# ASVABer Practice Exam #1

# ASVABER

# PRACTICE EXAM #1

# Part 1: General Science (GS)

25 Questions – 11 Minutes to Complete

*Directions: This test covers knowledge of General Science at the high school level. Select the best answer for each question and mark the corresponding oval on your answer sheet for the General Science section.*

1) Edmund Halley studied comets, meteors, planets, and stars. He was a/an _____.

   a. Biologist
   b. Astronomer
   c. Meteorologist
   d. Ichthyologist

2) The _____ cells in the blood are responsible for carrying antibodies that fight off infection.

   a. Platelet
   b. Plasma
   c. Red blood
   d. White blood

3) The vector quantity that measures how fast an object moves and the direction in which it moves is _____.

   a. Speed
   b. Velocity
   c. Momentum
   d. Acceleration

4) _____ are biomes characterized by lots of rainfall and high temperatures.

   a. Deserts
   b. Tropical rainforests
   c. Deciduous forests
   d. Grasslands

5) Igneous rocks are formed from the cooling of molten material. _____ is an example of igneous rock.

   a. Pumice
   b. Shale
   c. Marble
   a. Coal

6) The green coloring that allows plants to produce food through photosynthesis is known as _____.

   a. Cellulose
   b. Hemoglobin
   c. Chitin
   d. Chlorophyll

7) On the Celsius scale, the boiling point is _____.

   a. 0°
   b. 100°
   c. 212°
   d. 373.15°

8) Newton's law of _____ states that the force needed to accelerate an object is directly proportional to the mass of the object.

   a. Gravity
   b. Relativity
   c. Entropy
   d. Inertia

9) The planet that is fourth nearest to the sun is _____.

   a. Venus
   b. Earth
   c. Mars
   d. Jupiter

10) The _____ is the part in the Earth where all life exists.

   a. Crust
   b. Atmosphere
   c. Biosphere
   d. Biome

11) 11.     An example of a marsupial is _____.

   a. Squirrel
   b. Kangaroo
   c. Platypus
   d. Woodpecker

12) Dogs and lions both have strong canine teeth for eating meat. This meat-eating animal group is most commonly known as _____.

   a. Herbivores
   b. Carnivores
   c. Omnivores
   d. Dectrivores

13) A _____ is a DNA unit that contains the code for a particular characteristic.

   a. Gene
   b. Chromosome
   c. Allele
   d. Double helix

14) Digestion is the process of breaking down food that enters the body. It starts in the _____.

   a. Mouth
   b. Esophagus
   c. Stomach
   d. Small intestines

15) The system of organs responsible for controlling all functions of the body is the _____.

   a. Central system
   b. Endocrine system
   c. Lymphatic system
   d. Nervous system

16) Bread, rice, pasta, and potatoes are examples of foods rich in _____. They are main sources of energy for the body.

   a. Carbohydrates
   b. Protein
   c. Fats
   d. Vitamins

17) The sub-atomic particle that is found in orbits around the nucleus and carries a negative charge is called _____.

   a. Atom
   b. Proton
   c. Electron
   d. Neutron

18) _____ is known as the ability to do work.

   a. Power
   b. Movement
   c. Energy
   d. Force

19) A strip of land 1 kilometer long is equal to _____.

a. 10,000 centimeters
b. 1000 meters
c. 100 decimeters
d. 10 dekameters

20) 20.  When the moon moves into the Earth's shadow, a _____ occurs.

a. Half moon
b. Full moon
c. Solar eclipse
d. Lunar eclipse

21) The thinnest and uppermost layer of the Earth is known as _____.

a. Crust
b. Asthenosphere
c. Soil
d. Upper Mantle

22) In this food chain, Plankton → Shrimp → Salmon → Sea Gull → Falcon, the role of the plankton is _____.

a. Producer
b. Primary consumer
c. Secondary consumer
d. Decomposer

23) Power is defined as the rate of work done. It is measured in _____.

a. Decibels
b. Joules
c. Watts
d. Hertz

24) The simplest form of a substance is known as _____.

a. Molecule
b. Cell
c. Mixture
d. Element

25) Acids have a pH level below 7. The taste of acids is _____.

a. Sweet
b. Spicy
c. Sour
d. Salty

# Part 2: Arithmetic Reasoning (AR)

30 Questions – 36 Minutes to Complete

*Directions: This test covers your ability to solve math related word problems. Select the best answer for each question and mark the corresponding oval on your answer sheet for the Arithmetic Reasoning section.*

1) The bride and groom invited 120 guests for their wedding reception. 90 guests arrived. What percent of the guest list was not present?

   a. 92%
   b. 25%
   c. 20.9%
   d. 29.9%

2) If x is 75 percent of 360, what is x?

   a. 298.50
   b. 297.50
   c. 279.50
   d. 270

3) A philanthropist donates 2/5 of his monthly income for the construction of the nearby church. How much percentage of his monthly income is he donating?

   a. 40%
   b. 4%
   c. 14%
   d. 400%

4) In a bundle of 30 fruits, 6 are apples and the rest are oranges. What percent of the bundle is composed of apples?

   a. 47%
   b. 47.75%
   c. 20%
   d. 40.75%

5) A writer finishes 360 pages of his manuscript in 40 hours. How many pages is his average?

   a. 9
   b. 12
   c. 6
   d. 4

6) If you were making $5.00 per hour and got a raise to %5.75 per hour, what percentage increase was the raise?

   a. 8%
   b. 7%
   c. 15%
   d. 8.5%

7) Grace answered 14 out of the 20 questions correctly. What percentage of the total number of questions was she able to answer correctly?

   a. 7%
   b. 17%
   c. 70%
   d. 77%

8) While at work, Nina checks her email once every 80 minutes. In her 8-hour work shift, how many times does she check her email?

   a. 6 times
   b. 7 times
   c. 5 times
   d. 4 times

9) If a gym measures 25 feet by 38 feet, what is its area?

    a. 905 feet
    b. 950 feet
    c. 509 feet
    d. 590 feet

10) Jean had $25.86 in her pocket. If shoes cost $7.50 a pair plus 10% tax. How many pairs can she buy?

    a. 2
    b. 3
    c. 4
    d. 5

11) A family owns 20 dozens of magazines. After donating 78 magazines to the public library, how many magazines are still with the family?

    a. 62
    b. 26
    c. 162
    d. 126

12) If 3 garbage trucks can collect the trash of 24 homes in a day, how many trucks are needed to collect in 72 houses?

    a. 9
    b. 3
    c. 24
    d. 8

13) If angles A and B are angles of a parallelogram, what is the sum of the measures of the two angles?

    a. 360 degrees
    b. 180 degrees
    c. 90 degrees
    d. Cannot be determined

14) If a box has red and blue balls in a ratio of 3:4 red to blue, how many red balls are there if 80 blue balls are in the box?

    a. 40
    b. 60
    c. 80
    d. 30

15) There are 47 convention participants staying in the university dormitory. If one dormitory room accommodates 6 participants, how many participants will be staying in the room that is not full?

    a. 7
    b. 6
    c. 5
    d. 4

16) There are 40 rooms that need to be painted and only 6 painters available. If there are still 10 rooms unpainted by the end of the day, what is the average number of rooms that each painter has painted?

    a. 5
    b. 6
    c. 7
    d. 8

17) Linda needs 2/5 of an ounce of salt to make 1 cup of dip for fries. How many cups of dip will she be able to make if she has 40 ounces of salt?

    a. 40 cups
    b. 80 cups
    c. 100 cups
    d. 120 cups

18) An architect's floor plan uses 1/2 inch to represent one mile. What is the actual distance represented by 4 1/2 inches?

    a. 9 miles
    b. 8 miles
    c. 7 miles
    d. 6 miles

19) In the deck of cards, there are two spades, 3 hearts, 5 clubs, and 8 diamonds. What is the probability that Alan will pick out a spade?

a. 1/18
b. 1/2
c. 1/9
d. 1/8

20) If a tutor earns $1 per hour, how much will she earn in a week if she reports on Mondays and Thursdays, 10 AM to 12 noon and 1 PM to 7 PM, and Saturdays, 9 AM to 12 noon?

a. $20
b. $19
c. $18
d. $17

21) What is the prime factorization of 560?

a. 2 x 2 x 5 x 7
b. 5 x 7
c. 2 x 2 x 2 x 2 x 5 x 7
d. 2 x 2 x 2 x 5 x 7

22) I've got 26 quarts of milk and my family drinks 2 gallons of milk per week. How many weeks will that last us?

a. 2 weeks
b. 2.5 weeks
c. 2.25 weeks
d. 3.25 weeks

23) An employee's ratings on performance appraisals for the last three quarters were 92, 88, and 86. If the required yearly average to qualify for the promotion is 90, how much should the fourth quarter rating be?

a. 90
b. 93
c. 92
d. 94

24) ABC Corporation earned only $120,000 during the previous year, one-third only of the management's predicted income. How much earning did the management predict?

a. $40,000
b. $360,000
c. $36,000
d. $400,000

25) Mae reported to work at 8:45 AM and went out at 6:15 PM. How many hours and minutes did she stay in the office?

a. 9 hours
b. 6 hours
c. 9 hours and 30 minutes
d. 6 hours and 30 minutes

26) 42 passengers fit on my plane. How many trips will I have to make to transport 104 people 100 miles in 1 day?

a. 4
b. 5
c. 3
d. 2

27) A pole is 8 feet long. Its shadow is 6 feet long. If you draw a line from the tip of the pole to the tip of the shadow, how long will the line be?

   a. 18 feet
   b. 12 feet
   c. 20 feet
   d. 10 feet

28) A company pays its writer $3 for every 300 words written. How much will a writer earn for an article with 760 words?

   a. $9
   b. $3.6
   c. $7.6
   d. $6.7

29) An item in the store originally priced at $300 was marked down 20% then an additional 15%. What was the final sale price of the item

   a. $240
   b. $204
   c. $195
   d. $200

30) A newlywed couple bought a car with $3500 down payment and needs to pay $580 per month for four and a half years. How much did they have to pay for that car, all in all?

   a. $34820
   b. $35802
   c. $5800
   d. $31320

# Part 3: Word Knowledge (WK)

35 Questions – 11 Minutes to Complete

*Directions: This test covers your knowledge of the meaning of words. Each question has an underlined word. You will be asked to identify the answer most like the underlined word or most opposite the underlined word. Select the best answer for each question and mark the corresponding oval on your answer sheet for the Word Knowledge section.*

1) Cycle most nearly means:

   a. An interval during which a recurring sequence of events occurs.
   b. Preceding
   c. Of surpassing excellence.
   d. a warm ocean

2) Erratic most nearly means:

   a. military expeditions made by Christian Europeans against Muslims
   b. Directly and without evasion
   c. Likely to perform unpredictably
   d. Head strong

3) Fanatic most nearly means.

   a. Likely to fail or be inaccurate.
   b. Physically weak.
   c. Lacking strength or vigor.
   d. Marked by excessive enthusiasm for and intense devotion to a cause or idea.

4) Benefit most nearly means:

   a. Wander from a direct or straight course.
   b. Put out or expel from a place.
   c. Vulnerably delicate.
   d. Something that aids or promotes wellbeing.

5) Fallible most nearly means.

   a. Not based on fact; dubious.
   b. Likely to fail or be inaccurate.
   c. another way of doing something
   d. Refrain from voting.

6) Atone most nearly means.

   a. Realize beforehand.
   b. Make amends for.
   c. Full of love and generosity.
   d. Run away.

7) Frail most nearly means:

   a. Destroy completely.
   b. Physically weak.
   c. Full of love and generosity.
   d. Make sense of; assign a meaning to.

8) Interpret most nearly means:

   a. Preceding
   b. assign a meaning to
   c. Put out or expel from a place.
   d. Likely to fail or be inaccurate.

9) <u>Feeble</u> most nearly means:

   a. Of surpassing excellence.
   b. Not based on fact; dubious.
   c. Change the nature, purpose, or function of something.
   d. Lacking strength or vigor.

10) <u>Charitable</u> most nearly means:

   a. Use up, as of resources or materials.
   b. Full of love and generosity.
   c. military expeditions made by Christian Europeans against Muslims
   d. A dictator or dictatorial person.

11) <u>Devour</u> most nearly means:

   a. Refrain from voting.
   b. Ill-mannered
   c. An interval during which a recurring sequence of events occurs.
   d. Destroy completely.

12) <u>Coffer</u> most nearly means:

   a. A chest especially for storing valuables.
   b. Use up, as of resources or materials.
   c. Vulnerably delicate.
   d. Pronounce not guilty of criminal charges.

13) <u>Mundane</u> most nearly means:

   a. a group of islands
   b. On the point of death; breathing your last.
   c. Boring
   d. Question or examine thoroughly and closely.

14) <u>Convert</u> most nearly means.

   a. Of surpassing excellence.
   b. Make sense of; assign a meaning to.
   c. Change the nature, purpose, or function of something.
   d. Lacking strength or vigor.

15) <u>Alternative</u> most nearly means:

   a. Make sense of; assign a meaning to.
   b. Physically weak.
   c. A dictator or dictatorial person.
   d. another way of doing something

16) <u>Commend</u> most nearly means:

   a. Express approval of.
   b. An interval during which a recurring sequence of events occurs.
   c. Likely to perform unpredictably.
   d. Not based on fact; dubious.

17) Fragile most nearly means:

    a. Delicate.
    b. Directly and without evasion
    c. Refrain from voting.
    d. Ill-mannered.

18) Consume most nearly means:

    a. Promote
    b. Unpredictable.
    c. Direct.
    d. Use

19) Abstain most nearly means:

    a. Devoted.
    b. Refrain.
    c. Realize
    d. Transform.

20) Forthright most nearly means.

    a. Evade.
    b. Apprehend.
    c. Direct.
    d. Important.

21) Anticipate most nearly means:

    a. Apologize.
    b. Realize beforehand.
    c. Dilatory.
    d. alternative

22) Brilliant most nearly means.

    a. a warm ocean current
    b. A dictator or dictatorial person.
    c. Of surpassing excellence.
    d. Lacking strength or vigor.

23) Fugitive most nearly means.

    a. Physically weak.
    b. Likely to fail or be inaccurate.
    c. Destroy completely.
    d. On the run

24) Autocrat most nearly means:

    a. Anything that precedes something similar in time.
    b. A dictator or dictatorial person
    c. Circus performer
    d. Librarian

25) Fanciful most nearly means:

    a. Generous.
    b. Not based on fact
    c. expedition
    d. Weak.

26) Alter most nearly means:

    a. Apologize
    b. Impose
    c. Change
    d. Wander

27) <u>Crusade</u> most nearly means:

   a. Likely to fail or be inaccurate.
   b. another way of doing something
   c. Use up, as of resources or materials.
   d. military expeditions made by Christian Europeans against Muslims

28) <u>Eject</u> most nearly means:

   a. Engage
   b. Contemptible
   c. Expel.
   d. Enthusiastic

29) <u>Crucial</u> most nearly means:

   a. Explanation
   b. Of the greatest importance.
   c. Direction
   d. Well being

30) <u>Acquit</u> most nearly means:

   a. Pronounce not guilty of criminal charges.
   b. Anything that precedes something similar in time.
   c. Put out or expel from a place.
   d. Something that aids or promotes wellbeing.

31) <u>Boorish</u> most nearly means:

   a. Guilty
   b. Intelligent.
   c. Ill-mannered
   d. Stowaway

32) <u>Forerunner</u> most nearly means:

   a. Inventor.
   b. Anything that precedes something similar in time.
   c. Running behind
   d. Storm

33) <u>Tenable</u> most nearly means:

   a. Destroy and strip of its possession.
   b. Go back to a statistical means.
   c. Based on sound reasoning or evidence.
   d. Not growing or changing; without force or vitality.

34) <u>Asperity</u> most nearly means:

   a. Go back to bad behavior.
   b. Take delight in.
   c. A sketchy summary of the main points of an argument or theory.
   d. Harshness of manner.

35) <u>Incalculable</u> most nearly means:

   a. A person who is an assistant or subordinate to another.
   b. Concerned with the world or worldly matters.
   c. Lacking firmness of will or character or purpose.
   d. Not capable of being calculated.

# Part 4: Paragraph Comprehension (PC)

15 Questions – 13 Minutes to Complete

*Directions: This test covers your knowledge of reading comprehension. Each question pertains to a corresponding paragraph. Read the paragraphs and answer the questions. Select the best answer for each question and mark the corresponding oval on your answer sheet for the Paragraph Comprehension section.*

## Questions 1, 2 & 3 are based on the following passage:

It is important to have good credit in the world today. Many large purchases are made by borrowing money and paying it back over a set period of time. Several factors should be considered before making a purchase. Is this item a need or a want? Is the item important enough to pay the interest necessary to borrow money? Banks and credit cards charge interest on the money you borrow from them. Interest is based on an Annual Percentage Rate (APR). There are different types of credit that are used. The three most common are installment loans, credit cards, and lines of credit. Once you have credit cards, you need to protect yourself from theft and fraud. You should keep track of your credit cards by making a list of them. Write down account numbers, addresses, and contact phone numbers for each card and store the list in a safe place. If a card is lost or stolen, this information will be vital for contacting the issuer of the card.

1) Which of the following is not a typical form of credit?

   a. Credit Card
   b. Line of Credit
   c. Installment Loan
   d. Bank Draft

2) The main idea of this passage is:

   a. Credit Cards are risky
   b. Credit Cards are expensive
   c. Good credit is important and requires responsible action by the holder.
   d. Once you have credit, you can make large purchases

3) How do banks make money by giving you credit:

   a. They charge interest on the money you borrow
   b. They are backed by the government
   c. Not evident in this passage.
   d. Both A & B are correct

When I asked why they had moved to Lexington, Kentucky, the boy, whose name was Tony, explained that their house back in West Virginia had caught fire. Tony's father heard his son, and had walked past by them and acknowledged me. "Tony was a brave young man that night," his father said proudly.

4) According to the passage above, how many people are engaged in conversation?

   a. One
   b. Two
   c. Three
   d. Four

The torrid flames caused irreparable damage to the furniture and other things in the boys' rooms. But that night we realized just how much we have to be thankful for. Our family was safe, and that's all that really mattered."

5) The main idea of the passage above is?

   a. Safety is what really matters
   b. The family was poor
   c. There was a fire in the boy's room
   d. The family was religious

We felt a little like spies. My little brother and I had our noses pressed firmly against the window in our front den as we watched our new neighbors unpacking their U-Haul van. The license plate on their SUV passively announced that they had moved from the state of West Virginia. I decided it was my civic duty to welcome them to Lexington, Kentucky!

6) According to the passage above, where did the family move from?

   a. Ohio
   b. West Virginia
   c. Kentucky
   d. Atlanta

On the 28th day of April in the year 1789, a group of men declared mutiny against their captain and took control of his ship, the HMS Bounty. The captain was William Bligh.

7) From the passage above, we can safely infer?

   a. Captain Bligh was a great leader
   b. It was a beautiful spring morning
   c. The men were unhappy with Captain Bligh
   d. HMS stands for His Majesty's Ship

Questions 8,9 & 10 are based on the following passage:

His ship had set sail from England in December of 1787. The plan had been to pick up a cargo of breadfruit saplings in Tahiti and deliver them to the West Indies. After the ten-month journey, Bligh and his crew arrived in Tahiti, where they enjoyed the tropical island paradise for more than five months. Trouble began brewing.

Fletcher Christian was his master's mate; he was second in command and had been Bligh's friend. Yet something moved Christian to lead 25 members of Captain Bligh's crew in a mutiny against the captain. On April 28, 1789, Christian took control of the ship and set Bligh and 18 loyal supporters adrift in an overcrowded, 23-foot-long boat, abandoning them in the middle of the Pacific Ocean. And what became of Captain Bligh and his faithful men? Amazingly, they did not drown, starve, or end up lost at sea. Although they were abandoned with little food, no charts, and a broken sextant, Bligh's excellent seafaring skills took them to Timor in the East Indies.

8) What was Bligh's position on the boat?

a. First Mate
b. Captain
c. Owner
d. Chaplin

9) How long did it take for the crew to mutiny?

a. One year
b. Two Years
c. 16-17 Months
d. 22-24 Months

10) How many people can fit into a 23-foot-long boat?

a. 10
b. 25
c. 30
d. At least 19

In December of 1941, the Japanese attacked Pearl Harbor. With its Pacific fleet shattered, the U.S. was catapulted into war. President Roosevelt needed a new commander in the Pacific. He chose Chester Nimitz over 28 other men with more seniority.

11) According to the passage above, who was President when the Japanese attacked Pearl Harbor?

    a. Kennedy
    b. Eisenhower
    c. Roosevelt
    d. Nimitz

Admiral Nimitz didn't sound like a man who had 2 million people, 5,000 ships, and 20,000 planes at his command. In fact, he was quite a soft-spoken man. One journalist wrote: "the Admiral was...the despair of his public relations men; it simply was not in him to make sweeping statements or to give out colorful interviews."

12) The main idea of the passage above is?

    a. Nimitz was a quiet person
    b. The Navy had lots of ships and planes
    c. Nimitz did not like the PR people
    d. Nimitz preferred black and white television

He was born into poverty, yet left the world with one of the most prestigious gifts. Alfred Nobel, inventor of dynamite and creator of the Nobel Prize, was born October 21, 1833. He excelled in his studies and made his parents proud. His father taught him the value of hard work and a good education. Alfred's studies in chemistry led to his greatest invention. He combined the nitroglycerine with gunpowder and created a powerful explosive that many were interested in obtaining. However, the ingredients had to be kept separate and the nitroglycerine was extremely dangerous.

13) According to this passage, what did Nobel's father teach him?

    a. explosives
    b. chemistry
    c. the value of hard work
    d. how to make dynamite

## Questions 14 & 15 are based on the following passage:

Pablo Picasso was born Pablo Nepomuceno Crispin Crispiniano de los Remedios Cipriano de la Santisima Trinidad Ruis Picasso. For a person with such a long legal name, Pablo ended up being known by his last name. Picasso is both legend and reality, an eclectic mix of genius and talent in the world of art that few have been able to imitate, much less match. Picasso's style changed a lot over his life, and his most lasting contribution to modern art was the development of a style called Cubism. Picasso had several recognizable artistic periods. The three phases of Cubism were Facet Cubism, Analytic Cubism, and Synthetic Cubism. Picasso's painting, *Les Demoiselles d'Avignon*, which he painted in 1907, is considered by many to be the first Cubist painting. This piece is now in the Museum of Modern Art in New York. Soon, many painters all over the world took up this style because Picasso started a revolution where the soldiers carried paintbrushes.

14) The main idea of this passage is?

   a. Picasso's influence on an artistic style known as cubism
   b. The first cubist painting
   c. Why soldiers carry paint brushes
   d. Picasso had a long name

15) Which of the following is not a phase of cubism?

   a. Facet
   b. Autistic
   c. Analytical
   d. Synthetic

# Part 5: Auto and Shop (AS)

25 Questions – 11 Minutes to Complete

*Directions: This test covers your knowledge of tools, automobile and shop terminology and practices  Select the best answer for each question and mark the corresponding oval on your answer sheet for the Auto & Shop section.*

1) What gas mixture is typically used in high temperature cutting torches?

   a. Acetylene : Oxygen
   b. Butane: Methane
   c. Nitrogen : Oxygen
   d. Oxygen : Helium

2) The 3$^{rd}$ stroke in a four-stroke cycle is?

   a. Power stroke
   b. Compression stroke
   c. Intake stroke
   d. Back Stroke

3) Which of the following is not one of the major systems found in an automobile?

   a. Ignition
   b. Exhaust
   c. Emission Control
   d. Acceleration

4) What three things must be present for combustion to occur?

   a. Air, fuel, water
   b. Fuel, air, ignition source
   c. Exhaust, air, fuel
   d. Water, ignition source, fuel

5) What kind of saw is typically used with a miter box?

   a. Hack saw
   b. Key saw
   c. Back saw
   d. Rip saw

6) In which automotive system would you find the master cylinder?

   a. Ignition
   b. Exhaust
   c. Cooling
   d. Braking

7) Most car engines today are?

   a. Internal Combustion
   b. External Combustion
   c. Steam
   d. DOHC

8) Which type of nail is best for counter sinking?

   a. 16 penny nail
   b. Double head nail
   c. Brad
   d. Roofing nail

9) What is the advantage of a box wrench over an open ended wrench?

   a. Its adjustable
   b. Its faster
   c. Its less likely to slip
   d. Its longer

10) Which type of wrench would not typically be used on a pipe?

   a. Stillson
   b. Strap Wrench
   c. Chain Wrench
   d. Torque Wrench

11) Why would you use a counter sink?

   a. Drill a hole in a counter
   b. Your hole punch is not working
   c. Set a screw flush with the surface
   d. Drive a rivet into wood

12) The item below is a _____?

   a. Hack Saw
   b. Cross cut Saw
   c. Back Saw
   d. Compass Saw
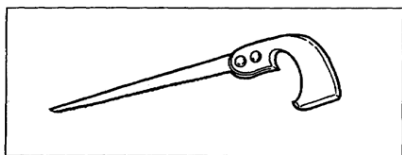


13) An Auger bit is a _____?

   a. Striking Tool
   b. Boring Tool
   c. Turning Tool
   d. Framing Tool

14) An instrument used to measure the depth of holes, slots, counter bores and recesses is a _____?

   a. Counter sink
   b. T-Bevel
   c. Depth Gage
   d. Feeter Gage

15) What best describes the function of a limited slip differential?

   a. Used to tighten large bolts
   b. Transfers power to the wheel with the greatest amount of traction
   c. Transfers power to both wheels at the same time
   d. Prevents breaks from locking

16) The item below is a _____?

   a. Inside Caliper
   b. Caliper Square
   c. Outside Caliper
   d. Vernier Caliper

17) The item in the figure below is a _____?

   a. Cotter Pin
   b. Brad
   c. Woodruff Key
   d. Taper Pin

22) Which of the following is not a striking tool?

   a. Mallet
   b. Sledge
   c. Hammer
   d. Chisel

18) Graphite is a _____?

   a. Lubricant
   b. Surfactant
   c. Disinfectant
   d. Fuel Source

23) DOHC refers to _____?

   a. The overhead cam arrangement
   b. The overhead valve arrangement
   c. The firing order arrangement
   d. None of the above

19) Fuel Injection took the place of _____ in most current automobiles?

   a. Antilock Brakes
   b. Manifold
   c. Carburetor
   d. Master Cylinder

24) The ideal ratio of air to fuel is known as _____?

   a. Plyometric
   b. Stoichiometric
   c. Kinesthetic
   d. Lean Mixture

20) In a 4 cycle engine, when does ignition and firing occur?

   a. Intake Stroke
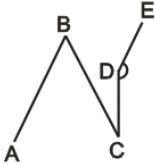   b. Power Stroke
   c. Back Stroke
   d. Exhaust Stroke

25) The _____ is responsible for moving coolant through the cooling system in order to transfer and control heat?

   a. Heat Pump
   b. Water Pump
   c. Radiator Hose
   d. Thermostat

21) _____ connects the crank shaft to the piston?

   a. Transmission arm
   b. Connecting Rod
   c. Push Rod
   d. Intake Valve

# Part 6: Mathematics Knowledge (MK)

25 Questions – 24 Minutes to Complete

*Directions: This test covers your knowledge of general mathematics including algebra and geometry.  Select the best answer for each question and mark the corresponding oval on your answer sheet for the Mathematics Knowledge section.*

1)  Which is of the following NOT true?

    a.  A rectangle is a parallelogram.
    b.  A rhombus is a square.
    c.  A square is a rectangle.
    d.  A rectangle is a rhombus.

2)  Which is of the following NOT true?

    a.  A quadrilateral is a rectangle if and only if all angles are congruent.
    b.  A square is a regular quadrilateral.
    c.  A square is a rhombus with unequal diagonals.
    d.  A rhombus is an equiangular parallelogram.

3)  If segment AB is parallel to segment DE  and, angle B = 65 ° and angle C= 33 °, what is the measure of angle D?

    a.  148°
    b.  90°
    c.  75°
    d.  180°

4)  Two points -4.6 and 4.8 are on a number line. What is the distance, to the nearest tenth, between these two points?

    a.  9.1
    b.  10.2
    c.  9.4
    d.  8.4

5)  Two lines are said to be _____ if they do not intersect.

    a.  skew
    b.  transversal
    c.  either parallel or skew
    d.  parallel

6)  Points X and Y are on $\overline{AB}$ . If $\overline{AX} > \overline{BY}$, then which statement must be true?

    a.  AY < BY
    b.  AX < BX
    c.  AY + BX > AB
    d.  AY > BX

7)  Half the cube of 4 is:

    a.  16
    b.  8
    c.  22
    d.  32

8)  Victoria baked a cake and cut it into thirty-six pieces. Her brother ate eight-ninths of the cake. How many pieces were left?

    a.  4
    b.  8
    c.  12
    d.  16

9)  $\sqrt{81} =$
    a.  6
    b.  8
    c.  9
    d.  5

10) IF x=4, which of the following equations does not result in an integer?

    a.  2x + 16
    b.  (2x+16)/4
    c.  $3x^2 + 1$
    d.  $\frac{3x}{5}$

11) If it takes 2 minutes to fill your gas tank 2/3 full, how long does it take to fill it up?

    a.  6 minutes
    b.  4 minutes
    c.  5 minutes
    d.  3 minutes

12) Side A of a square measure 4 ". What is the length of the diagonal?

    a.  4√2
    b.  16
    c.  32
    d.  18

13) What is the sum of the prime numbers below?

    10, 13, 16, 25, 19, 47

    a.  23
    b.  39
    c.  79
    d.  66

14) Rounded to the nearest whole number, the square root of 15,479,652 is:

    a.  3934
    b.  34652
    c.  99
    d.  125

15) One third the cube of 3 is:

    a.  16
    b.  9
    c.  22
    d.  32

16) $\sqrt{400} = x^2$, what is x?

    a.  30
    b.  $2\sqrt{5}$
    c.  20
    d.  40

17) 10% of 10% of 100 is:

    a.  1
    b.  9
    c.  10
    d.  20

18) How many digits are left of 0 in the square root of 15,245,478 is:

    a.  5
    b.  6
    c.  7
    d.  4

19) The supplement of a 30° angle is:

    a.  15°
    b.  150°
    c.  60°
    d.  120°

20) $Y^4 \times Y^6 =$

    a.  $Y^{24}$
    b.  $Y^{10}$
    c.  $2Y^{10}$
    d.  $Y^2$

21) Which of the following statements is false?

    a.  A trapezoid is a quadrilateral
    b.  Interior angles of a trapezoid add up to 360°
    c.  Two sides of a trapezoid are always parallel
    d.  area of a trapezoid = ½ b x h

22) Convert 36% to a fraction

    a.  1/2
    b.  2/3
    c.  9/25
    d.  3/4

23) Angel A is 3 times its Supplement Angle B, what is the measurement of Angle A?

    a.  45°
    b.  135°
    c.  270°
    d.  35°

24) The 4th root of 256 is:

    a.  4
    b.  8
    c.  16
    d.  24

25) Grace answered 14 out of the 20 questions correctly. What percentage of the total number of questions was she able to answer correctly?

    a.  14%
    b.  70%
    c.  77%
    d.  80%

# Part 7: Electronics Information (EI)

20 Questions – 9 Minutes to Complete

*Directions: This test covers your knowledge of principles of electricity and electronics. Select the best answer for each question and mark the corresponding oval on your answer sheet for the Electronics Information section.*

1)   An ohm meter measures _____

   a.   Current
   b.   Resistance
   c.   Capacitance
   d.   Pressure

2)   I = V x R is _____

   a.   Ohm's Law
   b.   Behr's Law
   c.   Power's Law
   d.   None of the Above

3)   A kilowatt-hour represents _____ watts

   a.   100
   b.   1,000
   c.   10,000
   d.   10

4)   The number of times current changes direction per second is known as _____

   a.   frequency
   b.   resistance
   c.   capacitance
   d.   voltage

5)   The typical house runs on _____

   a.   Direct Current
   b.   Direct Frequency
   c.   Alternating Current
   d.   Alternating Frequency

6)   Two like poles of a magnet _____

   a.   Attract each other
   b.   Repel each other
   c.   Create electricity
   d.   Store electricity

7)   Which electronic component is rated in millihenries (mH)?

   a.   Capacitor
   b.   Resistor
   c.   Inductor
   d.   Transformer

8)   Which electronic component is rated in microfarads?

   a.   Capacitor
   b.   Resistor
   c.   Inductor
   d.   Transformer

9) Which of the following is NOT part of a diode?

   a. Emitter
   b. Base
   c. Collector
   d. Ground

10) A rectifier _____

   a. Amplifies current
   b. Reduces current
   c. Changes AC to DC
   d. Stores electricity

11) What factor does NOT relate to the flow of electricity?

   a. Pressure
   b. Current
   c. Transferrance
   d. Resistance

12) The symbol below represents a _____

   a. Diode
   b. Battery
   c. Resistor
   d. Transformer

13) The symbol below represents _____

   a. Ground
   b. Capacitor
   c. Transistor
   d. Battery

14) In North America, AC is always delivered at _____

   a. 60 Hz
   b. 50 Hz
   c. 220 Hz
   d. 110 Hz

15) An electrical circuit with only one path for current to flow is known as a _____ circuit

   a. series
   b. parallel
   c. tri-pole
   d. bi-pole

16) The most common type of circuit in a house is _____

   a. series
   b. parallel
   c. series-parallel
   d. dynamic

17) Hertz (Hz) indicates _____?

    a. Amperage
    b. Frequency
    c. Power
    d. Power & Distance

18) Semiconductors are most commonly made of _____?

    a. Silicon
    b. Plastic
    c. Germanium
    d. Both A & C are correct

19) Anode and Cathode are part of a _____?

    a. Resistor
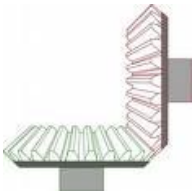    b. Capacitor
    c. Diode
    d. None of the above

20) Which of the following is NOT a type of transistor?

    a. NPN
    b. PNP
    c. PCP
    d. None of the above

# Part 8: Mechanical Comprehension (MC)

25 Questions – 19 Minutes to Complete

*Directions: This test covers your knowledge of mechanical and physical principles. Select the best answer for each question and mark the corresponding oval on your answer sheet for the Mechanical Comprehension section.*

1)  The type or class of lever depends on the arrangement of which elements?

    a.  Fulcrum
    b.  Effort
    c.  Resistance
    d.  All of the above

2)  A crowbar is an example of which kind of lever?

    a.  First class
    b.  Second Class
    c.  Hydraulic
    d.  Third Class

3)  Which type of gear is shown below?

    a.  Spur
    b.  Worm
    c.  Bevel
    d.  Weasel



4)  A gun tackle uses how many pulleys?

    a.  1
    b.  2
    c.  3
    d.  4

5)  The common unit of measure for power is?

    a.  torque
    b.  pounds
    c.  foot-pounds
    d.  horse power

6)  A common use for a wedge would be?

    a.  Loading a truck
    b.  Lifting a box
    c.  Splitting a log
    d.  Jacking a car

7)  Which of the following is not true about gears?

    a.  Gears can be used to change direction
    b.  Gears can be used to change speed
    c.  Gears can be used to magnify force
    d.  Gears measure work

8)  Which of the following equations is true?

    a.  $F = P \times A$
    b.  $I = F \times R$
    c.  $P = M \div K$
    d.  A & C are true

9)    Springs are typically made of_____?

    a.   Rubber
    b.   Plastic
    c.   Steele
    d.   Carbon

10)   Which is not a type of spring?

    a.   Cylinder
    b.   Flat
    c.   Spiral
    d.   Helical

11)   When Speed goes up _____?

    a.   Torque goes up
    b.   Torque goes down
    c.   Friction is increased
    d.   Weight goes down

12)   The term coupling means?

    a.   Hold two parts together
    b.   Transfer electricity
    c.   A male-female connection
    d.   Transfer heat

13)   A clutch is a form of _____?
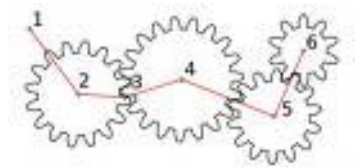
    a.   Gear
    b.   Cam
    c.   Coupling
    d.   Transmission

14)   Pounds per square inch is a measure of?

    a.   Pressure
    b.   Weight
    c.   Hole depth
    d.   circumference

15)   Which of the gears are moving the same direction?
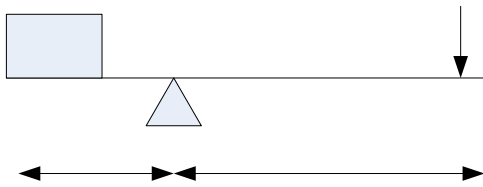
    a.   2 & 4
    b.   5 & 6
    c.   2, 4 & 6
    d.   2 & 5



16)   An example of a wheel and axle device would be?

    a.   Wheel Barrow
    b.   Steering Wheel on your car
    c.   Wagon
    d.   Motorcycle

17)



How much weight is needed to move the object
if the fulcrum is moved 3 ft to the right?

a.  5 lbs
b.  10 lbs
c.  20 lbs
d.  1 lbs

23) What did Pascal discover?

    a. 3$^{rd}$ principle of hydraulics
    b. 3$^{rd}$ law of motion
    c. Pythagorean Theorem
    d. Pasteurization

24) The advantage gained by the use of a mechanism in transmitting force is known as?

    a. gravity
    b. inertia
    c. mechanical advantage
    d. strategic advantage

25) Who developed the law of inertia?

    a. Newton
    b. Einstein
    c. Plato
    d. Pasteur

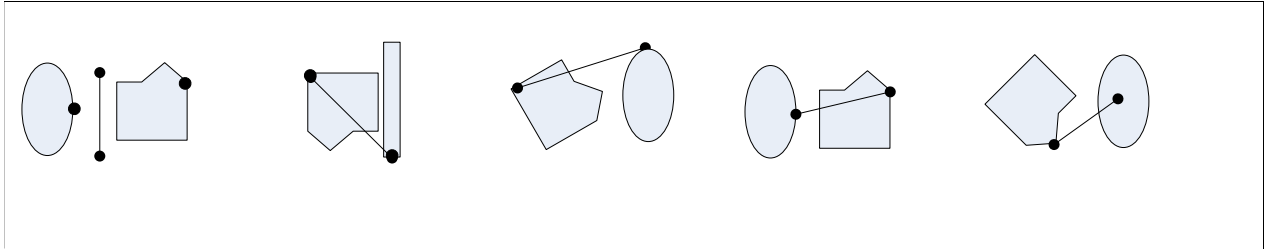# Part 9: Assembling Objects (AO)

16 Questions – 15 Minutes to Complete

*Directions: This test covers your sense of spatial organization.  Select the best answer for each question and mark the corresponding oval on your answer sheet for the Assembling Objects section.*
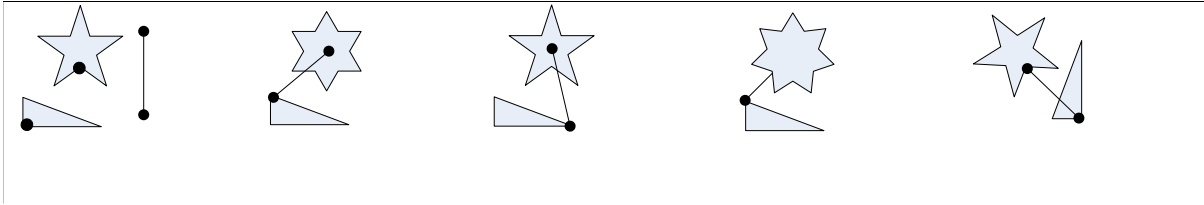
1)
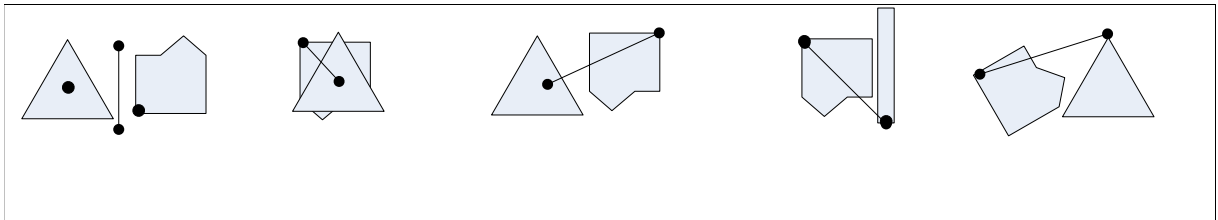
6)

12)

# Answer Key

| General Science | Arithmetic Reasoning | Word Knowledge | Paragraph Comprehension | Auto & Shop Information | Mathematics Knowledge |
|---|---|---|---|---|---|
| 1. B | 1. B | 1. A | 1. D | 1. A | 1. B |
| 2. D | 2. D | 2. C | 2. C | 2. A | 2. C |
| 3. B | 3. A | 3. D | 3. A | 3. D | 3. A |
| 4. B | 4. C | 4. D | 4. C | 4. B | 4. C |
| 5. A | 5. A | 5. B | 5. A | 5. C | 5. D |
| 6. D | 6. C | 6. B | 6. B | 6. D | 6. D |
| 7. B | 7. C | 7. B | 7. C | 7. A | 7. D |
| 8. D | 8. A | 8. B | 8. B | 8. C | 8. A |
| 9. C | 9. B | 9. D | 9. C | 9. C | 9. C |
| 10. C | 10. B | 10. B | 10. D | 10. D | 10. D |
| 11. B | 11. C | 11. D | 11. C | 11. C | 11. D |
| 12. B | 12. A | 12. A | 12. A | 12. D | 12. A |
| 13. A | 13. D | 13. C | 13. C | 13. B | 13. C |
| 14. A | 14. B | 14. C | 14. A | 14. C | 14. A |
| 15. D | 15. C | 15. D | 15. B | 15. B | 15. B |
| 16. A | 16. A | 16. A | | 16. C | 16. B |
| 17. C | 17. C | 17. A | | 17. A | 17. A |
| 18. C | 18. A | 18. D | | 18. A | 18. D |
| 19. B | 19. C | 19. B | | 19. C | 19. B |
| 20. D | 20. B | 20. C | | 20. B | 20. B |
| 21. A | 21. C | 21. B | | 21. C | 21. D |
| 22. A | 22. D | 22. C | | 22. D | 22. C |
| 23. C | 23. D | 23. D | | 23. A | 23. B |
| 24. D | 24. B | 24. B | | 24. B | 24. A |
| 25. C | 25. C | 25. B | | 25. B | 25. B |
| | 26. C | 26. C | | | |
| | 27. D | 27. D | | | |
| | 28. C | 28. C | | | |
| | 29. B | 29. B | | | |
| | 30. A | 30. A | | | |
| | | 31. C | | | |
| | | 32. B | | | |
| | | 33. C | | | |
| | | 34. D | | | |
| | | 35. D | | | |

# Answer Key

| Mechanical Comprehension | Electronics Information | Assembling Objects |
|---|---|---|
| 1.  D | 1.  B | 1.  B |
| 2.  A | 2.  A | 2.  B |
| 3.  C | 3.  B | 3.  A |
| 4.  B | 4.  A | 4.  B |
| 5.  D | 5.  C | 5.  D |
| 6.  C | 6.  B | 6.  C |
| 7.  D | 7.  C | 7.  B |
| 8.  A | 8.  A | 8.  D |
| 9.  C | 9.  D | 9.  D |
| 10.  A | 10.  C | 10.  C |
| 11.  B | 11.  C | 11.  A |
| 12.  A | 12.  D | 12.  D |
| 13.  C | 13.  A | 13.  A |
| 14.  A | 14.  A | 14.  C |
| 15.  D | 15.  A | 15.  D |
| 16.  B | 16.  C | 16.  A |
| 17.  C | 17.  B | |
| 18.  A | 18.  D | |
| 19.  A | 19.  C | |
| 20.  A | 20.  C | |
| 21.  C | | |
| 22.  D | | |
| 23.  A | | |
| 24.  C | | |
| 25.  A | | |