

Total No. of Questions: 6

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Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2017
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. Faraday's "Law of Electromagnetic Induction" is an example of **1**
(a) Applied Science (b) Technology
(c) Science (d) Faith
 - ii. "Unicorn" engraved on Indus seals appears to exhibit a mythical **1**
animal that represents a:
(a) Horse (b) Humpless Bull
(c) Tiger (d) Indian Elephant
 - iii. "INSPIRE" is an innovative programme sponsored and managed by **1**
(a) DSIR (b) DST (c) CSIR (d) CEL
 - iv. CSIR-National Aerospace Laboratories(CSIR-NAL) is located in **1**
(a) Chennai (b) Pune (c) Dehradun (d) Bangalore
 - v. Achieving gender parity in Science and Tech. has been a resolution of **1**
(a) STI 2013 policy (b) 12th plan
(c) 1983 tech. policy (d) None of these
 - vi. Indian National Army for Indian Independence was created by: **1**
(a) Bhagat Singh (b)Subhash Ch. Bose
(c) Rajendra Prasad (d) Nehru
 - vii. Which pair is the combination of the first missile boat of India and **1**
first Indian Satellite respectively?
(a) INS Shakti / Bhaskara (b) INS Ajay / Rohini
(c) INS Khukri / INSAT (d) INS Vinash / Aryabhata

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- viii. For obtaining solar energy during sunlight, energy is stored in batteries of **1**
(a) Nickel cadmium (b) Zinc cadmium
(c) Nickel zinc (d) Hydrogen
- ix. India's and Asia's first nuclear reactor was **1**
(a) Kaiga (b) Apsara (c) CIRUS (d) Dhruva
- x. Exporting resources - collaborative agreements or volunteer services that provide expertise to outside organizations is an example of: **1**
(a) Technology assessment (b) Technology transfer
(c) Technology forecasting (d) Technology change
- Q.2 i. (a) "Technology is dependent on science". Give two examples to justify your answer. **4**
(b) Logical/Rational View and faith are two extremes or they go hand in hand..... What's your opinion? Justify with examples.
- ii. How does the evolution of education, science, technology and its applications in India affect the global arena? Give proper instances. **6**
- OR iii. What aspects should a person embody to become an eminent scientist? How does his role play an active part in societal development? Name two eminent scientists known for their breakthrough contribution in society. **6**
- Q.3 i. (a) Discuss the significance of PATSER scheme. **4**
(b) What are the main goals and objectives of Department of Science and Technology (DST)?
- ii. What is CSIR? Mention two key purposes for which CSIR was established? Highlight the achievements of CSIR. **6**
- OR iii. How is the agenda of "Technology Mission" relevant in Indian scenario? Give few examples justifying your answer. **6**
- Q.4 i. (a) Discuss the role of Technology Development Board (TDB). **4**
(b) How do you think was Nehru's vision of science significant for a developing nation like India?
- ii. Mention the importance of Science and Planning. Discuss about any five plans with their duration interval. **6**

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- OR iii. Discuss about the technology policies of independent India in details with their year of release. **6**
- Q.5 i. (a) Highlight four essential services of INSAT series. **4**
(b) How is Ocean Development useful for R&D.
- ii. Biotechnology is useful beyond applications in the field of medicine.... Discuss with relevant examples to justify how and in which domains biotechnology is useful along with medicinal applications. **6**
- OR iii. Conservation of nonconventional sources of energy is gaining importance day by day.... Discuss why is it so by stating the importance and usage of nonconventional energy sources. **6**
- Q.6 Write short notes on any two of the following:
- i. Appropriate Technology – Emphasize on introducing the concept, discussing about the advantages and characteristics. **5**
- ii. Technology Transfer – Highlight on types, methods and process of transfer of technology. **5**
- iii. Technological forecasting and Technological barriers – Emphasize on the importance of forecasting and obstacles faced. **5**

EN3HS01 History of Science and Technology

Marking Scheme

Q.1	i.	Faraday's "Law of Electromagnetic Induction" is an example of (c) Science	1		
	ii.	"Unicorn" engraved on Indus seals appears to exhibit a mythical animal that represents a: (b) Humpless Bull	1		
	iii.	"INSPIRE" is an innovative programme sponsored and managed by (b) DST	1		
	iv.	CSIR-National Aerospace Laboratories(CSIR-NAL) is located in (d) Bangalore	1		
	v.	Achieving gender parity in Science and Tech. has been a resolution of (a) STI 2013 policy	1		
	vi.	Indian National Army for Indian Independence was created by: (b)Subhash Ch. Bose	1		
	vii.	Which pair is the combination of the first missile boat of India and first Indian Satellite respectively? (d) INS Vinash / Aryabhata	1		
	viii.	For obtaining solar energy during sunlight, energy is stored in batteries of (a) Nickel cadmium	1		
	ix.	India's and Asia's first nuclear reactor was (b) Apsara	1		
	x.	Exporting resources - collaborative agreements or volunteer services that provide expertise to outside organizations is an example of: (b) Technology transfer	1		
Q.2	i.	(a) Relation of Science with Technology - 1 mark Examples to justify - 1 mark (b) Justification of statement with two examples - 2 marks (1 mark for each example with justification)	4		
	ii.	Evolution of education, science, technology in India benefiting India with global collaboration (explained with at least 3 examples). 2+2+2 marks	6		
	OR iii.	Persons quality - 2 marks Role play in societal development - 2 marks Two scientists with their contributions - 2 marks	6		
Q.3	i.	(a) Primary importance of PATSER scheme (1 mark for each objective) (b) Two Responsibility of DST	- 2 marks		4
	ii.	Introduction to CSIR Two key objectives of CSIR Achievements of CSIR	- 1 mark - 2 marks - 3 marks		6
	OR iii.	Importance of "Technology Mission" in India Discuss about any five technology missions. (1 mark for each mission)	- 1 mark - 5 marks		6
Q.4	i.	(a) Definition of TDB and role (b) Nehru's vision and significance	- 2 marks - 2 marks		4
	ii.	Importance of Science and Planning. Discuss about any five plans with their duration interval (1 mark for each plan with correct duration)	- 1 mark 5 marks		6
	OR iii.	Any three technology policies of India in details with their correct year of release. (2 marks for each policy with proper interpretation and correct year)	6 marks		6
Q.5	i.	(a) Four INSAT services (0.5 mark for each) (b) Objectives of ocean development for R&D	- 2 marks - 2 marks.		4
	ii.	Biotechnology's use for R&D applications in the domain of agriculture, medicine, food and fuel. (2 marks for each domain) 6 marks	6 marks		6
	OR iii.	Proper and Vivid Discussion of the nonconventional energy sources and its applications	- 6 marks		6
Q.6		Write short notes on any two of the following:			
	i.	Appropriate Technology – Introducing the concept Discussing about the advantages Characteristics of appropriate technology	- 1 mark - 2 marks - 2 marks		5
	ii.	Technology Transfer – Types, methods Process of transfer of technology.	- 2 marks - 3 marks		5
	iii.	Technological forecasting and barriers- Importance of forecasting Obstacles faced	- 2 marks - 3 marks		5
