

Total No. of Questions: 6

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Enrollment No.....



Faculty of Engineering  
End Sem (Odd) Examination December-2018  
EN3HS01 History of Science and Technology  
Programme: B.Tech. Branch/Specialisation: All

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Which is not an example of science? **1**  
(a) Occurrence of rain (b) Wheel is round  
(c) Blood is red (d) Different complexions of skin
- ii. What's main source of knowledge about the Indus Valley Civilization? **1**  
(a) Coins (b) Inscriptions  
(c) Archaeological excavations (d) Manuscripts
- iii. "Father of Indian Renaissance" is related to **1**  
(a) Bal Gangadhar Tilak (b) Tagore  
(c) Nehru (d) Raja Ram Mohan Roy
- iv. The first movement launched against the British in India was **1**  
(a) Swadeshi (b) Khilafat  
(c) Quit India (d) Non- Cooperation
- v. What replaced the Planning Commission of India? **1**  
(a) National Development Cell (b) National Promotion Council  
(c) NITI Aayog (d) None of these
- vi. 'Indian Institute of Chemical Technology' under CSIR is located in **1**  
(a) Chennai (b) Hyderabad (c) Ahmedabad (d) Pune
- vii. The geomagnetic equator passes over which place making it responsible **1**  
for rocket launching under ISRO?  
(a) Bangalore (b) Chennai (c) Trivandrum (d) Thumba
- viii. "Golden Rice", a prominent application of biotechnology helps in: **1**  
(a) Pest Resistance (b) Herbicide tolerance  
(c) Lessen Vitamin A deficiency (d) Lessen Calcium deficiency

P.T.O.

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|     | ix.  | Photovoltaic energy is the conversion of sunlight into:   | <b>1</b> |
|     |      | (a) Chemical energy (b) Electricity   |          |
|     |      | (c) Biogas (d) Geothermal energy  |          |
|     | x.   | The universal “Nut Sheller” mostly used in the villages of Uganda is a simple hand-operated machine capable of shelling 50 kilograms of raw, sun-dried peanuts per hour. It’s an example of:  | <b>1</b> |
|     |      | (a) Commercial technology (b) Appropriate technology  |          |
|     |      | (c) Technology forecasting (d) Technology development   |          |
| Q.2 | i.   | “Rationality and logical thinking confronts belief and superstitions” Give your views to this statement with two examples.  | <b>2</b> |
|     | ii.  | “The existence of technology is completed with the study of science” Discuss the statement and give two relevant examples to justify it.  | <b>3</b> |
|     | iii. | What type of thinking process should a person exemplify to become scientific minded in the long run? Explain your answer and give six examples of such personifications with their contributions.   | <b>5</b> |
| OR  | iv.  | “Today comfort and luxury is dependent on developments of science and technology in different domains” Highlight five relevant and clear examples illustrating how science and technology has evolved from the past and caters to our comforts today in varied domains. | <b>5</b> |
| Q.3 | i.   | Enlist two primary objectives and two projects of PATSER scheme.  | <b>2</b> |
|     | ii.  | Highlight some of the major crisis (at least three) of India in details which makes science and technology education an essential aspect in the Indian Scenario?  | <b>3</b> |
|     | iii. | What is CSIR? Mention two key objectives of CSIR? Highlight at least six achievements of CSIR.  | <b>5</b> |
| OR  | iv.  | What is the importance of “Technology Mission” in India? Discuss about any four technology missions in details.   | <b>5</b> |
| Q.4 | i.   | Under what circumstances and how was the Five-Year plan initiated?  | <b>2</b> |
|     | ii.  | Discuss Nehru’s vision of science and state how it was significant for a developing nation like India.  | <b>3</b> |
|     | iii. | Discuss about any five plans with their proper duration interval.   | <b>5</b> |

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| OR  | iv.  | What is the importance of Technology Policies in India? Discuss four technology policies of independent India in details with their year of release. | <b>5</b> |
| Q.5 | i.   | Who initiated India’s Three Stage Nuclear Energy Programme and what was its significance?  | <b>2</b> |
|     | ii.  | Discuss the importance and usage of any three nonconventional energy sources in R&D domain.  | <b>3</b> |
|     | iii. | What is biotechnology? Discuss with relevant examples to justify how biotechnology is useful for R&D applications in different domains.              | <b>5</b> |
| OR  | iv.  | Discuss essential services of INSAT series. Mention any two space centres/units in India with their major responsibility.                            | <b>5</b> |
| Q.6 |      | Write short notes on any two:  |          |
|     | i.   | Appropriate Technology – Discuss about the concept with at least one example, also highlight about the advantages and characteristics.               | <b>5</b> |
|     | ii.  | Technology Transfer – Highlight on the importance, methods and process of transfer of technology.  | <b>5</b> |
|     | iii. | Technological forecasting and Technological barriers – Give the idea of forecasting with an example and discuss about obstacles faced.               | <b>5</b> |

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**Marking Scheme**  
**EN3HS01 History of Science and Technology**

Q.1	i.	Which is not an example of science? (b) Wheel is round		<b>1</b>
	ii.	What's main source of knowledge about the Indus Valley Civilization? (c) Archaeological excavations		<b>1</b>
	iii.	"Father of Indian Renaissance" is related to (d) Raja Ram Mohan Roy		<b>1</b>
	iv.	The first movement launched against the British in India was (a) Swadeshi		<b>1</b>
	v.	What replaced the Planning Commission of India? (c) NITI Aayog		<b>1</b>
	vi.	'Indian Institute of Chemical Technology' under CSIR is located in (b) Hyderabad		<b>1</b>
	vii.	The geomagnetic equator passes over which place making it responsible for rocket launching under ISRO? (d) Thumba		<b>1</b>
	viii.	"Golden Rice", a prominent application of biotechnology helps in: (c) Lessen Vitamin A deficiency		<b>1</b>
	ix.	Photovoltaic energy is the conversion of sunlight into: (a) Chemical energy		<b>1</b>
	x.	The universal "Nut Sheller" mostly used in the villages of Uganda is a simple hand-operated machine capable of shelling 50 kilograms of raw, sun-dried peanuts per hour. It's an example of: (b) Appropriate technology		<b>1</b>
Q.2	i.	Discussion of the statement Two Examples to justify	1 mark 2 marks	<b>2</b>
	ii.	Justification of statement with two examples (1 mark for each example with justification) Discussion	2 marks  1 mark	<b>3</b>
	iii.	Explanation of thinking process Six correct personifications	2 marks 3 marks	<b>5</b>

OR	iv.	Five relevant and clear examples illustrating how science and technology has evolved from the past and caters to our comforts today in varied domains. (1 mark for each example with explanation and discussion in different fields)		<b>5</b>
Q.3	i.	Two primary objectives (0.5 mark *2) Two projects (0.5 mark *2) (0.5 mark for each objective and each project)	1 mark 1 mark	<b>2</b>
	ii.	Major crisis (at least three discussed clearly) 1 mark for each point (1 mark *3)	3 marks	<b>3</b>
	iii.	Introduction to CSIR Two key objectives of CSIR 6 Achievements of CSIR.	1 mark 1 mark 3 marks	<b>5</b>
OR	iv.	Importance of "Technology Mission" in India Any four technology missions. 1 mark for each mission (1 mark *4)	1 mark 4 marks	<b>5</b>
Q.4	i.	Importance of Five year plan initiation		<b>2</b>
	ii.	Nehru's vision and significance		<b>3</b>
	iii.	Any five plans with their duration interval. 1 mark for each plan with correct duration (1 mark *5)	5 marks	<b>5</b>
OR	iv.	Importance of Technology Policies Four technology policies of India in details with their correct year of release. 1 mark for each policy with proper interpretation and correct year (1 mark * 4)	1 mark  4 marks	<b>5</b>
Q.5	i.	Name of the person who initiated India's Three stage Nuclear Energy Programme Its significance	1 mark 1 mark	<b>2</b>
	ii.	Discussion of three nonconventional energy sources and its applications 1 mark for each discussion and its applications (1 mark *3)		<b>3</b>
	iii.	Definition of Biotechnology Use for R&D applications in different domains (Any 4)	1 mark 4 marks	<b>5</b>

OR	iv. INSAT services	2 marks	<b>5</b>
	Two space centres/units in India with their major responsibility	3 marks	
Q.6	Write short notes on any two:		
i.	Appropriate Technology		<b>5</b>
	Introducing the concept with example	2 marks	
	Discussing about the advantages and characteristics	3 marks.	
ii.	Technology Transfer		<b>5</b>
	Importance, methods	2 marks	
	Process of transfer of technology.	3 marks	
iii.	Technological forecasting and Technological barriers –		<b>5</b>
	Definition of forecasting with example	2 marks	
	Obstacles faced	3 marks	

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