tin (II) chloride. Which of the following equations represents the most likely net redox reaction predicted to occur inside the waste container?

(A) $Sn^{2+}(aq) + 2NO_3^-(aq) + 4H^+(aq) \rightarrow 2NO(g) + 2H_2O(l) + Sn^{4+}(aq)$
(B) $SO_4^{2-}(aq) + 4H^+(aq) + 2Cl^-(aq) \rightarrow H_2SO_3(aq) + H_2O(l) + Cl_2(g)$
(C) $2H^+(aq) + 2K^+(aq) \rightarrow H_2(g) + K(s)$
(D) $Cl_2(g) + Sn^{2+}(aq) \rightarrow Cl^-(aq) + Sn(s)$

$2NaI + Pb(NO_3)_2 \rightarrow PbI_2 + 2NaNO_3$

32. If 4.61 grams of PbI_2 was isolated from the reaction of $Pb(NO_3)_2$ and NaI, what will be the calculated amount of NaI that reacted with PbI_2? (Molar mass: PbI_2 = 330 grams/mol; NaI = 150 grams/mol)

(A) 1.50 grams
(B) 3.00 grams
(C) 4.61 grams
(D) 9.22 grams

$H_2(g) + I_2(g) \rightleftharpoons 2HI(g) \quad \Delta H = +52kJ$

33. A colorless hydrogen gas is mixed with purple iodine vapor in a sealed flask. The chemical reaction produced a colorless hydrogen iodide as shown in the equation above. What can be done to temperature, concentration and pressure of any of the chemicals in the mixture to increase the formation of purple vapor?

(A) Decrease temperature and H_2 concentration, same pressure
(B) Decrease temperature and I_2 concentration, same pressure
(C) Increase temperature and I_2 concentration, decrease pressure
(D) Increase the temperature, HI concentration, and pressure

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34. Which of the following equations shows that water is acting as a conjugate base?

(A) $NH_3 + H_2O \rightleftharpoons NH_4^+ + OH^-$
(B) $H_2SO_4 + H_2O \rightleftharpoons H_3O^+ + HSO_4^-$
(C) $H_2PO_4^- + H_3O^+ \rightleftharpoons H_3PO_4 + H_2O$
(D) $H_2PO_4^- + OH^- \rightleftharpoons HPO_4^{2-} + H_2O$

35. In a reaction between copper metal and aqueous iron (III) chloride, Fe^{3+} is reduced to Fe^{2+} while Cu is oxidized to Cu^{2+}. What is the mass of Cu required to react with 50 mL of 1 mol/L $FeCl_3$?

(A) 0.5 grams
(B) 1.6 grams
(C) 2.1 grams
(D) 3.2 grams

$Co(H_2O)_6^{3+}(aq) + 6NH_3(aq) \rightarrow Co(NH_3)_6^{3+}(aq) + 6H_2O(l)$

36. Which of the following is the Lewis acid that acts as a reactant in the equation shown above?

(A) Co^{3+}
(B) H_2O
(C) NH_3
(D) $Co(H_2O)_6^{3+}$

37. Which of the following is a primary alcohol?

(A) 2-Propanol
(B) 3-Bromo-2-pentanol
(C) Ethanol
(D) 4-Ethyl-3-hexanol

38. Using a catalyst, two gaseous hydrocarbons, X and Y, were produced from heating hexane, C_6H_{14}. The gases were individually tested with aqueous bromine. For X, aqueous bromine became colorless, while for Y, the reddish-brown color of aqueous bromine was retained. Which of the following best describes the identity of the two hydrocarbons?

(A) X = alkane, Y = alkene
(B) X = alkene, Y = alkane
(C) Both X and Y contain the same number of carbon atoms.
(D) Both X and Y contain the same number of hydrogen atoms.

$C_5H_{12} + Br_2 \rightarrow C_5H_{11}Br + HBr$

39. What is the hybridization between carbon and hydrogen in the organic compound molecule of the product of the reaction shown above?

(A) sp
(B) sp^2
(C) sp^3
(D) sp^3d

40. Which of the following statements are true about electrophilic aromatic substitution reactions?

I. It is the most common reaction of aromatic compounds.
II. It uses both addition-elimination and elimination-addition mechanisms.
III. It occurs when an electrophilic reagent reacts with a nucleophilic aromatic ring.
IV. It occurs when an nucleophilic reagent reacts with an electrophilic aromatic ring.

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

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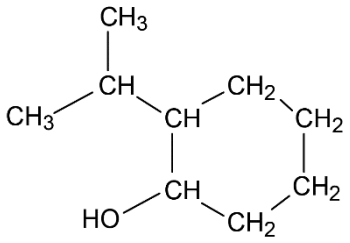


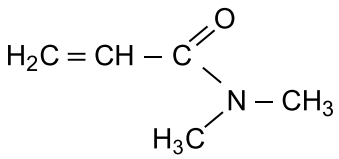
41. What is the classification of the carbon atom that is bonded to the –OH group in menthol as shown above?

(A) Primary
(B) Secondary
(C) Tertiary
(D) Quaternary

42. Which of the following properties of hydrocarbons increase(s) as the number of carbon atoms in the hydrocarbon chain increases?

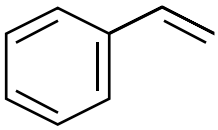
I. Density
II. Boiling point
III. Melting point

(A) I only
(B) II only
(C) III only
(D) I, II, and III



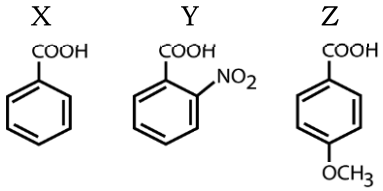
43. How many sp^2 hybridized carbon(s) is(are) present in the compound shown above?

(A) 1
(B) 2
(C) 3
(D) None



44. What is the name of the benzene derivative shown above?

(A) Styrene
(B) Toluene
(C) Ethylbenzene
(D) Benzaldehyde



45. The molecular structures of three aromatic compounds labeled X, Y, and Z, are shown in the diagram above. Which of the following shows the increasing order of acidity of the substances X, Y, and Z?

(A) Y < X < Z
(B) Y < Z < X
(C) X < Z < Y
(D) Z < X < Y

46. How many hybrid orbitals are present in a water molecule?

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

47. Which of the following processes describes the formation of glycogen from excess glucose in the blood?

(A) Ketogenesis
(B) Lipogenesis
(C) Glycogenesis
(D) Gluconeogenesis

48. Which of the following scenarios will allow a heterogenous catalysis to occur?

I. Using iron, potassium, and aluminum to catalyze the reaction of hydrogen with nitrogen to yield ammonia at 500°C
II. Using hydrochloric acid in catalyzing the reaction of ethyl acetate with water to form acetic acid
III. Using platinum to catalyze the reaction of carbon monoxide with oxygen to form carbon dioxide

(A) I only
(B) II only
(C) I and III only
(D) II and III only

PRACTICE SET

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49. Which of the following characteristics is common to all lipids?

    (A) They contain long chains of C–H bonds.
    (B) They have a glycerol backbone.
    (C) They are insoluble in water.
    (D) All of these

I. Silk fibroin extracted from silkworms
II. Keratin in hair, feathers, and nails
III. Collagen in tendons and bone matrix

50. What structure of protein is present in the above fibrous materials?

    (A) Primary
    (B) Secondary
    (C) Tertiary
    (D) Quarternary

STOP!

WAIT FOR FURTHER INSTRUCTIONS.

PRACTICE SET

PS NMAT_0619

National Medical Admission Test

ANSWER KEY TO PRACTICE SET

PART 1 - APTITUDE TESTS

SUBTEST	ITEM NUMBER																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Verbal	B	D	C	B	D	D	C	A	D	B	D	D	C	A	D	A	B	C	A	B
Inductive Reasoning	A	E	C	A	B	B	D	A	B	B	A	A	B	C	E	A	E	C	B	C
Quantitative	A	D	A	C	C	A	D	B	B	A	D	C	C	D	B	C	C	A	C	D
Perceptual Acuity	D	D	B	B	D	C	D	B	E	E	B	B	B	A	C	A	A	E	D	A

SUBTEST	ITEM NUMBER																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Verbal	B	C	A	C	A	D	C	C	D	D	C	A	B	B	B	A	B	C	C	D
Inductive Reasoning	C	E	E	E	A	E	D	D	B	D	D	C	D	E	E	A	B	C	E	E
Quantitative	B	C	A	A	D	C	B	A	D	A	B	A	C	C	D	B	D	D	B	B
Perceptual Acuity	C	A	B	B	D	D	E	C	D	D	B	B	C	B	D	E	E	D	E	D

PART 2 - SPECIAL AREAS

SUBTEST	ITEM NUMBER																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Biology	C	C	D	D	C	B	C	B	A	D	B	D	D	D	C	A	B	C	B	D	C	D	A	B	D
Physics	C	C	A	C	A	B	D	C	B	D	B	A	D	A	C	C	B	B	B	C	B	C	C	D	B
Social Science	A	B	D	C	C	D	B	A	B	B	C	C	D	C	A	D	A	D	A	B	D	A	A	C	B
Chemistry	D	B	B	C	C	D	B	A	C	B	A	C	C	A	C	D	A	C	C	B	B	C	C	A	B

SUBTEST	ITEM NUMBER																							
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Biology	D	B	C	C	C	B	C	D	D	C	A	B	C	C	A	B	B	B	A	C	A	C	B	C	C
Physics	D	A	A	A	B	D	A	D	A	B	D	C	D	D	A	D	A	D	B	B	D	C	A	D	B
Social Science	C	C	B	C	C	D	B	D	A	B	B	C	D	B	C	B	A	C	A	D	C	C	D	C	A
Chemistry	B	B	B	A	C	A	B	A	C	B	A	C	B	C	B	B	D	C	A	D	D	C	C	C	B