

GRADE 8 SCIENCE FINAL

Turn in your textbook today, or, bring a cheque to cover the replacement cost.
You may do your rough work in on the extra paper provided, then mark the answer you are choosing for each question on the SCANTRON Answer Card provided.

All test items in this exam have been covered on previous unit tests and quizzes.
You should have little difficulty if you have completed a thorough review of your year's work.

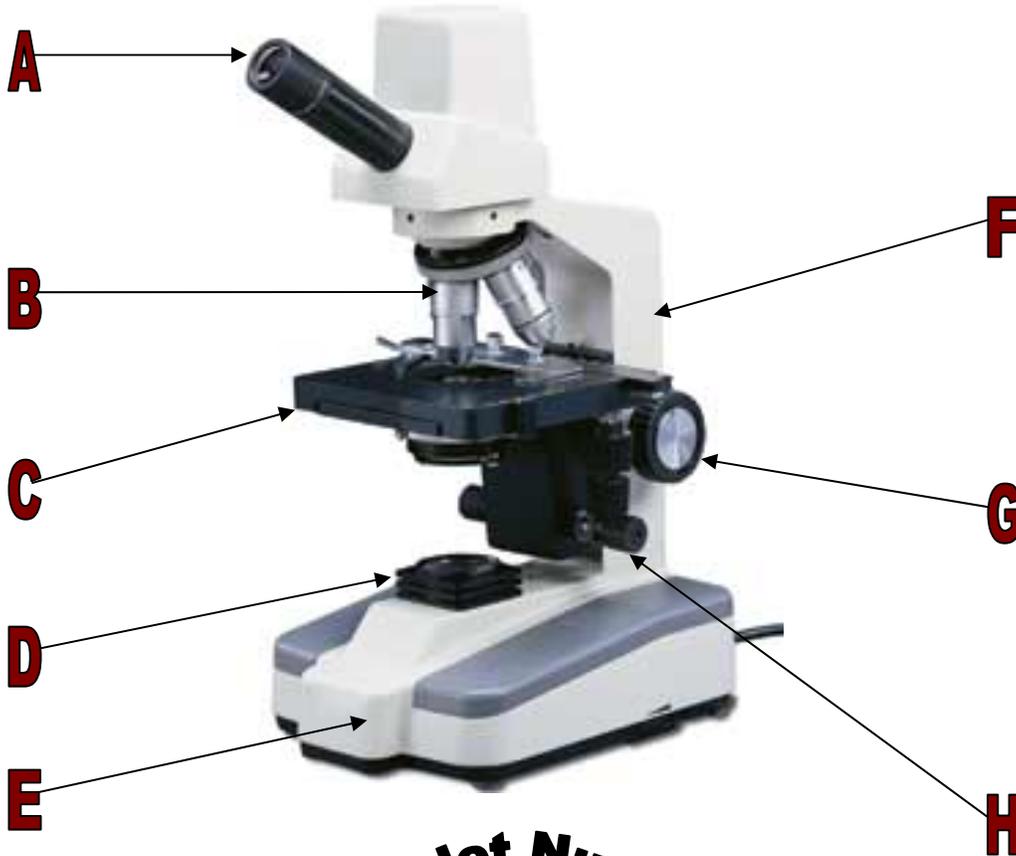
You must stay for **90** minutes to complete the exam.

If you require more time to complete the exam, **30** additional minutes will be allowed.
If you are unsure of a question, raise your hand and wait for the teacher to respond to you.

Bonus Question (*Attempt this only after you have completed all of the other questions*)

You must get all the labels correct in order to earn the bonus mark
Put your answers on the separate answer sheet with the Numerical Response questions

Label the parts of the **Compound Microscope**



Booklet Number
○

MIX and FLOW of MATTER



1. A hazard symbol that is a red octagonal shape means
 - a. compressed gas
 - b. warning
 - c. **danger**
 - d. caution
2. Which of the following is considered a *poor* safety practice?
 - a. Washing your hands thoroughly with soap and water at the end of each lab period
 - b. Wearing gloves when working with hazardous chemicals
 - c. **Removing your safety goggles when recording the data in your lab report**
 - d. Asking your teacher for advice if you are still unsure of the procedure after carefully reading the directions

3. Use the **WHMIS** symbols to answer the following question.

Symbol 1



Symbol 2



Symbol 3



Symbol 4



Symbol 5



Symbol 6



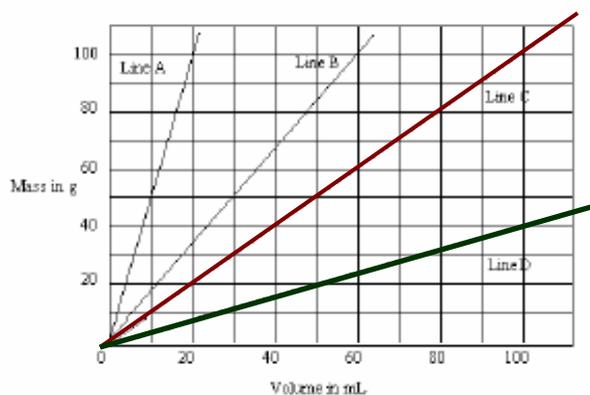
Symbol 4 above indicates ...

- a. bio-hazardous infectious material
 - b. oxidizing material
 - c. **immediate, seriously toxic effects**
 - d. flammable, combustible material
4. Which of the following is not a *homogeneous* mixture?
 - a. Milk
 - b. Soda pop
 - c. **Chocolate chip cookie**
 - d. Stainless steel
 5. You are making a drink using drink crystals. Which statement below is correct?
 - a. **The crystals are the solute and the water is the solvent.**
 - b. The water is the solute, and the crystals are the solvent.
 - c. The crystals are the solution and the water is the solute.
 - d. The water is the solution and the crystals are the solute.
 6. Solubility is the
 - a. maximum amount of solvent dissolved at a given temperature
 - b. **maximum amount of a solute dissolved in a fixed volume of solvent at a given temperature**
 - c. minimum temperature that a solute must be in order to dissolve all of a given solvent
 - d. maximum temperature that a solvent must be in order to dissolve all of a given solute
 7. Particles move the slowest in a
 - a. **cold solid**
 - b. cold gas
 - c. hot solid
 - d. hot gas
 8. You are cleaning your bike and want to clean the bearings. They are covered in grease. The best substance to use to clean the bearings will be
 - a. water
 - b. a solvent that will not dissolve the grease
 - c. **a solvent that will dissolve the grease**
 - d. none of these

9. In a **ramp test**, you are testing the viscosity of **three different substances** (molasses, corn syrup, and pancake syrup). The experiment is to pour the same quantity of each substance down the viscosity ramp. Repeat the experiment at three different angles. You will measure the **time** for the substances to flow down the ramp to determine which is the **most viscous**. In a fair test, you need to change some elements and keep some the same. Identify what is **WRONG** with the above test.
- You should change the temperature of the substances before pouring them down the ramp.
 - You should keep only one type of substance and only one angle.
 - You should have three different ramps set at three different angles.
 - There is nothing wrong.**
10. You are designing an experiment to measure the viscosity of a substance. You think that if you take a marble of known mass and drop it in various substances you will get one of the following results.
- The marble will drop fastest in the most viscous liquid.
 - The marble will not fall in any of the liquids.
 - The marble will drop at the same speed in all liquids.
 - The marble will drop the fastest in the least viscous liquid.**
11. What is the relationship between mass and volume called?
- buoyancy
 - density**
 - viscosity
 - solubility

Use this table and this graph to answer the next question.

Substance	Density (g/cm ³)
wood	0.66
aluminum	2.70
iron	7.87
gold	19.32



12. If Line C represents the density of distilled water, then **Line D** could represent the density of
- wood
 - aluminum
 - iron
 - gold
13. Find the *density* of a sample of uranium with a 5.0-g mass and 0.27-mL volume. $d = m / V$
- 18.5 mL/g
 - 0.054 g/mL
 - 18.5 g/mL**
 - 0.054 mL/g
14. At the beginning of fall, your mechanic might check the antifreeze in the family car's radiator. The *instrument* that he/she uses is called a
- thermometer
 - hygrometer
 - hydrometer**
 - barometer
15. According to the *Particle Model of Matter*, air is a more compressible fluid than a liquid, because ...
- air has more space between the particles**
 - air particles are moving at slower speeds
 - liquids have more space between the particles
 - liquid particles are moving at faster speeds

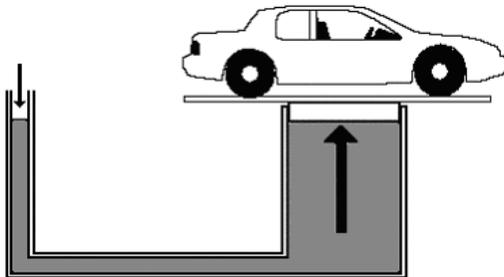
16. A pipeline pig is a special unit operating in a pipeline to
- a. clean the pipeline when it is empty
 - b. monitor the pressure of the gas in the pipeline
 - c. clean the pipeline while being pushed by the gas
 - d. make repairs as it moves through the pipeline

17. A detergent is a substance that can remove dirt from different kinds of fabric. The **cleaning agent** in the detergent attaches itself to the dirt particles. It is called a/an...
- a. detergent
 - b. suspension
 - c. surfactant
 - d. enzyme

18. Syncrude originally used conveyor belts to move the oil sand from the mine to the processing plant, but it proved to be very expensive to continue operating in this way. They now use ...
- a. a slurry pipeline
 - b. transport trucks
 - c. very large bulldozers
 - d. monster dumptrucks

19. When comparing **concentrations** of different solutions, it is necessary to compare the concentrations in the same volume. Which of the following solutions would have the **highest** concentration?
- a. 5.6g per 10ml
 - b. 12g per 25ml
 - c. 25g per 50ml
 - d. 50%

Use this illustration for the next question



20. In a **hydraulic lift** model built by an apprentice (like the real one shown in the illustration above), a pedal is used to push down the large piston, while the small piston lifts up a load. The apprentice's model didn't work. What is wrong with it?
- a. The pistons should have the same diameter.
 - b. The load should be on the larger piston.
 - c. Both pistons should be smaller.
 - d. Both pistons should be larger

CELLS and SYSTEMS



21. Which is not a structural adaptation?
- a. A duck's webbed feet for swimming
 - b. A gibbon's long arms for grasping
 - c. A Canada goose flying south for the winter
 - d. A finch's wings enable it to fly

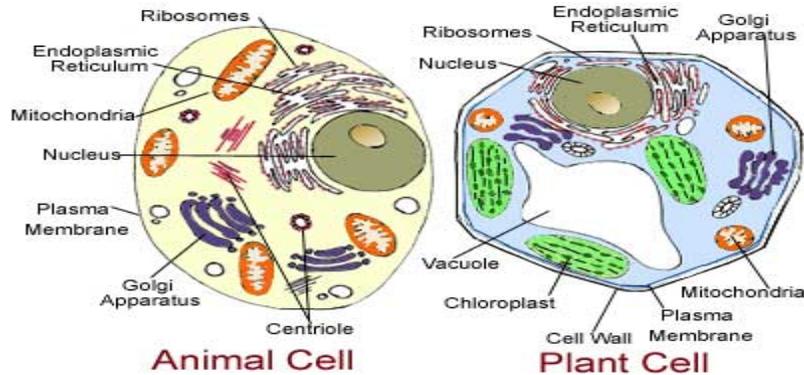
22. Adaptation is a change in the organism that allows it to survive in its environment. There are two types adaptations. **Structural adaptations** enable organisms to change their appearance, whereas, **behavioral adaptations** enable organisms to change their behavior. Which of the following adaptations is behavioral?

- a. birds fly south
- b. cactus has spines
- c. giraffes have long necks
- d. snowshoe hare grows a white coat of fur

23. Darwin's finches have different variations in bill size that account for their feeding pattern. A warbler-like finch long sharp pointed bill would have this **type of bill** because it eats ...

- a. berries on bushes
- b. fruit found in tall trees
- c. insects hiding in the bark of trees
- d. seeds and nuts found on the ground

Use this illustration to help you answer the next 2 questions



24. The powerhouse of the cell (the part where energy is converted into usable form) is called the

- a. mitochondria
- b. nucleus
- c. cytoplasm
- d. chromosome

25. If a cell has chloroplasts, it is a/an ...

- a. real cell
- b. animal cell
- c. plant cell
- d. multi-cellular organism

26. Peristalsis in the alimentary canal is caused by the ...

- a. contraction of muscle layers
- b. action of digestive enzymes
- c. stretching of the mucosa
- d. closing of the epiglottis

27. The largest organ in the human body is the skin, which is also called the ***Integumentary System***. It has two functions, which are ...
- a. waste removal and transportation of nutrients
 - b. protection and sensory awareness**
 - c. movement and protection
 - d. waste removal and sensory awareness
28. Organs work together to make a system or network that performs a specialized function. Plants have only two main systems. They are the ...
- a. stems and the leaves
 - b. roots and the leaves
 - c. shoot and the roots**
 - d. leaves and the shoot
29. Which statement is correctly associated with the circulatory system?
- a. Arteries carry blood to the heart.**
 - b. The right side pumps blood directly to the lungs.
 - c. The main function of red blood cells is to carry carbon dioxide to the cells.
 - d. Capillaries function to remove gases and nutrients from the lungs.
30. Oxygen-rich air is drawn into the lungs through tube-like passageways called bronchi. The bronchi are lined with tough connective tissue in order to ...
- a. keep the walls from collapsing**
 - b. expand the surface area
 - c. extend the life of the bronchi
 - d. allow the air to pass through easily
31. Capillaries have two adaptations for exchanging gases and nutrients: they are made of specialized epithelial tissue that is only one cell thick and they ...
- a. are reinforced with a double membrane
 - b. can reverse the flow of gases when they need to
 - c. are very narrow, so the blood cells have to pass through in single file**
 - d. can collapse on bacteria, preventing it from getting to the heart
32. The liver is a very important organ in the excretory system. The function of this organ is to convert a highly toxic substance into a less harmful substance. The highly toxic substance that is converted into urea in the excretory system is ...
- a. hydrochloric acid
 - b. ammonia**
 - c. sodium chloride
 - d. gastric juice
33. A neuron receives messages from small branches of the nerve cell called ...
- a. axons
 - b. interneurons
 - c. somatic nerve
 - d. dendrites**
34. In the late 1700's, Edward Jenner, an English country doctor, developed the first vaccine. The vaccine he developed made people immune to smallpox. This vaccine was ...
- a. insulin
 - b. rabies
 - c. cowpox**
 - d. e-coli
35. Louis Pasteur was originally a chemist. His first great discovery was finding out what made beer and wine spoil. He discovered micro-organisms, floating in spoiled batches of beer and wine. The micro-organisms were ...
- a. spoiled grapes
 - b. alcohol insects
 - c. anthrax
 - d. yeast**

36. The respiratory system can also malfunction due to poor lifestyle choices. When the cilia (which remove airborne particles when they beat continuously) are clogged by mucus they cannot perform their function properly and over time, can become inflamed. This condition (which can be treated) is called ...

- a. bronchitis
- b. ciliaitis
- c. emphasya
- d. lung cancer

37. This disorder of the respiratory system is common in children in Canada. There are half a million children who suffer from it. It can be triggered by many different environmental factors. The disorder is ...

- a. colitis
- b. asthma
- c. bronchitis
- d. emphysema

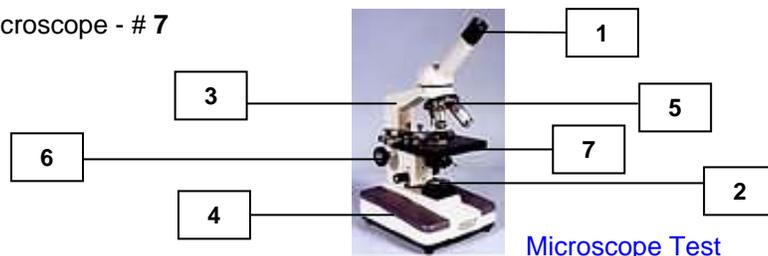
38. The reason why fries and chocolate taste so good is because they contain a lot of fats. These fats are converted into a lipid, called cholesterol, which enters your arteries and can clog the flow of blood. This disorder, or condition is referred to as ...

- a. high blood pressure
- b. arteriosclerosis
- c. hypertension
- d. peptic ulcer

39. The digestive system can also malfunction, causing severe repercussions for an individual and even death. These disorders are caused by poor lifestyle habits or disease. One such disorder may lead to colon cancer. It is caused by ...

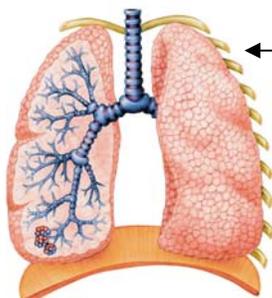
- a. low fiber diet
- b. high fiber diet
- c. over exertion
- d. excessive use of aspirin

40. This part of the microscope - # 7 is called the ...



[Microscope Test](#)

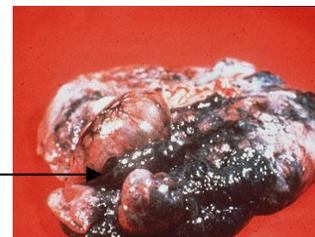
- a. base
- b. stage
- c. eyepiece
- d. diaphragm



These are **healthy** Lungs

<http://www.sk.lung.ca/content.cfm/kidsmoking>

These are **unhealthy** Lungs



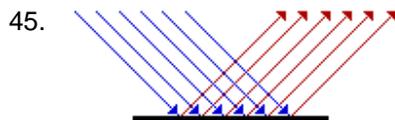
LIGHT and OPTICAL SYSTEMS



41. The difference between a convex lens and a concave lens is:
- a. **Convex lenses are thicker in the middle.**
 - b. Concave lenses are thicker in the middle.
 - c. Convex lenses spread out light rays.
 - d. Concave lenses concentrate the light.
42. **Pythagoras'** thoughts about light were proven wrong because it was impossible to see ...
- a. the light beams
 - b. dark objects
 - c. **in the dark**
 - d. shiny objects

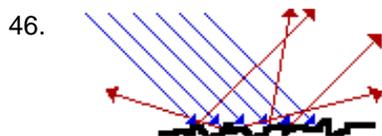
43. **Microbiology** - the study of micro-organisms, began with the invention of these ...
- a. binoculars
 - b. telescopes
 - c. mirrors
 - d. **microscopes**

44. Two characteristics that make telescopes useful for observing the skies are their ability to
- a. separate and magnify light
 - b. **magnify and collect light**
 - c. collect and separate light
 - d. magnify and clarify light



This illustration demonstrates how light travels and is referred to as a ...

- a. light sketch
- b. light diagram
- c. ray sketch
- d. **ray diagram**

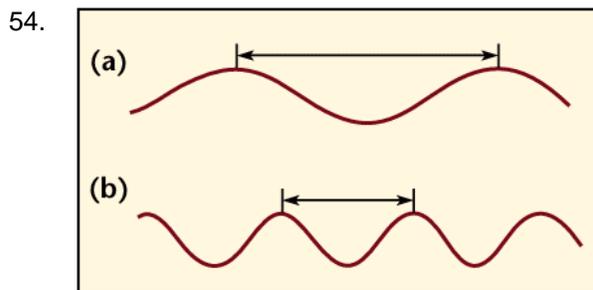


This illustration demonstrates a type of reflection referred to as ...

- a. regular
- b. crooked
- c. **diffuse**
- d. spectacular

47. When you attempt to focus an image on a screen, using a concave mirror, but cannot, yet, you can see an image when are looking into the same concave mirror, the image is called a ...
- a. **virtual image**
 - b. concave image
 - c. convex distortion
 - d. image distortion
48. **Digital** information is stored in a computer by converting the information into ...
- a. pictures
 - b. **numbers**
 - c. letters
 - d. symbols

49. If an object is placed between the focal point in a concave mirror and the mirror itself, the image will appear ...
- Upright and smaller
 - Upright and larger**
 - Inverted and smaller
 - Inverted and larger
50. Which of the following statements about lenses is correct?
- A concave lens is thinner in the centre and focuses light.
 - A convex lens is thicker in the centre and focuses light.**
 - A convex lens is thinner in the centre and disperses light.
 - A concave lens is thicker in the centre and disperses light.
51. Refraction is the bending of light when it travels from one medium to another. What direction does the light bend when it travels from a medium of greater density to one of lesser density?
- along the normal
 - along the perpendicular
 - towards the normal
 - away from the normal**
52. Mirages cause an illusion of a watery surface. This illusion is actually ...
- water drops reflecting the light
 - water drops refracting the light
 - the sky refracted by warm air**
 - the sky reflected by warm air
53. **Nocturnal** animals, such as cats and owls have very large pupils to allow them to collect as much light as possible. The purpose of the thin layer inside their eyes, called the **tapetum lucidum**, is to act as this inside their eye ...
- a magnifier
 - a mirror**
 - a lens
 - a filter



The arrows a) and b) -identified in the illustration- indicate the ...

- crest
 - rest position
 - amplitude
 - wavelength**
55. As frequency increases, this will happen to the wavelength ...
- they get longer and less frequent
 - they get longer and more frequent
 - they get shorter and less frequent
 - they get shorter and more frequent**
56. The best explanation for shadows is ...
- black light is projected onto an object
 - light bends only part way around solid objects
 - when light hits an opaque object, it can't go further**
 - when light strikes an object, the object is reflected

57. **Radar** is an acronym for *radio detection and ranging*. These devices send out waves, which bounce off objects and return (obeying the law of reflection). Older radar devices used radio waves, whereas modern radar devices use ...
- a. **microwaves**
 - b. ultraviolet waves
 - c. infrared waves
 - d. gamma rays
58. Incandescent light bulbs produce 95% heat and only 5% visible light. Fluorescent light bulbs are much more efficient, because they produce 80% heat and ...
- a. 2 times as much light
 - b. 3 times as much light
 - c. **4 times as much light**
 - d. 5 times as much light
59. The retina in the eye has a thin layer of cells that are light sensitive. These cells are called **photoreceptors**. There are two kinds of photoreceptor cells. The type that detect color are the ...
- a. rods
 - b. **cones**
 - c. pupil
 - d. iris
60. CCD is a grid similar to a piece of graph paper. As light falls on a square of the grid, it creates a small amount of electricity in that square. This is then converted into digital information. **CCD** stands for ...
- a. Computer Charged Design
 - b. Capture Charge Device
 - c. Compact Charge Design
 - d. **Charge Coupled Device**



MECHANICAL SYSTEMS



61. A simple machine is called a simple machine because it is
- a. easy to operate
 - b. complex to operate
 - c. made of one basic machine
 - d. a machine that does simple work
62. Mechanical systems for transporting water were developed by Roman engineers thousands of years ago. These systems supplied water to cities that were many kilometers from the water supply. The systems were known as ...
- a. sakias
 - b. aqueducts
 - c. mill wheels
 - d. Persian wheels
63. A simple machine that converts rotational motion to linear motion is called ...
- a. Class 1 lever
 - b. Inclined plane
 - c. Wedge
 - d. Screw
64. The *penny farthing* was an early bicycle design that used only these types of simple machines ...
- a. Incline plane & Screw
 - b. Levers and pulleys
 - c. Levers & wheel and axle
 - d. Pulleys & wheel and axle



65. Linkages and transmissions are parts of a system that perform a specific function. The function they perform is to ...

- a. increase torque
- b. increase speed
- c. transfer weight
- d. transfer force

66. A disadvantage of a wedge is
- a. you must exert a force over a greater distance than the load
 - b. you must move the load over a greater distance
 - c. it can only be used in one direction
 - d. you must turn a greater distance

67. A gear train is a
- a. series of different-sized gears working together
 - b. special gear designed for use in trains
 - c. driving gear
 - d. driven gear

68. Gears are used in combination, with the teeth of the gears interlocking, so when one moves the other moves as well. Effort can be applied to the first gear (24 teeth), with the resulting effect on the second gear (12 teeth) being a ...

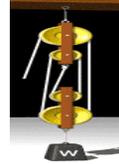
- a. speed advantage of 0.5
- b. speed advantage of 2
- c. force advantage of 2
- d. force advantage of 0.5

69. The mechanical advantage of a device refers to
- a. the amount of energy that is used in the device
 - b. the amount of energy that is saved in the device
 - c. the force used in the device
 - d. the multiplication of the force in the device

70. A pulley system can provide a mechanical advantage

Use this pulley illustration

Identify what the mechanical advantage of this pulley system is.



71. You have a pulley system, which has an input force of 45 N and an output force of 245 N. What is the mechanical advantage?

- a. 200
- b. 5.4 N^2
- c. 5.4
- d. 200 N^2

72. If a machine is only 30% efficient, it means that

- a. 30% of energy is lost
- b. 70% of energy is lost
- c. 30% of energy is converted into unusable energy
- d. 70% of energy is converted into unusable energy

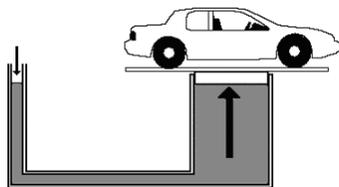
73. How much **work** would a student do if he picked up an 80N box up off the floor and carried it to a height of 1.0 m then carried it 20 m and placed it on a shelf 1.8 m above the floor?

- a. 80 J
- b. 144 J
- c. 224 J
- d. 1600 J

74. Speed Ratio is calculated by dividing the ...

- a. Output distance by the input distance
- b. Input distance by the output distance
- c. Output force by the input distance
- d. Input force by the output distance

- 75.



Mechanical Advantage of this Hydraulic lift is 10

What is the area of the **output piston** if the diameter of the **input piston** is 1.4 m?

- a. 0.14 m^2
- b. 14.0 m^2
- c. 1.4 m^2
- d. 410 m^2

76. Mechanical devices are evaluated so that the consumer who is ultimately going to use it can make a better choice. Another important reason to carefully evaluate a mechanical device is to ...

- a. determine how it can be improved
- b. lower its cost
- c. make it more fashionable
- d. find its esthetic value

77.



The **church key** was the first practical design for opening a can. It was a simple machine that multiplied the force needed to open the can. The simple machine it was designed after was the ...

- a. wedge
- b. 3rd class lever
- c. 2nd class lever
- d. 1st class lever

78.



CSA is a non-government association that tests and approves a wide range of products to ensure they are safe for use by the consumer. CSA stands for ...

- a. Consumer Standards Agency
- b. Consumer Safety Association
- c. Canadian Standards Agency
- d. Canadian Standards Association

79. Sometimes a new device is designed when someone who thinks there can be an easier way to do something makes an observation. An inventor observed a driver manually cleaning snow and ice off the windshield of a streetcar in freezing cold weather, this observation prompted the invention of this

- a. windshield heater
- b. windshield washer
- c. windshield wiper
- d. windshield defroster

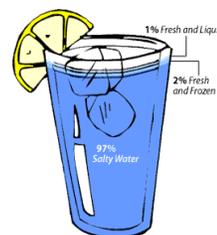
80.



Improvements in robot technology came as a result of industry trying to ...

- a. Improve the assembly of consumer products
- b. Improve the margin of safety in all products
- c. Reducing the workload of the workers
- d. Replace workers because of high wages





FRESH and SALTWATER SYSTEMS

81.

	J	F	M	A	M	J	J	A	S	O	N	D
<u>Precipitation (mm)</u>	146.9	119.1	122.6	124.4	110.5	98.4	96.8	109.6	94.9	128.9	154.4	167
<u>Daily Mean (°C)</u>	-5.8	-6.0	-1.7	3.6	9.4	14.7	18.3	18.1	13.8	8.5	3.4	-3.0

The Precipitation and Temperature information in the table above identifies a Canadian city. From the data you might be able to infer that this data represents the City of

- A. Calgary B. Winnipeg **C. Halifax** D. Quebec City
82. Your inference in the question above is based on the fact that ...
- There are extreme periods of precipitation indicating it is located in the Prairies
 - There are few extremes in temperature indicating it is by a large body of water**
 - Its highest temperature indicates that it might be near the Great Lakes
 - Its highest temperature indicates that the **C of RED** keeps it hot during the playoffs
83. A reservoir is
- an underground lake
 - a small natural lake
 - an artificial lake**
 - a river flowing out of a dam
84. The term "water quality" is associated with drinking water. All the following are **abiotic** characteristics associated with water quality except
- organisms**
 - organic matter
 - minerals
 - chemicals
85. Which of the following statements would be a result of hard water?
- Soap bubbles do not form easily and calcium scale builds up in pipes.**
 - Soap bubbles do not form easily and scale is absent from pipes.
 - Soap bubbles form easily and scale is absent from pipes.
 - Soap bubbles do not form easily and sodium scale builds up in pipes.
86. Use the following information to answer the question.
- Carbon dioxide dissolved in water is acidic. Bromothymol blue is an acid/base indicator. A contaminated water sample is placed into a container containing some bromothymol blue. Another sample of pure water is placed into a similar container containing bromothymol blue. Both containers were sealed and allowed to remain at room temperature, undisturbed, and in a darkened container for 24 h.*
- What would be a valid prediction for this experiment?
- Living organisms will use up the oxygen causing the water to turn blue.
 - Living organisms will give off carbon dioxide causing the water to turn blue.
 - Living organisms will use up the oxygen causing the water to turn yellow.
 - Living organisms will give off carbon dioxide causing the water to turn yellow.**
87. Distillation of water involves which of the following changes?
- boiling and freezing
 - boiling and condensing**
 - condensing and freezing
 - sublimation and condensing

Grade 8 Final Achievement Exam
Do not write in this test booklet

88. Use the following information to answer the next question.

*Students from the local school went to a lake near their community to collect aquatic plants and animals for their science room aquarium. The lake was located in an **environmental protection area**.*

Some of the students noticed signs posted along the beach, which restricted power-boat speed. The main purpose of these signs was to

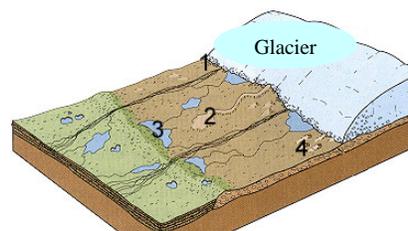
- a. prevent injury to swimmers
- b. reduce noise pollution
- c. prevent shore erosion
- d. reduce lake bottom destruction

89. 5% of human use of water is domestic. Clean water is purified and piped into homes in ...

- a. developing countries
- b. developed countries
- c. 3rd world countries
- d. undeveloped countries

90. **Glaciers** gouge huge areas of the land and then reshape the land by the materials they collect and deposit.

One of these features resulted from a *large block of glacial ice that broke off from the glacier and was left behind* when the **glacier retreated**.



It is called a ...

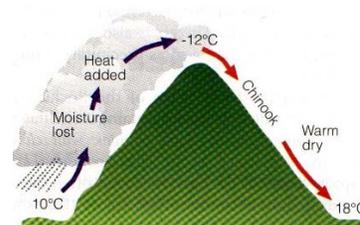
- a. reservoir
- b. moraine
- c. kettle lake
- d. drumlin

91. Shallow areas adjacent to the continental lithosphere and areas where molten rock pushes up causing

Continental Drift, respectively, are called

- a. oceanic ridges and oceanic trenches
- b. continental shelves and oceanic trenches
- c. sea mounts and oceanic ridges
- d. continental shelves and oceanic ridges

92. The reason that the eastern side of the Rockies (Lethbridge and Calgary) receives a **Chinook** (warm dry wind) is because it is located in a ...



- a. updraft
- b. downdraft
- c. rain shadow
- d. snow shelter

93. When studying aquatic organisms, students found that **diversity** is



- a. high in freshwater ecosystems and low in marine ecosystems
- b. the highest in open tropical waters
- c. low in tropical reefs and high in estuaries
- d. high in tropical reefs and low in open ocean waters

Grade 8 Final Achievement Exam

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94. A river's **sediment load** is the amount of ...
 a. organisms it is able to sustain
 b. water-borne materials it can carry
 c. pollution it is able to filter out
 d. erosion it can make as it flows
95. Alberta generates much of its electrical power by using thermo-electric generating plants. These plants burn coal or natural gas and require a great deal of water to condense the steam after it has left the generators. Which of the following statements would correctly describe the effect of this industry on the water quality of the lakes adjacent to them?
 a. Thermal pollution increases.
 b. A decrease in the amount of water in lakes.
 c. The gases they release carry away valuable nutrients.
 d. The nearby lakes become increasingly more basic.

96. Using the estimation method, scientists can predict the size of a species population.

They can use the **quadrant sampling method**.
 An example of this method follows.

24			16			12			
	40						16		
				28					
								70	
	32								
			10						
									32

To find the size of this population you would do the following ...

- a. Find the average of all the numbers and multiply by the number of rows
 b. Find the average of all the numbers and multiply by the total number of squares
 c. Find the average of all the numbers and multiply by the number of squares you sampled
 d. Find the average of all the numbers and divide by the number of squares sampled
97. What percent of water used in the world is used for irrigation?
 a. 91%
 b. 73%
 c. 50%
 d. 10%
98. There are many advantages and disadvantages to the construction of Dams. Canada has most of its major rivers dammed. The following is an advantage of a dam ...
 a. water flow
 b. habitat
 c. sedimentation
 d. employment
99. Science and technology are two ways to solve many of the environmental problems society faces, but another more important way to solve problems is to get ...
 a. lots of money and endless resources
 b. a strong commitment from people to act
 c. regulations imposed to prevent negative effects
 d. laws passed to prevent problems from happening
100. The total amount of dissolved salts in water is referred to as the water's ...
 a. concentration
 b. chlorine solution
 c. salinity
 d. purity

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Name _____ **ANSWER KEY** _____ Class _____

The **Eye** and the **Camera** have a lot in common.

They both have compound **lenses** - which are **converging lens** refracting the light to a focal point on the light sensitive layer to record an image.

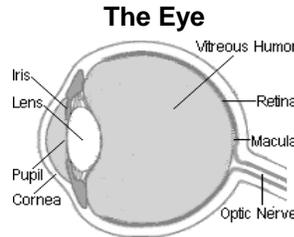
- To focus a camera you move the **lens** backward or forward.
- The eye is focused by the **ciliary muscle**, which stretches the **lens**, changing its shape.

The **retina** is like the **film** in a camera, covering the back of the eye.

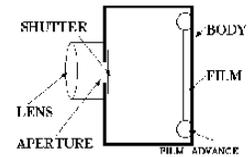
Comparison Chart of the Eye and the Camera

Functioning Action

<i>The opening for light.</i>		aperture
<i>Regulates the amount of light coming in.</i>	iris	shutter
<i>Focuses the refracted light.</i>	lens	
<i>Light-sensitive layer that records images.</i>		film



The Camera



Use these words to identify the part of the eye or camera that has the function identified...

iris lens aperture shutter film

(From the front page of the Exam)

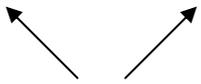
Answer	Parts of the Microscope
<u>F</u>	arm
<u>B</u>	revolving nosepiece (objective lenses)
<u>D</u>	lamp
<u>A</u>	eyepiece
<u>H</u>	fine adjustment knob
<u>E</u>	base
<u>C</u>	stage
<u>G</u>	coarse adjustment knob

Letters to use

A B C D E F G H

Final Exam 2004 Answer Key

Mix and Flow		Cells and Systems		Light and Optics		Mechanical Systems		Fresh/Saltwater Systems	
1	C	21	C	41	A	61	C	81	C
2	C	22	A	42	C	62	B	82	B
3	C	23	C	43	D	63	D	83	C
4	C	24	A	44	B	64	C	84	A
5	A	25	C	45	D	65	D	85	A
6	B	26	A	46	C	66	C	86	D
7	A	27	B	47	A	67	A	87	B
8	C	28	C	48	B	68	B	88	C
9	D	29	A	49	B	69	D	89	B
10	D	30	A	50	B	70	C	90	C
11	B	31	C	51	D	71	C	91	D
12	A	32	B	52	C	72	D	92	C
13	C	33	D	53	B	73	B	93	D
14	C	34	C	54	D	74	B	94	B
15	A	35	D	55	D	75	B	95	A
16	C	36	A	56	C	76	A	96	B
17	C	37	B	57	A	77	D	97	B
18	A	38	B	58	C	78	D	98	D
19	A	39	A	59	B	79	C	99	B
20	B	40	B	60	D	80	D	100	C

Eye and Camera Comparison		 Bonus Questions	Parts of the Microscope	
	aperture		F	
iris	shutter	B		
lens		D		
		A		
		H		
		E		
	film	C		
		G		