INDIAN SCHOOL AL WADI AL KABIR		
CLASS: VIII	DEPARTMENT: SCIENCE	DATE: 24/09/2024
MARKS: 80	**MID-TERM** **ANSWER KEY [SET - 2]**	DURATION: 2½ HOURS

SECTION A (1 X 20 = 20)		
1	c) A and C	1
2	d) Calorific value	1
3	b) It stops the growth of bacteria by reducing the moisture content.	1
4	a) Bacteria in turn fix nitrogen into nitrogenous compounds.	1
5	d) It occurs due to female Aedes mosquitos that act as carrier of dengue virus.	1
6	b) Muscular force and force of gravity, as balanced force no change in its state of motion	1
7	c) The water falls out the farthest through the hole C.	1
8	b) Coke	1
9	c) Slow process of conversion of dead vegetation into coal	1
10	d) They have different densities.	1
11	d) Both the areas do not interfere with the natural environment of the wildlife	1
12	b) These large areas conserve organisms and their habitats.	1
13	a) Deforestation increases Earth's temperature resulting in less rainfall.	1
14	c) Surface 3	1
15	c) Amber	1
16	c) Aluminium foils repel each other	1
17	ii) Both A and R are true but R is not the correct explanation of the assertion.	1
18	i) Both A and R are true and R is the correct explanation of the assertion.	1
19	iv) A is false but R is true	1
20	iii) A is true but R is false.	1
SECTION B (2 X 6 = 12)		

21	a) Substance must be combustible, medium like oxygen should be available, and a substance must attain its ignition temperature. b) Kerosene oil, gets vaporized during burning and forms flames. Coal, on the other hand, does not vaporize and so does not produce a flame.	1 1
22	Chemical agents that kill or stop the growth of disease-causing microorganisms are called antibiotics. It is important to take antibiotics only on the advice of a qualified doctor. One must finish the course prescribed by the doctor to make the drug more effective. Antibiotics must not be taken unnecessarily because they may kill beneficial bacteria. Antibiotics are, however, not effective against cold and flu as they are caused by viruses.	1+1
23	Given: F = 400 N, P = 20 N/m^2, **A = ?** Area = Force/ pressure = 400/20 **= 20 m^2**.	2
24	**Exhaustible resources-** These resources are present in limited quantities in nature, and they can be exhausted by human activities. Examples: Forests, coal, petroleum. minerals, wildlife, natural gas, etc. **Inexhaustible resources-** These resources are present in unlimited quantity in nature and are not likely to be exhausted by human activities. Examples: Sunlight, air, etc.	2
25	a) It is the sourcebook that keeps a record of all the endangered animals and plants. This book is mainly created to identify and protect those species which are on the verge of extinction. b) Project Tiger was launched by the government of India in 1973, to save tigers from extinction due to poaching.	1 1
26	Spring balance is a device used for measuring the force acting on an object. It consists of a coiled spring which gets stretched when a force is applied to it. The stretching of the spring is measured by a pointer moving on a graduated scale. The reading on the scale gives the magnitude of the force.	2

<table>
<tr><th colspan="3">SECTION C (3 X 7 = 21)</th></tr>
<tr><td>27</td><td>a) <u>Rapid combustion-</u> The type of combustion in which a large amount of heat and light are produced in a short time is called rapid combustion. Rapid Combustion requires external heat energy to start. This reaction results in enormous amounts of light and heat energy.
<u>Spontaneous combustion</u>- Type of combustion in which a material suddenly bursts into flames, without the application of any apparent cause. Less amount of heat and light energy is released.
b) Carbon dioxide being heavier than oxygen forms a blanket and cuts off the oxygen supply, it brings down the temperature of the fuel, and it does not harm the electrical equipment, it can be stored at high pressure as a liquid in cylinders and when released from cylinders it expands enormously in volume and cools down.</td><td>2

1</td></tr>
<tr><td>28</td><td>a) Pasteurization is the process in which microorganisms are destroyed by subjecting them first to high temperatures and sudden cooling. Milk is heated at 70^0C temperature for about half a minute and suddenly cooled.
b) A – Amoeba - Protozoa
B - Bread mould - Fungi</td><td>1

[½ × 4] = 2</td></tr>
<tr><td>29</td><td>a) When a vaccine is introduced into a healthy person’s body, specific antibodies are produced against these killed and weakened microbes. These antibodies remain in the body and protect it from future infection. This way, the body develops immunity against that disease.
b) The process of conversion of sugar into alcohol is known as fermentation. Louis Pasteur discovered fermentation in 1857.</td><td>2

1</td></tr>
<tr><td>30</td><td>a) Any 2 differences
<table>
<tr><th>BALANCED FORCE</th><th>UNBALANCED FORCE</th></tr>
<tr><td>Equal forces acting on one object in opposite directions are called balanced forces.</td><td>Unequal forces acting on one object in opposite directions are called unbalanced forces.</td></tr>
<tr><td>The state of motion of the object remains unchanged.</td><td>There is a change in the state of motion of the object.</td></tr>
<tr><td>The net force is zero</td><td>The net force is not zero</td></tr>
</table></td><td>2</td></tr>
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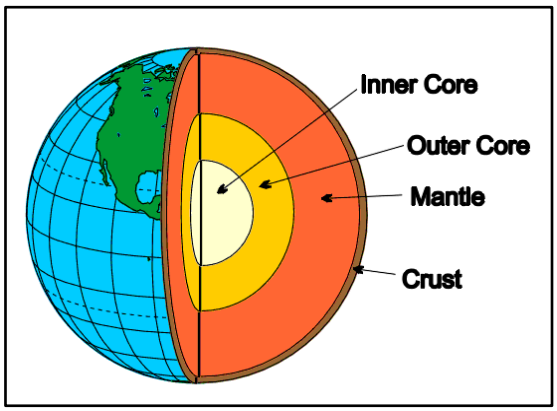
<table>
<tr><td></td><td>b) The pressure of the air inside our body is the same as that of the pressure outside. Therefore, we do not experience its effect.</td><td>1</td></tr>
<tr><td>31</td><td>a) Petroleum was formed from organisms living in the sea. As these organisms died, their bodies settled at the bottom of the sea and were covered with layers of sand and clay. Over millions of years, the absence of air, high temperature and high pressure transformed the dead organisms into petroleum and natural gas.
b) The process of separating crude oil into usable components.</td><td>2

1</td></tr>
<tr><td>32</td><td>a) This act is aimed at preservation and conservation of natural forests and meeting the basic needs of the people living in or near the forests.
b)
<table><tr><th>ENDANGERED SPECIES</th><th>EXTINCT SPECIES</th></tr><tr><td>1. Endangered species are those which are facing the danger of extinction.</td><td>1. Extinct Species are those that no longer exist on Earth.</td></tr><tr><td>2. Example: desert cat, tiger, snow leopard etc.</td><td>2. Example: dinosaur, dodo, cave lion etc.</td></tr></table></td><td>1

2</td></tr>
<tr><td>33</td><td>a) The frictional force exerted by fluids is called drag. The fluid friction or drag can be reduced by giving special shape called streamlined shape to the objects which move through fluids like water or air.
b) It minimizes the area of contact and reduces friction. It also converts sliding friction to rolling friction.</td><td>2

1</td></tr>
<tr><td colspan="3">SECTION D (5 X 3 = 15)</td></tr>
</table>

34	**a)** It should have a high calorific value, Moderate ignition temperature, Moderate rate of combustion, Cheap and easily available, Safe to handle, store, and easy to transport, and Should not cause pollution on burning. **[Any 2]** **b)** When the paper cup is heated containing water, water absorbs the heat coming from the burning source and thus prevents the paper from reaching its ignition point. Hence it does not burn. **c)** Amount of fuel burnt = 40 kg Amount of heat produced = 1,60,000 kJ The calorific value of the fuel = Heat produced /Amount of fuel = 1,60,000 / 40 **<u>= 4,000 kJ/kg</u>** ∴ The calorific value of the fuel is **<u>4,000 kJ/kg</u>**.	1 2 2
35	**a)** A force may make an object move from rest, may change the speed of an object, if it is moving, may change the direction of motion of an object may bring about a change in the shape of an object may cause some or all of these effects. **b)** It is difficult, because of differences in internal and external air pressure. There is less air pressure inside than outside, so outside air pressure pushes the surface of the rubber sucker towards the wall, making it difficult to pull. **c)** When two or more forces act in the same direction, the net force or the resultant force is the sum of the two forces i.e., Net force = sum of individual forces = 200 N + 300 N **<u>= 500 N</u>**	1 2 2

36	**a)** Diagram  **b)** Tremors or vibrations caused by earthquakes that travel in the form of waves within the earth or along the earth's surface, are called seismic waves. A seismograph is an instrument that records these waves. **c)** i) When we take off woollen sweaters, it rubs against our shirt. The rubbing together of the sweater and shirt produces opposite electric charges on them. The discharge of these electric charges produces a crackling sound. ii) Copper is a conductor, as soon as it is charged by rubbing with another material, the electric charge produced on its surface flows through our hand and body into the earth and remains uncharged.	2 1 1 + 1
SECTION E (4 X 3 = 12)		
37	a) Petrochemicals are the useful substances obtained from petroleum and natural gas. Uses- manufacturing of detergents, fibres, polythene, fertilisers (urea) b) Tips given by PCRA to save petrol while driving a vehicle are – drive at a constant and moderate speed as far as possible, switch off the engine at traffic lights or at a place where you have to wait, ensure correct tyre pressure, and ensure regular maintenance of the vehicle. c) CNG is considered to be a better fuel because it burns with a smokeless flame and causes no air pollution. It also does not produce any poisonous gases on burning	1 + 1 1 1

38	**a)** Friction can never be eliminated but it can be reduced. No surface is perfectly smooth. Some irregularities are always there on surfaces.	1
	b) The force of friction between the ground and feet decreases when there is soapy water spilt on the floor. Hence, it becomes difficult to walk on the soapy floor.	1
	c) Friction comes into play when irregularities present in the surfaces of two objects in contact get interlocked with each other. In sliding, the time given for interlocking is very small. Hence, interlocking is not strong. Therefore, less force is required to overcome this interlocking. Because of this reason, sliding friction is less than static friction.	2
39	**a)** A lightning conductor is a metallic rod, taller than the building, installed in the walls of the building during its construction. One end of the rod is kept out in the air and the other is buried deep in the ground. If the lightning strikes a building, it will first hit the top of the lightning conductor rather than the building. The lightning conductor is made of a metallic rod so it provides an easy route for the transfer of electric charges to the ground. The electric discharge occurs through the conductor without harming the building.	2
	b) The process of transfering of charge from a charged object to the earth is called earthing.	1
	c) Open vehicles, like motorbikes, tractors, construction machinery, and open cars are not safe. Open fields, tall trees, shelters in parks, and elevated places do not protect us from lightning strikes. Carrying an umbrella is not a good idea at all during thunderstorms. If in a forest, take shelter under shorter trees. If no shelter is available and you are in an open field, stay far away from all trees. Stay away from poles or other metal objects. Do not lie on the ground. Instead, squat low on the ground. **[Any 2]**	½ + ½