

TED (15)–3001

(REVISION — 2015)

Reg. No.....

Signature .....

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2017**

**ENVIRONMENTAL SCIENCE AND DISASTER MANAGEMENT**

[Time : 3 hours

(Maximum marks : 100)

**PART — A**

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. List any two renewable energy sources.
2. Define ecology.
3. Define smog.
4. Draw a food chain.
5. List any two classification of disaster.

(5×2 = 10)

**PART — B**

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. What you meant by biome ?
2. Write a note on desertification.
3. Draw a food web.
4. Describe radioactive contamination.
5. Explain briefly floods, fires and drought.
6. How the nuclear power plant disaster effect environment.
7. List the renewable energy sources.

(5×6 = 30)

**PART — C**

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

**UNIT — I**

- III (a) What are the problems due to deforestation ? 7
- (b) Write about renewable and non renewable sources of energy. 8

OR

[15]

[P.T.O.]

- IV (a) What are the control measures of land degradation ? 7  
 (b) Write causes of flood and draught. 8

## UNIT -- II

- V (a) Write notes on producers, consumers, decomposers with example. 7  
 (b) Briefly explain the characteristic of forest ecosystem. 8

Or:

- VI (a) Illustrate the effect of urbanisation. 7  
 (b) Differentiate the types of ecosystem with example. 8

## UNIT -- III

- VII (a) "HEAT islands". Explain with reasons and its bad effects. 7  
 (b) Enumerate the reasons for global warming and briefly explain. 8

Or:

- VIII (a) List Man made reasons of water pollution. Explain 7  
 (b) What are the different methods to dispose solid waste ? 8

## UNIT -- IV

- IX (a) Define disaster and explain its types. 7  
 (b) Explain the management plan for preventing transportation accidents. 8

Or:

- X (a) Name and explain new emerging approach in disaster management. 7  
 (b) List different rules and acts related to disaster management. 8

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9/5/2017  
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Scoring Indicators SET-III  
TED 215

Version: ✓

Qn. No.	Scoring Indicators	Split score	Total score
1 D	- wind - Solar - Tidal - Hydel (any two)	1	2
2)	The branch of biology that deals with relations of organisms to one another and their physical surrounding ( <del>But</del> Note: check key words only)	2	2
3)	Fog or haze intensified due to excess of smoke or other pollutants to atmosphere	2	2
4)	Draw food chains <pre>graph LR; A[Grass] --&gt; B[Grasshopper]; B --&gt; C[bird]</pre> <p>or</p> <pre>graph LR; A[producer] --&gt; B[Consumer]; B --&gt; C[Decomposer]</pre>	2	2
5)	Earthquake, Tsunami, Land Slide	2	2

Qn. No.	Scoring Indicators	Split score	Total score
<p><u>I</u> 1)</p>	<p><u>what you meant by biome.</u>                      → Biome a very large ecological area on earth surface with flora fauna. (animals + plants)                      → with flower fauna. (animals + plants)                      - Biotic &amp; abiotic factors.                      - It is not a eco system.</p>	<p>2 2 2</p>	<p>6.</p>
<p><u>II</u> 2)</p>	<p><u>Desertification</u>                      → The process of fertile land become desert.                      → Due to over grazing.                      → loss of habitat.                      → loss of water as well as vegetation gradually                      → Due to climatic change &amp; human intervention                      (each point carry one mark).</p>	<p>2 1 1 1 1</p>	<p>6</p>
<p><u>III</u> 3)</p>	<p><u>Draw food web.</u> - A food chain linked together and interact each other...                      Definition.</p>	<p>2 4</p>	<p>6</p>

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Scoring Indicators

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Qn. No.	Scoring Indicators	Split score	Total score
II . 4	<p>Radio Active Contamination Presence of RadioActive Substances.</p> <ul style="list-style-type: none"> <li>- on surface</li> <li>- within Solids.</li> <li>- liquids or gases.</li> <li>- including human body.</li> </ul> <p>That <sup>Adversely</sup> effect human life as well as other species and plants.</p>	<p>1 1 1 1 1</p>	<p>6</p>
II 5.	<p>Floods, fires, draught</p> <p><u>Floods.</u> An overflow of a large amount of water beyond its normal limits, especially over what is normally in dry land. Adversely effect. human life &amp; other animals &amp; plants.</p> <p><u>Fires.</u> Fire is the rapid oxidation of a material in the exothermic chemical process of combustion, releasing heat and light. Forest fire &amp; building indoor fire.</p> <p><u>Draught.</u> It is a prolonged shortage of water supply. whether atmospheric, surface water or Ground water</p>	<p>2 2</p>	<p>6</p>

Qn. No.	Scoring Indicators	Split score	Total score
II.6	Students can write with examples of → Chernobyl in Ukraine → Fukushima Daiichi - Japan. - loss of life - loss of plants → Contamination of nuclear element in food & water & solids.	2  1 1 1 1	6
II.7	→ Sunlight → Geothermal → Hydro power → Wind power → Tidal → Biomass etc...	1 1 1 1 1 1	6
<u>Part C.</u>			
III.9	→ Decrease in Rainfall → lowering of water table → Reduction in Oxygen → Soil erosion → Increase in Carbon dioxide level → adverse climatic conditions → loss of flora & fauna → ecological imbalance → Destruction of natural habitat for animals.	with severe poverty	7

Qn. No.	Scoring Indicators	Split score	Total score
III	<p>b) → The energy that which renewable after repeated usage is called renewable.                      example - sunlight, wind, tide, etc.                      → <u>eco friendly</u></p> <p>→ The sources of energy from fossil which will deplete after continuous usage is called non renewable energy.                      Petroleum products, → <u>Coal and diesel</u>.                      → <u>produce more carbon dioxide</u></p>	<p>2 1 1 2 1 1</p>	<p>2 8</p>
IV	<p>a) → Afforestation and reforestation.                      → Conservation of tillage                      → Gardening                      → Construction of wind breakers                      → Applying organic fertilizers.                      → Responsible farming                      → Avoid <del>Attract</del> Attraction of land.</p> <p>b) <u>Flood &amp; Drought</u> definition &amp; <del>causes</del>                      → Heavy rain                      → melting of ice                      → cloud burst                      → Rivers filled with sand &amp; mud due to unscientific dams.                      → <del>important</del> Improper drainage systems.</p>	<p>1 1 1 1 1 1 2 3</p>	<p>7</p>

## Scoring Indicators

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Qn. No.	Scoring Indicators	Split score	Total score
	<p>with non living elements -</p> <ul style="list-style-type: none"> <li>- water -</li> <li>- Temperature -</li> <li>- Strong flow of water</li> <li>- which help Biotic Components</li> </ul>		
1	<p>Effect of eco system                      ecosystem helps to survive plants animals                      bacteria, fungi. that make a community                      without eco system no living organism                      can survive</p>		
<p>IV                      ⑥</p>	<p><u>Types of ecosystem</u> - list and differentiate</p> <ul style="list-style-type: none"> <li>Forest ecosystem</li> <li>Pond ecosystem</li> <li>Grassland ecosystem</li> <li>Marine ecosystem.</li> <li>Fresh water ecosystem</li> <li>Desert ecosystem</li> </ul>	<p>4 + 3</p>	

## Scoring Indicators

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Qn. No.	Scoring Indicators	Split score	Total score
IV	<p><u>Drought</u></p> <ul style="list-style-type: none"> <li>→ deforestation</li> <li>→ effect of water currents</li> <li>→ loose rain due to climatic change</li> <li>→ Poor water management system</li> <li>→ Use of land for alternate purpose.</li> <li>→ Alteration of land.</li> </ul>	3	
IV a	<p>producers → produce food using sunlight + oxygen by photo synthesis - All <del>vegita</del> <sup>plants</sup></p> <ul style="list-style-type: none"> <li>→ Consumers - Herbivorous as well as Carnivorous animals they get <del>food</del> energy from plants. and plant-eating animals</li> <li>→ <u>decomposers</u> - These clean the environment after loss of an living organism. Which are in the case of plants, ants, bacteria, micro organism in the case of animals.</li> </ul>	2	2
IV a	<p>(b) Forest ecosystem consists of Biotic elements Plants - animals - micro organisms (Describe each part)</p>	3	7

## Scoring Indicators

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Qn. No.	Scoring Indicators	Split score	Total score
<p><u>VI</u></p> <p>(a)</p>	<p>Urbanisation.</p> <ul style="list-style-type: none"> <li>→ land degradation</li> <li>→ Soil erosion</li> <li>→ Large amount of Sewage</li> <li>→ Thermal radiation</li> <li>→ Heat Islands.</li> <li>→ Global warming.</li> </ul>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>7 points any seven.</p> </div> <p>1 1 1 1 1 1</p>	<p>7</p>
<p><u>VI</u></p> <p>(b)</p>	<p>Forest ecosystem</p> <p>Grass land ecosystem.</p> <p>desert ecosystem.</p> <p>aquatic ecosystem</p> <p>→ The biotic elements in desert ecosystem can't survive in other systems.</p> <p>- One ecosystem contributes a specific combination biotic &amp; abiotic components.</p>	<p>for listy 4 marks</p> <p>Describe 4 marks</p> <p>4 4</p>	<p>8.</p>

## Scoring Indicators

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Qn. No.	Scoring Indicators	Split score	Total score
7	<del>Write a note on earthquakes. (page 23)</del>		
8	<del>What is meant by Tsunami? (page 76)</del>		
9	<del>Hot Spot bio diversity (Page 607)</del>		
10	<p><u>Good web. Snake.</u></p> <p>Several good systems linked together.</p>		
11	Radio Active Contamination ✓ <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">68</span>		

Set ①

## Scoring Indicators

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Version:

Qn. No.	Scoring Indicators	Split score	Total score
VII a	<p>Heat Island effect is comparatively high temperature zone in Urban areas.</p> <p>It is the elevated temperature in Urban areas. Due to more buildings &amp; more people.</p> <p>In local areas it may be around 1°C but in big cities it varies upto 12°C. The average difference is 2.7°C.</p>	<p>2</p> <p>2</p> <p>3</p>	7
b	<p>→ Drastic increase of <math>\text{CO}_2</math> (at least eight points)</p> <p>Due to</p> <ol style="list-style-type: none"> <li>1) emission from vehicles</li> <li>2) emission from industries</li> <li>3) deforestation.</li> <li>4) Urbanisation</li> <li>5) land degradation.</li> <li>6) use of CFC</li> <li>7) Depletion in Ozone layer.</li> </ol>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>5</p>	8
VIII	<p>→ Man made reasons</p> <p>→ Sewage to rivers &amp; lakes</p> <p>→ Industrial waste to rivers &amp; Sea.</p> <p>→ depositing solid waste in rivers &amp; pond</p> <p>→ Tourist related activities</p> <p>→ Non point water pollution</p> <p>→ point water pollution</p>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">4 points with example.</div>	

## Scoring Indicators

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Version:

Qn. No.	Scoring Indicators	Split score	Total score
VIII	<p>5) 1. Residential waste → Contaminates local area produce, Consequent diseases.</p> <p>→ Industrial waste → This also covers the land</p> <p>→ Commercial</p> <p>→ Institutional.</p> <p>→ <del>Construction</del> &amp; Construction &amp; Demolition.</p> <p>→ Municipal Service ✓</p> <p>→ Agriculture ✓</p>	<p>(one) mark carry each point</p> <p>8</p>	8
IX	<p>5) <u>Type of Risk.</u></p> <p>A disaster is a serious <sup>①</sup> disruption of the functioning of a <sup>②</sup> Community or a Society involving wide <sup>③</sup> spread human, material <sup>④</sup> economic or environmental losses and impact, which exceeds the ability of the <sup>⑤</sup> affected Community or Society to cope using its own resources.</p> <p>Fatal, <del>that</del> <sup>⑥</sup> Valuable, <sup>⑦</sup> minor,</p>	7	7

## Scoring Indicators

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Qn. No.	Scoring Indicators	Split score	Total score
IX b	Enforcement of law Educate Enterprise Engineering Awareness programs Use of Safety Standards. Better Road Construction. Quality Road & Signals.	1 1 1 1 1 1 1 1	8
IX a	a) AIS GPS MLG DDS Remote Sensing Satellite Mapping Describe each keyword.	4 + <del>3</del> 3	7
IX b	b) Petroleum Act 1934 Factory Act 1948 Insurance Act 1984 Environment pollution act 1986. Coastal Regulation Act (CRZ-1991) Disaster Management Act (2005)	4 + 4 8	8