

# MT

2018 \_\_\_\_ 1100

MT - SCIENCE & TECHNOLOGY - II (72) - SEMI PRELIM - I : PAPER - 3

**Time : 2 Hours**

**(Model Answer Paper)**

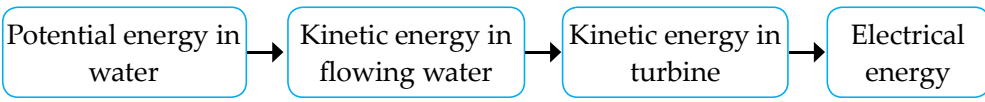
**Max. Marks : 40**

<b>A.1.</b>	<b>(A) Fill in the blanks :</b>											
(1)	Chemically vinegar is 4% <b>acetic acid</b> .	<b>1</b>										
(2)	Government of India has encouraged the <b>pisciculture</b> for improving the productivity by launching NKM - 16.	<b>1</b>										
(3)	The act <b>IT ACT-2000</b> is to curb the cyber crimes.	<b>1</b>										
<b>A.1.</b>	<b>(B) Match the columns:</b>	<b>2</b>										
	<table border="1"><thead><tr><th>Column 'A'</th><th>Column 'B'</th></tr></thead><tbody><tr><td>(1) Interferon</td><td>(c) Viral Infection</td></tr><tr><td>(2) Factor VIII</td><td>(e) Hemophilia</td></tr><tr><td>(3) Somatostatin</td><td>(b) Dwarfness</td></tr><tr><td>(4) Interleukin</td><td>(d) Cancer</td></tr></tbody></table>	Column 'A'	Column 'B'	(1) Interferon	(c) Viral Infection	(2) Factor VIII	(e) Hemophilia	(3) Somatostatin	(b) Dwarfness	(4) Interleukin	(d) Cancer	
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<b>A.1.</b>	<b>(C) Choose the correct alternative and rewrite the statement :</b>											
(1)	Milk is <b>pasteurized</b> at the beginning to destroy unwanted microbes.	<b>1</b>										
(2)	Human insulin gene now is been inserted into the genome of <b>bacteria</b> .	<b>1</b>										
(3)	<b>Rhizobium</b> bacteria present in root nodules of leguminous plants help in nitrogen fixation.	<b>1</b>										
(4)	In 2014 there had been a huge <b>landslide</b> in the village Malin.	<b>1</b>										
(5)	In combustion of coal, <b>CO<sub>2</sub></b> gas is released.	<b>1</b>										
<b>Q.2.</b>	<b>Answer the following questions : (Any Five)</b>											
(1)	(i) Products produced with the help of microbes are bread, cheese, wine, yoghurt, butter, probiotics and vinegar. (ii) They are also used for producing chemicals, enzymes, nutrients, medicines like antibiotics and also for Bio-fuel. (iii) They are used in garbage management and pollution control.	<b>2</b>										

(2)	<p>(i) Ethanol is a renewable, domestically produced transportation fuel.</p> <p>(ii) It burns more cleanly producing less carbon emission.</p> <p>(iii) Reduces dependence of fossil fuels.</p> <p>(iv) Enhances the octane content in the fuel.</p>	<b>2</b>
(3)	<p>Complete the following conceptual picture.</p> <div style="text-align: center;"> <pre> graph TD     A[Sewage af er processing] --&gt; B[Cleaning]     A --&gt; C[Microbial decomposition]     A --&gt; D[Sludge - Fertilizer]     A --&gt; E[Environmentally safe water] </pre> </div>	<b>2</b>
(4)	<p>(i) It has become possible to increase the per hectre yield irrespective of the limitations of crop-land area.</p> <p>(ii) Expenses on disease control have minimized since development of resistant varieties.</p> <p>(iii) Due to development of fast fruit setting varieties yield per annum has been increased.</p> <p>(iv) Development of stress resistant varieties which can withstand variable temperature, water-stress, changing fertility of soil etc. has become possible.</p>	<b>2</b>
(5)	<p>(i) National Disaster Response Force has been established as per the Disaster Management Act 2005.</p> <p>(ii) Divisions of these forces are working in the army.</p> <p>(iii) Overall 12 divisions are working in the country.</p> <p>(iv) Its headquarter is in Delhi and it is in action all over the country with the help of army.</p> <p>(v) In Maharashtra, National Disaster Response Force is in action through State Reserve Police Force.</p> <p>(vi) Personnel of this force have substantial contribution in rescue work in disasters like cyclones, cliff-sliding, building collapse etc.</p>	<b>2</b>

<b>(6)</b>	<b>2</b>												
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<b>A.3.</b>	<b>3</b>												
<b>Answer the following questions : (Any Five)</b>													
(1)	<p>(i) Microbial enzymes have replaced chemical catalysts in chemical industry. These enzymes are active at low temperature, pH and pressure; due to which energy is saved and erosion-proof instruments are also not necessary.</p> <p>(ii) Enzymes carry out specific processes, hence unnecessary by-products are not formed due to which expenses on purification are minimised.</p> <p>(iii) In case of microbial enzymatic reactions, elimination and decomposition of waste material is avoided and enzymes can be reused. Therefore enzymes are eco-friendly.</p> <p>(iv) Oxidoreductases, transferases, hydrolases, lyases, isomerases, ligases etc. are microbial enzymes.</p> <p>(v) Enzymes are mixed with detergents for removal of dirt at low temperature.</p> <p>(vi) Glucose and fructose syrup can be obtained from corn flour by action of enzymes obtained from bacilli and streptomyces.</p> <p>(vii) Microbial enzymes are used in various industries like cheese, plant extracts, textile, leather, paper etc.</p>												
(2)	<p>Blue revolution :</p> <p>(i) Production of various useful aquatic organisms with the help of water is called as blue revolution.</p> <p>(ii) Farm ponds and fishes are very common in East Asian countries.</p> <p>(iii) Along with aquatic plants and animals, fishes and shrimps are also cultivated.</p>												
	<b>3</b>												

(3)	<p>(iv) Government of India has vowed to increase the production by encouraging the people for pisciculture by launching Nil-Kranti Mission - 2016 (NKM - 16) program. 50%-100% subsidies are offered in this case.</p> <p>(v) Marine and fresh water fishery is possible on large scale.</p> <p>(vi) Fresh water fishes like rohu, catla and other fishery products like shrimp and lobsters are being cultured on large scale.</p>	3
(4)	<p>(i) Tobacco chewing may lead to cancer.</p> <p>(ii) Temporarily intoxicating drugs of plant origin and some chemicals may permanently damage the human nervous system.</p> <p>(iii) There can be carcinogenic effect of tobacco on mouth and lungs.</p> <p>(iv) I will explain all harmful effects to both parents and the child, so that it can help their child overcome his addiction. I will help him to cultivate some good hobby to divert his mind from tobacco.</p>	3
(5)	<p>Mock Drill :</p> <p>(i) Mock Drill is a practice to check the preparedness of facing the disaster as early as possible.</p> <p>(ii) Virtual or apparent situation of disaster is created to check the reaction time for any type of disaster.</p> <p>(iii) Trained personnel observe their responsibilities to check execution of plan designed for disaster redressal.</p> <p>(iv) Mock drill helps to check the efficiency of the system prepared for disaster redressal.</p> <p>(v) It is arranged in various schools by the fire fighters to create awareness during fire.</p> <p>(vi) It includes demonstrations like extinguishing fire, rescuing the people trapped at higher floors of buildings, rescuing the persons</p>	3

	<p>whose clothing have caught fire etc.            (vii) Such activities are also organised by police force and voluntary organizations.</p> <p>(6) </p>	3
<p><b>Q.4.</b> (1)</p>	<p><b>Answer the following questions : (Any One)</b></p> <p>(A) Carbon compounds obtained from some bacteria and fungi for destroying or preventing the growth of harmful micro-organisms are called antibiotics.</p> <p>(B) (i) Antibiotics should be taken only when prescribed by a doctor.            (ii) Don't purchase any antibiotic from medical stores without a prescription from a doctor.            (iii) Don't consume antibiotics on your own to treat common diseases like a throat infection, common cold or influenza.            (iv) Even if you feel well before completing of the prescribed course of the antibiotic, you must continue and complete it.            (v) Don't suggest to others the antibiotics which were useful to you.</p>	5
<p>(2)</p>	<p>(i) Genetically modified crops are being produced by introducing changes in DNA of natural crops.            (ii) It has become possible to increase the per hectare yield irrespective of the limitations of crop-land area.            (iii) Expenses on disease control have minimized since development of resistant varieties.            (iv) Due to development of fast fruit setting varieties, yield per annum has been increased.            (v) Development of stress resistant varieties which can withstand variable temperature, water-stress, changing fertility of soil, etc. has become possible.            (vi) Biofertilizers, bioinsecticides have been developed with the help of biotechnology which prevent the soil from being polluted and increase the yield.            (vii) With the help of biotechnology, plants and microorganisms are used for absorption or destruction of toxic chemicals and harmful pollutants. This is called bioremediation.</p>	5
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