

## Cancer Biology Quiz Answer Key PDF

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**Which treatment uses high-energy particles to destroy cancer cells?**

- A. Chemotherapy
- B. Immunotherapy
- C. Radiation therapy ✓**
- D. Surgery

**Which type of cancer originates in the bone or soft tissues?**

- A. Carcinoma
- B. Sarcoma ✓**
- C. Leukemia
- D. Lymphoma

**How does immunotherapy differ from traditional cancer treatments like chemotherapy and radiation?**

**Immunotherapy differs from traditional cancer treatments like chemotherapy and radiation by using the body's immune system to target and destroy cancer cells, rather than directly attacking the cells with drugs or radiation.**

**What are the challenges and benefits of implementing personalized medicine in cancer treatment?**

**The challenges of implementing personalized medicine in cancer treatment include high costs, the complexity of genetic testing, and the need for extensive data analysis, while the benefits include more effective treatments, reduced side effects, and the ability to tailor therapies to individual patients' genetic makeups.**

**Describe the role of oncogenes in the development of cancer.**

**Oncogenes play a critical role in cancer development by driving the excessive growth and division of cells, often due to mutations that alter their normal function.**

**What is the primary characteristic of cancer cells?**

- A. Controlled cell division
- B. Uncontrolled cell division ✓**
- C. Decreased cell division
- D. Cell death

**What are the ethical considerations involved in conducting clinical trials for new cancer treatments?**

**Key ethical considerations include ensuring informed consent from participants, conducting a thorough risk-benefit analysis to justify the trial, prioritizing patient safety throughout the study, and ensuring equitable selection of participants to avoid exploitation.**

**Discuss the impact of genetic predisposition on cancer risk and prevention strategies.**

**Genetic predisposition affects cancer risk by increasing the likelihood of developing specific cancers based on inherited mutations, such as BRCA1 and BRCA2 for breast and ovarian cancer. Prevention strategies may include regular screenings, lifestyle modifications, and prophylactic surgeries for those at high risk.**

**Which factors are considered lifestyle and environmental risk factors for cancer? (Select all that apply)**

- A. Smoking ✓**
- B. High-fat diet ✓**
- C. Radiation exposure ✓**
- D. Genetic mutations

**Which of the following are common types of genetic mutations involved in cancer? (Select all that apply)**

- A. Point mutations ✓**
- B. Deletions ✓**
- C. Insertions ✓**

**D. Translocations ✓**

**Which screening method is commonly used for early detection of breast cancer?**

- A. Colonoscopy
- B. MRI
- C. Mammography ✓**
- D. Biopsy

**What is the primary purpose of angiogenesis in cancer?**

- A. To spread cancer cells
- B. To provide nutrients to tumors ✓**
- C. To destroy cancer cells
- D. To activate immune response

**Which of the following are common side effects of chemotherapy? (Select all that apply)**

- A. Hair loss ✓**
- B. Increased appetite
- C. Nausea ✓**
- D. Immunosuppression ✓**

**What does the 'M' in the TNMG cancer staging system stand for?**

- A. Metastasization ✓**
- B. Mutation
- C. Mitosis
- D. Mortality

**Which gene is commonly known as the 'guardian of the genome'?**

- A. RAS
- B. MYC
- C. p53 ✓**
- D. BRCA1

**Which of the following are characteristics of malignant tumors? (Select all that apply)**

- A. Slow growth
- B. Invasive ✓**
- C. Non-invasive
- D. Metastatic potential ✓**

**Which of the following is a targeted therapy drug for breast cancer?**

- A. Herceptin ✓**
- B. Tamoxifen
- C. Methotrexate
- D. Cisplatin

**Explain the process of metastasis and its significance in cancer progression.**

**Metastasizing involves several steps: cancer cells invade surrounding tissues, enter the bloodstream or lymphatic system, travel to distant sites, and establish new tumors. This process is crucial in cancer progression as it indicates a more advanced stage of the disease, often leading to increased morbidity and mortality.**

**Which of the following are recent advances in cancer treatment? (Select all that apply)**

- A. CRISPR technology ✓**
- B. Radiation therapy
- C. CAR-T cell therapy ✓**
- D. Personalized medicine ✓**

**Which of the following are roles of tumor suppressor genes? (Select all that apply)**

- A. Promote cell division
- B. Repair DNA damage ✓**
- C. Induce apoptosis ✓**
- D. Inhibit cell cycle progression ✓**