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Question Paper Version : B

Seventh Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Bioethics and Biosafety

Time: 1 hr.]

[Max. Marks: 100

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **hundred** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. The process of applying for a patent includes which of the following steps:
 - a) Public consultation
 - b) Filing patent with descriptions
 - c) Negotiating the patent
 - d) Discarding the innovation
 2. Under the TRIPS agreement, a patent must meet _____ criteria.
 - a) Profitability
 - b) Novelty
 - c) Economic
 - d) Public opinion
 3. What is the term for protection for patents in India?
 - a) 10 years
 - b) 20 years
 - c) 25 years
 - d) 30 years
 4. Which of the following is not a requirement for patentability?
 - a) Novelty
 - b) Inventive step
 - c) Prior disclosure
 - d) Industrial applicability
 5. Which Indian law provides protection for plant varieties and farmers rights?
 - a) Patent Act, 1970
 - b) Protection of plant varieties and farmers Act, 2001
 - c) Indian contract Act, 1872
 - d) Copyright Act, 1957

6. Biotechnological inventions can be patented if they _____.
 a) Are discovered in nature b) Have industrial applicability
 c) Traditional knowledge d) Lack any commercial user
7. The Paris convention of industrial property was signed in _____ year
 a) 1883 b) 1925 c) 1945 d) 1970
8. Which of the following type patent grant protection to GMO's?
 a) Utility patent b) Design patent
 c) Plant patent d) Copyright
9. What is the primary purpose of patent law?
 a) To present sharing of information b) To encourage innovation
 c) To create monopolies d) To restrict public access
10. The Patent Act of 2005 in India brought the law in compliance with which international agreement?
 a) GATT b) TRIPS
 c) Paris convention d) Geneva Convention
11. What does TRIPS stand for in the context of IPR?
 a) Trade – Related Intellectual Property System
 b) Trade Related Aspects of IPR
 c) Trade Rights in International Parents
 d) Transfer Rights in Intellectual Property
12. The General Agreements on Tariffs and Trade (GATT) was signed in the year _____.
 a) 1947 b) 1955 c) 1965 d) 1972
13. The primary objective of the patent system is to _____.
 a) Prevent competition b) Provide exclusive rights
 c) Reduce innovation d) Create monopolies
14. _____ convention is responsible for the protection of intellectual properties
 a) Paris b) Kyoto
 c) Geneva d) Montreal protocol
15. TRIPS agreement was introduced in the year _____.
 a) 1985 b) 1994 c) 1999 d) 2005
16. The patent act in India was enacted in the year _____.
 a) 1955 b) 1970 c) 1980 d) 1995
17. Which of the following is not considered as intellectual property?
 a) Trademark b) Copyright
 c) Public domain d) Patent

18. The protection of biotechnology inventions under patent law focus on _____
a) Limiting research
b) Providing exclusive rights to inventors
c) Public access
d) Reducing cost
19. Which acts in India protects the rights of farmers regarding biodiversity?
a) Patent act, 1970
b) Biological diversity Act, 2002
c) Indian Contract Act, 1872
d) Copy Right Act, 1957
20. The GATT agreement aimed to _____
a) Regulate International trade and reduce trade barriers
b) Protect copyright
c) Promote monopoly
d) Reduce innovation
21. Biosafety measurement procedures often include _____
a) Randomized testing
b) Risk assessment and management
c) Complete elimination of BT
d) Reducing transparency
22. Purpose of biosafety guidelines for transgenic plants _____
a) Genetic diversity
b) Preventing unintended environmental consequences
c) Promoting profit generation
d) Reducing transparency
23. Which agency provides biosafety guidelines for recombinant DNA technology in the U.S.?
a) FDA
b) CDC
c) NIH
d) EPA
24. The term "Bioterrorism" refers to _____ use of biological agents
a) Improve health
b) To cause harm/fear
c) Increase the use of BT
d) None of these
25. In which year India introduced biosafety regulations for GMO's?
a) 1989
b) 1995
c) 2000
d) 2005
26. Which of the following is not a key element of GMP?
a) Quality control
b) Record keeping
c) Increasing profits
d) Facility cleanliness
27. International regulations for food and pharmaceutical products are primarily intended to _____
a) Profits
b) Safety and consumer protection
c) Monopolies
d) To increase production
28. Which regulatory document provides safety of GMO's in the European Union?
a) Regulation (EC) No. 1829/2003
b) Kyoto protocol
c) Paris convention
d) Montreal protocol

29. GLP standards were first introduced in which decade?
a) 1950's b) 1970's c) 1980's d) 1990's
30. Which body is responsible for enforcing biosafety regulations for transgenic plants in India?
a) Ministry of Environment, Forest and climate change
b) Ministry of Agriculture
c) Indian Council of Medical Research
d) Central Pollution Control Board
31. What is the primary focus of biosafety assessment procedures in India?
a) Yield b) Protecting human
c) Limit public access d) Reducing cost
32. _____ convention addresses the prevention of biological weapons?
a) Kyoto protocol b) Convention on biological weapons
c) Paris agreement d) Montreal protocol
33. The convention of biological weapons was signed in _____ year.
a) 1965 b) 1972 c) 1985 d) 1990
34. What is a major ethical implications of biological weapons?
a) Yield b) Potential harm to civilian populations
c) Cost reduction d) Promoting public health
35. Which of the following organizations provides international biosafety guidelines?
a) UNESCO b) WHO
c) IMF d) WTO
36. What is a social implication of biological weapons?
a) Improved public health strategies
b) Ethical concerns about weaponizing biological agents
c) Increased global scientific collaboration
d) Reduced risk from biotechnological advancements
37. What is the role of Good Manufacturing Practices (GMP) in biotechnology?
a) Reducing production cost b) Ensuring product quality and safety
c) Decision making d) None of these
38. Good Laboratory Practices (GLP) is essential for _____.
a) Profits b) Accuracy and reliability
c) Public awareness d) Patent applications
39. Which of the following best describes the role of International biosafety regulations
a) Monopolies b) Facilitating global trades
c) Ensuring safety of BT products d) None of these

40. In India regulatory body overseas biosafety assessment for recombinant DNA tech
 a) Ministry of Agriculture
 b) Genetic Engineering Applied Committee (GEAC)
 c) National Biodiversity Authority
 d) Central Pollution Control Board
41. Ethical implications of BT products include about _____
 a) Profit
 b) Ecological impacts
 c) Eliminating Risk
 d) Yield
42. Which of the following is a concern at the societal level in BT?
 a) Monopoly
 b) Equitable access
 c) Traditional knowledge
 d) Public Environment
43. The Cartagena protocol on biosafety was adopted under _____ treaty
 a) Convention on Biological diversity
 b) Kyoto protocol
 c) Paris agreement
 d) Montreal protocol
44. Hazard according to biosafety refers to _____
 a) Profit potential
 b) Potential items from biological agents
 c) Cost
 d) Applications
45. Exposure in biosafety refers to _____
 a) Media coverage
 b) Patent numbers
 c) Organisms/people contact to hazard
 d) Profit margins
46. Biosafety role in BT is _____
 a) Production
 b) Public trust
 c) Implementing measures to mitigate risks
 d) None on these
47. Ethical conflicts in BT arises due to _____
 a) Public awareness
 b) Interference with natural processes
 c) Environmental Conservations
 d) Reducing cost
48. How many countries signed the Cartagena protocol on biosafety in 2000?
 a) 50
 b) 103
 c) 137
 d) 150
49. What is the key principle of biosafety management?
 a) Profit
 b) Safety to reduce loss
 c) Yield
 d) Economic crops
50. The fear of unknown is an example of _____
 a) Rational perception of risk
 b) Subjective perception to risk
 c) Objective analysis
 d) Cost analysis
51. Which of the following represents ethical conflicts in BT?
 a) Yield
 b) Interference with mature
 c) Economic products
 d) Regulation

52. The fear of unknown in BT is mainly related to _____
a) Predictable outcomes b) Safety measures
c) Uncertainty d) Cost reduction
53. Unique distribution of risk and benefits in BT raises issues about _____
a) Cost b) Accessibility and fairness
c) Profits d) Monopolies
54. Which of the following describes the difference between rational and subjective perception of risk?
a) Subjective perception is based on financial analysis
b) Rational perception is influenced by emotions
c) Rational – Evidence and subjective – personal benefits
d) None of these
55. The relationship between Risk, Hazard and Exposure is managed through _____
a) Research b) Implementing safeguards
c) Profits d) Public access
56. At what level are biosafety concerns addressed in biotechnology?
a) Individual b) Institution
c) National d) All of these
57. In which year was the cartegena protocol on biosafety adopted?
a) 1985 b) 1992 c) 2000 d) 2005
58. The Cartagena protocol on biosafety is aimed at _____
a) Patents b) GMO's
c) Safe transfer and handling of GMO's d) Funding
59. The number of countries which are members of Cartagena protocol is _____
a) 50 b) 100 c) 172 d) 200
60. The primary goal of biosafety management is _____
a) Profits b) Research
c) Projecting health and environment d) Monopolies
61. Social responsibility of BT _____
a) Positive impact of BT on society b) Profit
c) Monopoly d) Eliminating traditional knowledge
62. What role does public education play in bioethics?
a) Awareness b) Involvement
c) Information access d) Profits
63. The ethical concern regarding new forms of life is primarily related to _____
a) Biodiversity b) Moral and social implications for GMO's
c) Yield d) Profit

64. Informed decision making in BT requires _____
a) Only corporate involvement b) Understanding ethical implications
c) Restriction of public knowledge d) Profit making
65. Human right is bioethics an related to _____
a) Profit making b) Protecting freedom and dignity
c) Monopoly d) Ignoring ethics
66. The principle of privacy in bioethics ensures that _____
a) Personal information is protected b) Access to genetic data
c) Secrecy d) Profit
67. Ethical concerns in technology transfer are primarily about _____
a) Equitable access b) Reducing cost
c) Limiting growth d) Increasing corporate power
68. The legal impact of BT involves:
a) Safety and compliance b) Limiting access
c) Monopolies d) Ignoring social issues
69. Which of the following impacts socioeconomic impacts of BT?
a) Monopolies b) Social welfare
c) Restricting research d) Reducing global cooperation
70. The ethical debate surrounding IPR about _____
a) Balancing innovation b) Profits increasing
c) Limit research d) Expand monopoly
71. What is the primary focus of bioethics?
a) Profit b) Moral and ethics
c) Development d) Marketing
72. Which of the following principles is associated with right?
a) Justice b) Autonomy
c) Beneficence d) Privacy
73. Beneficence in bioethics refers to :
a) Doing no harm b) Promoting well being of others
c) Profit d) Patents
74. The principle of justice in bioethics relates to:
a) Fair distribution b) Autonomy
c) Profits d) Limiting access to technology
75. Which of the following describes equity in bioethics?
a) Equality access b) Profit distribution
c) Business d) Public involvement

76. Morality differs from legality in that morality is :
a) Based on cultural values
b) Established by laws
c) Business practices
d) Profit
77. The expanding scope of ethics in biotechnology includes _____
a) Genetic engineering and technology transfer
b) Only biomedical research
c) Tax
d) Marketing strategy
78. _____ is the key difference between bioethics and business ethics
a) Bioethics in life source and ethics corporate products
b) No differences
c) Both (a) and (b)
d) None of these
79. The ethical dimensions of IPR in BT includes _____
a) Genetic resource and benefits sharing
b) Profits
c) Monopolies
d) Ignoring public
80. Technology transfer in BT involves _____ transfer
a) Funds
b) Technology between entities
c) Patents
d) Public access
81. What is the major consequence of development divide in BT?
a) Equal access
b) Technology access
c) Innovation
d) Regulation
82. Which of the following is an example of monopoly in BT?
a) Single company holding all patents on GMO's
b) Two companies
c) Several companies
d) None of these
83. Public acceptance of BT influenced by _____
a) Safety and ethics
b) Economic
c) Lack of Knowledge
d) Funding
84. How does BT helps to reduce hunger in India?
a) Population
b) Healthcare
c) Crop yield
d) Exports

85. _____ challenges effects BT industry in India
a) Regulation b) Labour
c) Resource d) Public
86. Traditional knowledge and BT can integrate into _____
a) Innovative products
b) High cost
c) Make traditional practice obsolete
d) Limit research to traditional methods
87. Benefit sharing is essential in BT for _____
a) Fair compensation b) Monopolies
c) Limit access d) Public funding
88. Which country is advanced in BT _____
a) US b) India
c) Ethiopia d) Bangladesh
89. BT contributes to environmental sustainability by _____
a) Chemicals b) Eco friendly nature
c) Monoculture d) Deforestation
90. Public v/s private funding revolve around _____
a) Patent rights b) Ethical values
c) Profits d) Ideology
91. What is the primary focus of the relationship between science, technology and society?
a) Economic growth b) Environment growth
c) Social development d) Artistic progress
92. Which of the following is a significant challenge in accessing biotechnology in developing countries?
a) Lack of labours b) High cost
c) Lack of interest d) Regulation
93. What does "ownership" in biotechnology?
a) Patent and IP rights b) Land
c) Government d) Publication
94. Which of the following is an example of traditional knowledge?
a) Genetics b) Ayurveda
c) Internet d) Nuclear power.
95. Biodiversity is important because it provides
a) Wide range of generic resource b) Growth
c) Safety d) None of these

96. Benefit sharing refers to _____
a) Distribution of patents
b) Genetic resources sharing
c) Sales of BT products
d) Supports urban development.
97. Which of the following is essential for sustainability in BT?
a) Profit
b) Ecological impact
c) Workforce
d) Regulations
98. What is difference between public and private funding in BT?
a) There is no difference
b) Public funds-government and private funds – companies
99. Does BT play role in international relationship?
a) Yes
b) No
100. How does globalization influence BT?
a) International trade
b) By limiting
c) By conflicts
d) By reducing funding

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