**A**

**1** Which formula represents a salt?

A ) $CH_3OH$
B ) $KOH$
C ) $CH_3COOH$
D ) $KCl$
E ) $HCl$

**2** **Ozone molecule splits upon stroked by?**

A ) Infra Red
B ) Ultra Violet
C ) X-Rays
D ) Gamma Rays
E ) Radio Wave

**3** **When a substance is oxidized, it**

A ) gains protons
B ) acts as a reducing agent
C ) acts as an oxidizing agent
D ) loses protons
E ) none of the above

**4** **Which element is present in all organic compounds?**

A ) phosphorous
B ) oxygen
C ) nitrogen
D ) carbon
E ) Iron

**A**

**5** **Which formula represents a binary compound?**

A ) Hydrogen sulphate
B ) Ammonium sulphate
C ) hydrogen sulphide
D ) Ammonium sulphide
E ) Sodium hydroxide

**6** **Trolley A has a mass of M and trolley B has a mass of 4M. The trolleys collide with each other head on, stick together and move with a velocity of 2/5m/s in the direction of the A. The ratio of the velocity of A to the velocity of B is:**

A ) 6
B ) 1/4
C ) 1/6
D ) 2
E ) 4

**7** **The concept that new varieties of organisms are still evolving is best supported by the**

A ) decreasing number of new fossils discovered in undisturbed rock layers
B ) increasing need for new antibiotics
C ) increasing number of individuals in the human population
D ) decreasing activity of photosynthetic organisms due to warming of the atmosphere
E ) increasing activity of human mobility

A

**8** **The strength of the magnetic field between the poles of an electromagnet would NOT change if the**

A ) The current were doubled
B ) Number of windings were doubled
C ) Distance between poles increased
D ) Direction of the current were reversed
E ) Material of the core changed

**9** **The amount of energy dissipated in unit time is:**

A ) Moment
B ) Power
C ) Velocity Ratio
D ) Mechanical Advantage
E ) Efficiency

**10** **A wooden block is placed on an inclined plane. if the angle of inclination increases the coefficient of friction between the bottom surface of the block and the surface:**

A ) will increase uniformly
B ) will first increase then decrease
C ) decreases uniformly
D ) will remain same
E ) will first decrease then increase

**11** **Which of the following must be made from a material which maintains its magnetism?**

A ) The magnet in a moving coil meter
B ) The core of an electromagnet
C ) The core of a transformer
D ) The commutator for a d.c. motor
E ) The slip rings of an a.c. generator

**12** **Haber process is used to make**

A ) Nitric acid
B ) Ammonia
C ) Copper sulphate
D ) Sulphuric acid
E ) Sodium peroxide

**13** **In living plants, when does respiration occur?**

A ) only in total darkness
B ) only in the morning
C ) only during digestion
D ) only in the daytime
E ) all the time

**14** **Which of the elements are both noble gases?**

A ) Oxygen, hydrogen
B ) Helium, xenon
C ) Chlorine, neon
D ) Nitrogen, argon
E ) Bromine, nitrogen

A

**15** **A ball is thrown vertically upwards with an initial velocity of 40m/s. ($g=10m/s^2$)**
**What is the velocity at the end of fife second?**

A ) 20m/s
B ) -10m/s
C ) -20m/s
D ) 10m/s
E ) 40m/s

**16** **In the national grid system the transmission of electrical energy is by means of overhead conductors. These conducting wires carry**

A ) Direct current with high frequency
B ) Alternating current with high frequency
C ) Alternating current with high voltage
D ) Alternating current with low frequency
E ) Direct current with low voltage

**17** **Which of the following about nuclear fission is true?**

A ) Atoms gain electrons to form ions
B ) The atom loses all its electrons
C ) Several atoms combine to form a molecule
D ) A nucleus splits into smaller nuclei
E ) Materials must be in magnetic field

**18** **Fissionable uranium-233, uranium-235, and plutonium-239 are used in nuclear reactors as**

A ) fuels
B ) moderators
C ) control rods
D ) coolants
E ) shields

**19** **What makes water hard?**

A ) Potassium and calcium
B ) Iron and magnesium
C ) Calcium and sodium
D ) Calcium and magnesium
E ) Iron and calcium

**20** What mass of copper is produced when 8g of copper (II) oxide is reduced?
$2CuO+C \longrightarrow 2Cu+CO$ (Relative atomic masses: Cu=64, O=16, C=12)

A ) 12.8g
B ) 8.0g
C ) 6.4g
D ) 3.2g
E ) 16.0g

A

**21** **In a cold weather the metal handlebar of a bicycle feel colder to the hands than the plastic handgrips. This is because**

A ) The shining metal is a good emitter of heat
B ) The metal is at a lower temperature than the plastic
C ) The plastic material contains more heat energy than the metal
D ) The metal is a better conductor of heat than plastic
E ) The plastic material is a good radiator of heat

**22** **Mutations can be considered as one of the raw materials of evolution because they**

A ) are usually beneficial to the organism in which they appear
B ) are usually related to the environment in which they appear
C ) contribute to new variations in organisms
D ) usually cause species of organisms to become extinct
E ) break through the barrier of the species

**23** **The concept that species have changed over long periods of time is known as**

A ) ecology
B ) organic evolution
C ) spontaneous generation
D ) embryology
E ) geology

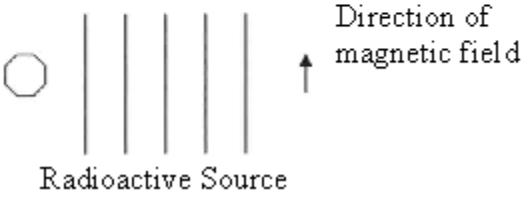
**24** **Which of the following would produce a circular magnetic field**

A ) A solenoid carrying a current
B ) A flat circular coil carrying a current
C ) A horseshoe magnet
D ) A bar magnet
E ) A straight wire carrying a current

**25** **In a restaurant a waiter pulls the table cloth with a very high speed but the cutlery and the dishes remain on the table this is because of:**

A ) Moment
B ) Momentum
C ) Impulse
D ) Inertia
E ) Force

**26** In the following diagram an alpha emitting radioactive source is placed next to a magnetic field in vacuum. What will be the path alpha particles entering the magnetic field




A ) Will move towards the plane of the paper
B ) Will move away from the plane of the paper
C ) Will be moving upwards
D ) Will travel straight forward
E ) Will move downwards

**27** **The bouncing back of the waves upon hitting obstacles is called**

A ) Refraction
B ) Diffraction
C ) Spectrum
D ) Dispersion
E ) Reflection

**28** **When a radioactive source is placed 2 cm away from a G-M tube it shows a count rate of 1237. When a sheet of paper is placed between the source and the G-M tube the count rate does not change. When an aluminium plate of 3 mm is placed between the source and the G-M tube the count rate falls to 698. When the Al plate is replaced with Pb plate count rate falls to 16. The radioactive source emits**

A ) Beta particles and gamma rays
B ) beta particles only
C ) alpha particles only
D ) Alpha and beta particles
E ) Alpha, beta particles and gamma rays

**29** **A paramecium absorbs materials from its environment and circulates these materials throughout it's' cytoplasm. Which life function is described by these activities?**

A ) synthesis
B ) respiration
C ) transport
D ) reproduction
E ) perspiration

**30** **During a race, the body temperature of a runner increases. The runner responds by perspiring, which lowers body temperature. This process is an example of**

A ) maintenance of homeostasis
B ) an antigen-antibody reaction
C ) environmental factors affecting phenotype
D ) an acquired characteristic
E ) an acquired reflex

**31** **What would most likely result if mitosis was not accompanied by cytoplasmic division?**

A ) one cell without a nucleus
B ) one cell with two identical nuclei
C ) two cells, each with one nucleus
D ) two cells, each without a nucleus
E ) one cell with two different nuclei

**32** Given the reaction:
$ZnO + X + heat \rightarrow Zn + XO$
which element, represented by X, is used industrially to reduce the ZnO to Zn?

A ) Cu
B ) Pb
C ) SN
D ) C
E ) O

**33** **During formation of a covalent bond the atoms**

A ) Share protons
B ) Gain or loose proton
C ) Share electrons
D ) Gain or lose electron
E ) Gain electrons and lose protons

**34** **The separation of white light into its component colours is**

A ) Dispersion
B ) Diffraction
C ) Refraction
D ) Spectrum
E ) Reflection

**35** **When water waves in a shallow region move to a deeper region which of the following occurs?**

A ) The wavelength decreases, the speed increases
B ) The wavelength and speed remains same
C ) The wavelength increases, the speed decreases
D ) The wavelength decreases, the speed decreases
E ) The wavelength increases, the speed increases

**36** **A balloon filled with helium gas on the ground is let free to rise. The temperature on the ground is 37 degrees Celsius and atmospheric pressure is 1ATM. After a while balloon reaches to a height where the temperature is 17 degrees Celsius and the atmospheric pressure is 0.9ATM. The balloon's volume will:**

A ) be doubled
B ) be less than doubled
C ) be smaller than the original volume
D ) not change
E ) Information is not enough to tell

**37** **The digestion of maltose involves**

A ) addition of carbon dioxide molecules to maltose
B ) addition of water molecules to maltose
C ) removal of carbon dioxide molecules from maltose
D ) the removal of water molecules from maltose
E ) addition of oxygen molecules to maltose

**38** **Two nucleotide sequences found in two different species are almost exactly the same. This suggests that these species are**

A ) evolving into the same species
B ) have the same number of mutations
C ) may have similar evolutionary histories
D ) contain identical DNA
E ) have identical eggs

**39** **Which structure includes all the others**

A ) Genes
B ) Chromosomes
C ) Nucleoli
D ) Nucleus
E ) Ribosomes

**40** **Which statement correctly describes a redox reaction?**

A ) Redox reactions primarily involve the transfer of protons between two chemical species
B ) The oxidation half-reaction occurs before the reduction half reaction
C ) The oxidation half-reaction occurs spontaneously but the reduction half-reaction does not
D ) The oxidation half-reaction occurs after the reduction half-reaction
E ) Redox reactions primarily involve the transfer of electrons between two chemical species

**41** **Which colour light is least important to a green plant during photosynthetic activities?**

A ) orange
B ) blue
C ) green
D ) yellow
E ) violet

**42** **The number of cycles in unit time is**

A ) Amplitude
B ) Frequency
C ) Wavelength
D ) Period
E ) Power

**43** **Which solution will change red litmus to blue?**

A ) Aquas Chloric acid
B ) Sodium hydroxide
C ) Alcohol
D ) Aquas Sodium Chloride
E ) Benzene

**44** **In fruit flies with the curly wing mutation, the wings will be straight if the flies are kept at 16 degrees Celsius. The most probable explanation for this is**

A ) fruit flies with curly wings cannot survive at high temperatures
B ) that height temperatures increases the rate of mutations
C ) wing length in these fruit flies is directly proportional to temperature
D ) the environment influences wing phenotype in these fruit flies
E ) none of the above

**A**

**45** **The arrangement of electromagnetic waves either in increasing or decreasing order of their frequencies is called**

A ) Diffraction
B ) Spectrum
C ) Refraction
D ) Dispersion
E ) Reflection

**46** **An electric kettle operates on 200V and is filled with 1.5kg water originally at 20 degrees. When the kettle is put on it boils the water in 5 minutes. Specific heat capacity of water will be taken as 4000J/kgK**
**Current passing flowing during heating is**

A ) 10A
B ) 12A
C ) 48A
D ) 16A
E ) 8A

**A**

**47**

The diagram below shows a worker trying to pull a cart which is originally at rest with a force of nN. The angle between the rope and the horizontal is A degrees (A is not zero). The frictional force between the tyres and the cart is also nN.

A ) The cart will move forward at the start and then stop
B ) The cart will remain at rest
C ) The cart will accelerate forward
D ) The cart will travel forward with a constant velocity
E ) The cart will move backwards

**48** **A ball is thrown vertically upwards with an initial velocity of 40m/s. ($g=10m/s^2$)**
**What is the time of flight?**

A ) 5s
B ) 6s
C ) 8s
D ) 7s
E ) 12s

**49** **A paratrooper jumped from a plane gains speed at the beginning but later falls with a constant velocity. This velocity is called**

A ) Positive velocity
B ) Instantaneous velocity
C ) Average velocity
D ) Negative velocity
E ) Terminal velocity

**50** **An electric kettle operates on 200V and is filled with 1.5kg water originally at 20 degrees. When the kettle is put on it boils the water in 5 minutes. Specific heat capacity of water will be taken as 4000J/kgK**
**If the voltage is reduced to half which of the following will not change**

A ) Resistance and mass
B ) Heating time and resistance
C ) Power and current
D ) Current and mass
E ) Heating time and current

**51** **If the sum of all the forces acting on a moving truck is zero, the truck will**

A ) will accelerate first then decelerate
B ) will continue to move with constant speed
C ) will decelerate
D ) accelerate forward
E ) will decelerate first then accelerate

**52** **In a green house heating occurs because**

A ) Low frequency infra red light can pass through glass but high frequency infra red light can not emerge from the green house
B ) High frequency infra red light can pass through glass but low frequency infra red light can not emerge from the green house
C ) Low frequency ultra violet light can pass through glass but high frequency ultra violet light can not emerge from the green house
D ) High frequency ultra violet light from the sun can pass through glass but low frequency ultra violet light can not emerge from the green house
E ) High frequency ultra violet light changes to infra red light upon entering the green house

**53** **Which gas is monatomic at STP?**

A ) chlorine
B ) fluorine
C ) neon
D ) nitrogen
E ) oxygen

**54** **Blast furnaces are used to extract iron. The purpose of blowing hot air into the furnace is to**

A ) React with iron
B ) React with the coke
C ) Remove the excess coke
D ) React with the limestone
E ) Remove the excess gases

**A**

**55** **The change of speed of waves upon passing from one medium to another is**

A ) Spectrum
B ) Refraction
C ) Dispersion
D ) Diffraction
E ) Reflection

**56** **A molecule of DNA is a polymer composed of**

A ) fatty acids
B ) glucose
C ) nucleotides
D ) amino acids
E ) nitric acid

**TEST BİTTİ**
**CEVAPLARINIZI KONTROL EDİNİZ**