



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS / M.TECH(BT)Int.PhD Mol. Bio. & Micro. Bio) /  
SEM-3 / MBT-301 / PHMB-304 / PHMC-303 / 2011-12**

**2011**

**IPR & BIOSAFETY**

Time Allotted : 3 Hours

Full Marks : 70

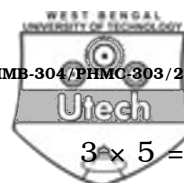
*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

**GROUP - A**

1. Answer any *ten* questions : 10 × 1 = 10

- a) What is Property ?
- b) What is Intellectual Property ?
- c) What is Copyright ?
- d) What is Trade Mark ?
- e) What is Geographical Indication ?
- f) What is Traditional Knowledge ?
- g) What is Bio-Piracy ?
- h) What is Utility ?
- i) What is State of the Art ?
- j) Who is person skilled in the art ?
- k) What is Public Domain ?
- l) What is Design ?



2. Answer any *three* :

3 × 5 = 15

- a) What is Patent ? What are the essential features of Patent ? What are the objectives of Patent ? 1 + 2 + 2
- b) What is Novelty and how to determine Novelty ? 2 + 3
- c) What is Inventive Step and how to determine Inventive step ? 2 + 3
- d) What is the procedure for granting of Patent ?

3. Answer any *one* :

1 × 10 = 10

- i) Pradip has invented a chemical which relaxes uterus during child birth. Is it patentable ? Pradip has also invented synthetic heart. Is it patentable ? 5 + 5
- ii) A patent application is related to a process for extracting Neem oil from Neem seeds comprising the following steps :
  1. Treating crushed Neem seeds in a solvent at a temperature between 40-60 degree Celsius to obtain oil cake free from bitter and odoriferous constituents.
  2. Drying the oil cake by solvent extraction having 80 - 90% ethanol concentration. The opposition filed on the basis of prior published document from a book entitled "Oil Extraction" disclosing therein extraction of seed with 70% of alcohol to remove bitter and odoriferous compounds to recover good quality of oil. Examine novelty and inventive step criteria.



**GROUP - B**

1. Answer any *five* questions :

5 × 2 = 10

i) Fill in the blanks :

..... were the first organisms to be modified in the laboratory, due to their simple .....

ii) Fill in the blanks :

Cisgenesis, sometimes also called ....., is a product designation for a category of genetically engineered .....

iii) Define Primary and Secondary containments.

iv) What precautions are to be taken to handle canine hepatitis ?

v) Fill in the blanks :

Biosafety level 2 is suitable for work involving ....., ....., ..... etc.

vi) What are the four most important risk areas which need to be considered in the use of transgenic ?

vii) What is EPA and in which year was this established ?

2. Write short notes on any *three* :

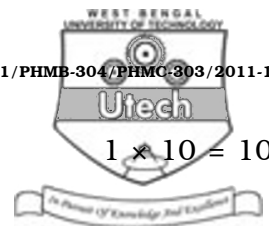
3 × 5 = 15

a) Safety equipment for primary barriers.

b) First and most famous LMO case.

c) MOEF and GEAC.

d) Impact of GMO on human health.



3. Answer any one SET of questions :

$$1 \times 10 = 10$$

**SET - A**

- i) Select appropriate Biosafety levels to classify the following microbes.
  - a) *C. difficile*
  - b) West Nile virus
  - c) Marburg virus
  - d) *Coxiella burnetii*
  - e) *Rickettsia rickettsii*.
- ii) What is basis to implement "Biosafety level 4" to instal a microbiological laboratory ?
- iii) Elaborate major points to highlight necessary precautions to be taken when dealing with biological hazards at this level.

$$5 + 2 + 3$$

**SET - B**

- iv) Define specific roles of DBT and MOEF in "Biosafety guidelines" formed by the Govt. of India.
- v) "Experiments with micro-organisms, plants and animals are grouped into three categories to follow guidelines and regulations of Govt. of India." Explain.
- vi) Name two herbicides for which genetically modified plants have been cultivated to make them resistant to virus damage.
- vii) Fill n the blanks :
 

..... virus resistant GM papaya, are grown in  
 ..... of USA.

$$2 + 3 + 3 + 2$$

