



# UNIVERSITY OF THE PUNJAB

Seventh Semester – 2019

Examination: B.S. 4 Years Program

Roll No. in Fig. ....

Roll No. in Words. ....

**PAPER: Biohazards, Biosafety, Bioethics**  
**Course Code: BOT-403 Part-I (Compulsory)**

**MAX. TIME: 15 Min.**  
**MAX. MARKS: 10**

Signature of Supdt.:

**Attempt this Paper on this Question Sheet only.**

**Please encircle the correct option. Division of marks is given in front of each question.**

**This Paper will be collected back after expiry of time limit mentioned above.**

**Q.1. Encircle the right answer, cutting and overwriting is not allowed. (1x10=10)**

**I. Dolly was cloned in**

- a) England                      b) Germany                      c) Scotland                      d) Australia

**II. The stem cells could be stimulated to differentiate into more than ----- cell types**

- (A) 100                              (B) 200  
(C) 300                              (D) 400

**III In 1994 US food has approved first genetically modified**

- (A) Tomato                      (B) Potato  
(C) Rice                              (D) Wheat

**IV High level respiratory filter used in biosafety method is**

- (A) N 95                              (B) N 94  
(C) N 93                              (D) N 90

**V *Thermus aquaticus* is present in hot springs where temperature is ° C**

- (A) 120                              (B) 130  
(C) 135                              (D) 140

**VI Alcohol used for Aseptic environment is**

- (A) 50%                              (B) 70%  
(C) 60%                              (D) 20%

**VII Smallest virus is**

- (A) Polio                              (B) Small pox  
(C) Influenza                      (D) AIDS

**VIII Protozoans cause**

- (A) Amoebic dysentary              (B) Pyorrhoea  
(C) Sleeping sickness              (D) A + B + C

**IX. Most dangerous waste is**

- a) Solid waste    b) Liquid waste    c) Hospital waste    d) house hold waste

**X. How much percentage of aqueous solution of phenol rapidly kills the vegetative cells of microorganisms?**



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**PAPER: Biohazards, Biosafety, Bioethics**

**Course Code: BOT-403 Part – II**

**MAX. TIME: 2 Hrs. 45 Min.**

**MAX. MARKS: 50**

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Q 2. Answer the short questions (10 × 2)**

- I. Define pollution
- II. Write down steps involved in Biosafety?
- III. Define microbial cultures.
- IV. What is risk assessment of genetic Manipulation?
- V. Give any four water borne diseases.
- VI. What is the misuse of GMOs?
- VII. PPE stand for?
- VIII. Define Euthanasia
- IX. What is the moral value of cloning?
- X. What is cell culture?

**Q 3 WRITE BRIEF ANSWERS (6 × 5)**

- A. Explain “RADIOACTIVE MATERIAL”, how can we dispose it from laboratories.
- B. What do you know about modification of SAFETY COMMITTEE?
- C. Write a note on deliberate release of GMOs.
- D. Explain cloning of HUMAN beings.
- E. Give ENVIRONMENTAL LAWS of Pakistan in detail.
- F. Explain in detail protection of WORKERS AND PUBLIC