Reg. No.	R	A	2	2	1	1	0	3	0	0	3	0	0	1	7

B.Tech. / M.Tech (Integrated) DEGREE EXAMINATION, JANUARY 2023

First Semester

21GNH101J – PHILOSOPHY OF ENGINEERING

(For the candidates admitted from the academic year 2022-2023)

Note:

(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40^{th} minute.

(ii) **Part – B** and **Part – C** should be answered in answer booklet.

Time: 3 Hours | Max. Marks: 75

PART – A (20 × 1 = 20Marks)

Answer **ALL** Questions

Q.	Question	Marks	BL	CO	PO
1.	Mathematics and science were applied in all the fields in ______ era. (A) Ancient era (B) Middle era (C) Renaissance era (D) Modern era	1	1	1	1
2.	______ engineering developed during the industrial revolution. (A) Mechanical (B) Chemical (C) Aeronautical (D) Electrical	1	1	1	1
3.	______ can be viewed as an activity that forms or changes culture. (A) Science (B) Engineering (C) Arts (D) Technology	1	1	1	1
4.	Engineering is the ______ oriented process of designing and making tools and systems. (A) Science (B) Goal (C) Design (D) Technology	1	1	1	1
5.	_______ is the branch of philosophy that studies concepts such as existence, being and becoming. (A) Ontology (B) First-order logic (C) Engineering (D) Axiology	1	2	2	1
6.	______ identifies ontology's function with respect to its accuracy and comprehensiveness. (A) Quantity (B) Strength (C) Weakness (D) Quality	1	1	2	1
7.	Which of the following ontology is specific-domain independent? (A) Foundational (B) Reference (C) Domain (D) Application	1	2	2	1
8.	Choose the last stage of product life cycle from the options listed below. (A) Product maturity (B) Product growth (C) Product decline (D) Product development	1	2	2	1

9. ______ is the total of all engineered tools, devices and processes available. 1 1 3 1

(A) Technology (B) Engineering
(C) Science (D) Knowledge

10. In which quadrant, social sciences fall-engineer as ______. 1 2 3 3

(A) Scientist (B) Sociologist
(C) Doer (D) Designer

11. Persuaders are active in ______ phase of RIASEC model. 1 1 3 1

(A) Artistic (B) Social
(C) Enterprising (D) Investigative

12. A division of epistemology which is crucial to develop scientific initiatives is called 1 2 3 1

(A) Design epistemology (B) Planning epistemology
(C) Activity epistemology (D) Timing epistemology

13. ______ method asks for a question to the user or a person. 1 2 4 1

(A) Scientific (B) Engineering
(C) Technical (D) Research

14. If the objective of your project is to invent a new product or environment, then _____ method you will follow? 1 3 4 2

(A) Scientific (B) Technical
(C) Technology (D) Engineering

15. ______ model is called as instructional systems design. 1 1 4 1

(A) RAISEC model (B) ADDIE model
(C) Scientific model (D) Engineering model

16. Transformation of design into product falls under ______ stage of CDIO process. 1 1 4 2

(A) Conceive (B) Design
(C) Implement (D) Operate

17. In _____ field there exists minimum contribution from engineering and society. 1 2 4 1

(A) Health (B) Water
(C) Space (D) Modern homes

18. ______ should hold paramount of safety, health and welfare of the public. 1 1 4 1

(A) Engineers (B) Artistics
(C) Social welfare (D) Innovators

19. 3Es stand for 1 1 4 1

(A) Ethics, equality and economics (B) Economics, environmental and equality
(C) Equality, environmental and ethics (D) Environmental, ethics and economics

		Marks	BL	CO	PO
20.	Which one of the listed engineering associations deal with publications and conference? (A) National society of engineers (B) IEEE (C) Society of women engineers (D) ISCA	1	3	4	1

PART – B (4 × 10 = 40 Marks)
Answer **ANY FOUR** Questions

		Marks	BL	CO	PO
21.	Explain in detail about the relationship between arts, mathematics, science, technology and engineering.	10	1	1	1
22.	Draw the STEAM pyramid and explain its components.	10	1	1	1
23.i.	Briefly explain the ontological layers with neat sketch.	5	1	2	1
ii.	List the difference between ontologies with neat table.	5	1	2	1
24.i.	State the definition and difference between science, engineering and technology.	5	1	3	1
ii.	Explain the four dimensions of engineering with neat sketch.	5	1	3	1
25.	State the difference between scientific method and engineering design with neat diagram.	10	1	4	1
26.	Brief the aspects of 3E's that could lead to sustainable development.	10	1	5	1

PART – C (1 × 15 = 15 Marks)
Answer **ANY ONE** Questions

		Marks	BL	CO	PO
27.	Create one course as an illustration. Write down the significance of each stages of the ADDIE model in the course. How do you map various stages of ADDIE model with teaching learning process? Do you believe that the course would have been more beneficial if you had included the stages which are missed? Mention and defend the stages that you believe should be included. Do you believe the outcomes would be worth the effort given the amount of work required to move through each stage? Justify.	15	5	4	3
28.	In order to find new drugs, XYZ pharmaceuticals is doing research and experiments. Think about this scenario and list out the challenges related to science, engineering and technology. Describe each challenges and figure out the possible solutions. Decide whether science or engineering or technology is more appropriate in this situation. Justify your choice.	15	5	3	3

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