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# List of Courses for the AY 2019-20

S. No	Name of the Course
1	The Future of Personalized Medicine
2	Importance of Nutraceuticals and Functional Foods for a Healthy Life
3	QSAR in Environmental Chemistry & Toxicology
4	Emerging Trends in Pharmaceutical Analysis
5	Evidence based Medicines and Guidelines for Pharmacist

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## Value Added Course on "Smart and Responsive Drug Delivery Systems: The Future of Personalized Medicine"

### **Course Assessment**

Time: 10 mins

Marks: 10

## Please tick the right answer:

# 1. A key advantage of smart and responsive drug delivery systems over conventional methods is:

- (a) Reduced dosage frequency
- (b) Lower production cost
- (c) Broader range of treatable diseases
- (d) Enhanced patient compliance

## 2. Which of the following materials is commonly used in the fabrication of stimuliresponsive drug carriers?

- (a) Stainless steel
- (b) Polyvinyl chloride
- (c) Polymeric hydrogels
- (d) Glass

## 3. The concept of personalized medicine in drug delivery involves:

- (a) Tailoring treatment to individual patient characteristics
- (b) Utilizing a one-size-fits-all approach
- (c) Focusing on preventative measures
- (d) Administering medication through intravenous routes

## 4. A potential challenge associated with smart drug delivery systems is:

- (a) High efficacy and bioavailability
- (b) Complex design and manufacturing processes
- (c) Lack of long-term stability
- (d) Rapid drug release kinetics

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# 5. Which of the following external stimuli can trigger the release of drugs from smart carriers?

- (a) Changes in temperature
- (b) Variations in pH
- (c) Ultrasound waves
- (d) All of the above

## 6. Implantable microfluidic devices used in drug delivery systems offer the advantage of:

- (a) Continuous and controlled drug administration
- (b) Non-invasive monitoring of therapeutic effects
- (c) Reduced systemic side effects
- (d) All of the above

## 7. The integration of nanotechnology in smart drug delivery systems holds promise for:

- (a) Targeting specific cells and tissues
- (b) Enhanced drug penetration across biological barriers
- (c) Improved drug solubility and stability
- (d) All of the above

## 8. One of the ethical considerations surrounding personalized medicine in drug delivery is:

- (a) Increased accessibility and affordability
- (b) Potential for discrimination based on genetic data
- (c) Lack of standardized treatment protocols
- (d) Overreliance on technological solutions

## 9. The future of smart and responsive drug delivery systems likely involves:

- (a) Development of closed-loop feedback systems for real-time monitoring
- (b) Integration with artificial intelligence for personalized treatment optimization
- (c) Fabrication of biocompatible and biodegradable drug carriers
- (d) All of the above

# 10. Your understanding of the potential benefits and challenges of smart and responsive drug delivery systems can contribute to:

- (a) Improved patient outcomes and healthcare efficiency
- (b) Advancement of pharmaceutical research and development
- (c) Personalized treatment options for a wider range of diseases
- (d) All of the above

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Feel free to adapt these questions based on the specific focus and content of your Value- Added course.

Answers for the multiple choice questions

Question	1	2	3	4	5	6	7	8	9	10
Answer	a	с	a	b	d	а	d	b	d	d



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## Value added course on "Importance of Nutraceuticals and Functional Foods for a Healthy Life"

Time: 10 min

**Course Assessment** 

Marks: 10

# **1.**Which of the following statements is true regarding the consumption of nutraceuticals and functional foods?

- a) They are a substitute for medical treatments prescribed by doctors.
- b) They can be consumed without any consideration for one's existing diet or lifestyle.
- c) They are intended to complement a balanced diet and healthy lifestyle.
- d) They are only beneficial for individuals with specific medical conditions.

# 2. Which of the following nutrients is commonly found in nutraceuticals and functional foods due to its potential health benefits?

- a) Sodium
- b) Trans fats
- c) Omega-3 fatty acids
- d) High-fructose corn syrup

# **3.**How do nutraceuticals and functional foods differ from conventional pharmaceutical drugs?

- a) They require a prescription from a licensed physician.
- b) They often have fewer side effects and are derived from natural sources.
- c) They are regulated more strictly by governmental health agencies.
- d) They are typically more expensive than pharmaceutical drugs.

# 4. Which of the following is an example of a functional food that has been associated with improving digestive health?

- a) Green tea
- b) Probiotic yogurt
- c) Fried chicken
- d) Chocolate chip cookies

# **5.** What is one potential drawback of relying solely on nutraceuticals and functional foods for health benefits?

- a) They are readily available and inexpensive.
- b) They may lack scientific evidence to support their claimed health benefits.
- c) They can replace the need for regular physical activity.
- d) They are usually high in added sugars and unhealthy fats.

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#### 6. Which of the following best describes nutraceuticals?

- a) Foods that are genetically modified for enhanced nutritional value
- b) Pharmaceuticals derived from natural food sources
- c) Foods that provide both nutritional and medicinal benefits
- d) Foods fortified with artificial additives for taste enhancement

### 7. What distinguishes functional foods from regular foods?

- a) Functional foods are always organic.
- b) Functional foods contain added synthetic chemicals.
- c) Functional foods provide specific health benefits beyond basic nutrition.
- d) Functional foods are always more expensive than regular foods.

#### 8. How do nutraceuticals contribute to a healthy lifestyle?

- a) By providing essential nutrients for growth and development
- b) By preventing and managing chronic diseases
- c) By promoting rapid weight loss
- d) By enhancing the taste of food

#### 9. Which of the following is an example of a functional food?

- a) Plain white rice
- b) Blueberries, known for their high antioxidant content
- c) Sugary carbonated drinks
- d) Deep-fried potato chips

## 10. Nutraceuticals and functional foods are primarily consumed for:

- a) Providing energy
- b) Enhancing physical appearance
- c) Improving overall health and wellness
- d) Indulging in taste sensations

Feel free to adapt these questions based on the specific focus and content of your Value- added course.

#### Answers:

1	2	3	4	5	6	7	8	9	10
с	c	b	b	b	a	a	b	b	с

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## Certificate Course on "QSAR in Environmental Chemistry and Toxicology"

#### Course Assessment

Time: 10 mins

Marks: 10

## Please tick the right answer:

Quiz Questions

## 1).What does QSAR stand for in the context of environmental chemistry and toxicology?

- a) Quality Standard and Assessment Review
- b) Quantitative Structure-Activity Relationship
- c) Quick Survey of Aquatic Resources
- d) Quantitative Study of Atomic Reactions

## 2).Which of the following is a primary goal of QSAR modeling?

a) To predict the biological activity or chemical properties of compounds based on their chemical structure.

- b) To determine the exact chemical composition of a substance.
- c) To analyze the qualitative data of chemical reactions.
- d) To study the history of chemical compounds.

## 3).What are 'descriptors' in QSAR analysis?

- a) Laboratory equipment used in chemical analysis.
- b) Mathematical representations of molecular properties that affect biological activity.
- c) Legal documents describing chemical safety guidelines.
- d) Databases of chemical compound structures.

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## 4).In QSAR, what is meant by the term 'activity'?

- a) The energy level of a chemical reaction.
- b) A measure of a compound's effect (e.g., biological or environmental).
- c) The concentration of a chemical in a given area.
- d) The physical state of a chemical compound.

## 5).Which type of QSAR model uses three-dimensional information about molecular structures?

- a) 1D-QSAR
- b) 2D-QSAR
- c) 3D-QSAR
- d) 4D-QSAR

## 6).What role does statistical analysis play in QSAR modeling?

- a) To design the laboratory experiments for chemical synthesis.
- b) To analyze and interpret the relationship between descriptors and activity.
- c) To determine the pricing of pharmaceutical products.
- d) To assess the environmental impact of chemical waste.

## 7). Which of the following is a common application of QSAR in environmental toxicology?

- a) Predicting the toxicity of new chemical compounds.
- b) Calculating the market value of pharmaceuticals.
- c) Determining the color of a chemical compound.
- d) Measuring the temperature at which a chemical reacts.

## 8).How can QSAR models contribute to the field of drug design?

- a) By predicting the potential environmental impact of new drugs.
- b) By aiding in the prediction of side effects and toxicity of new drugs.
- c) By determining the branding strategy for new drugs.
- d) By predicting the exact molecular weight of new drugs.

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## 9).What is the importance of the 'validation' step in QSAR modeling?

- a) To ensure the accuracy and predictability of the QSAR model.
- b) To confirm the chemical formula of the compounds being studied.
- c) To validate the laboratory equipment used in experiments.
- d) To approve the sale of pharmaceutical products.

#### 10)In QSAR, 'hydrophobicity' is often an important descriptor. What does it refer to?

- a) The compound's ability to dissolve in water.
- b) The compound's ability to react with oxygen.
- c) The electrical charge of a compound.
- d) The compound's odor or scent.

#### Answers:

1 b) Quantitative Structure-Activity Relationship

2 a) To predict the biological activity or chemical properties of compounds based on their chemical structure.

- 3 b) Mathematical representations of molecular properties that affect biological activity.
- 4 b) A measure of a compound's effect (e.g., biological or environmental).

## 5 c) 3D-QSAR

- 6 b) To analyze and interpret the relationship between descriptors and activity.
- 7 a) Predicting the toxicity of new chemical compounds.
- 8 b) By aiding in the prediction of side effects and toxicity of new drugs.
- 9 a) To ensure the accuracy and predictability of the QSAR model.
- 10 a) The compound's ability to dissolve in water.

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## Value Added Course on "Emerging trends in Pharmaceutical analysis" <u>Course Assessment</u>

Time: 10 mins

Marks: 10

## Please tick the right answer:

## 1. What is the primary goal of miniaturization and automation in pharmaceutical analysis?

- A. To increase the size of analytical instruments
- B. To reduce the efficiency of analytical processes
- C. To enhance the speed and efficiency of analytical processes
- D. To complicate the analytical workflow

# 2. Which analytical technique is commonly integrated with miniaturization and automation in pharmaceutical analysis?

- A. Manual titration
- B. High-Performance Liquid Chromatography (HPLC)
- C. Conventional microscopy
- D. Manual sample preparation

## 3. How does High-Throughput screening contribute to drug discovery efficiency?

- A. By reducing the number of compounds screened
- B. By increasing the time required for compound evaluation
- C. By allowing simultaneous testing of numerous compounds
- D. By limiting the diversity of chemical libraries

## 4. Why is precision crucial in pharmaceutical analysis using Mass Spectrometry?

- A. To introduce variability in measurements
- B. To complicate the identification process
- C. To improve the accuracy of quantification and ensure reliable results
- D. To limit the sensitivity of the analytical method

# 5. Why is the determination of drugs and biological molecules in biological samples essential in bioanalytical chemistry?

- A. To introduce variability in results
- B. To limit the application of analytical techniques
- C. To study the effects of drugs on geological samples
- D. To understand pharmacokinetics, pharmacodynamics, and biomarker analysis in the human body

## 6. Which of the following is a key application of omics technologies in drug research?

- A. Increasing ambiguity in data interpretation
- B. Reducing the need for high-throughput screening
- C. Profiling changes in the entire set of relevant molecules in response to drug exposure
- D. Minimizing the role of computational analysis in pharmacogenomics

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### 7. What is the primary goal of microbiology analysis in pharmaceuticals?

- A. To increase microbial contamination
- B. To ignore quality control measures
- C. To ensure the safety and quality of pharmaceutical products
- D. To limit the scope of quality assurance practices

#### 8. Why is the analysis of natural products crucial in drug discovery?

- A. To limit the diversity of chemical structures
- B. To increase the cost of drug development
- C. To understand the therapeutic potential of compounds from natural sources
- D. To discourage the exploration of traditional medicine
- 9. Why is the exploration of natural products essential in drug discovery and development?
- A. To discourage the use of traditional medicinal practices
- B. To limit the variety of chemical structures for drug development
- C. To identify novel bioactive compounds with therapeutic potential
- D. To decrease the reliance on modern pharmaceutical approaches

#### 10. How do analytical techniques contribute to forensic pharmaceutical investigations?

- A. By increasing the complexity of crime scene analysis
- B. By limiting the role of chemistry in investigations
- C. By providing scientific evidence and insights into pharmaceutical-related crimes
- D. By ignoring the importance of analytical methods

Feel free to adapt these questions based on the specific focus and content of your certificate course.

Answers for multiple choice questions:

Question	1	2	3	4	5	6	7	8	9	10
Answer	C	В	C	C	D	C	C	C	C	C

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## Value Added Course on "Evidence based Medicines and Guidelines for Pharmacist" <u>Course Assessment</u>

Time: 10 mins

Marks: 10

## Please tick the right answer:

## 1) What is the primary objective of Evidence-Based Medicine (EBM)?

- a. To rely solely on clinical experience
- b. To base medical decisions on the best available evidence
- c. To prioritize traditional practices over scientific evidence
- d. To ignore research findings in clinical practice

## 2) Which of the following is a key component of understanding research methodologies?

- a. Memorization of study results
- b. Recognizing the importance of biases
- c. Ignoring the study design
- d. Avoiding critical appraisal

## 3) What is an essential skill in conducting effective literature searches?

- a. Limiting searches to a single database
- b. Relying solely on textbooks
- c. Utilizing online databases and resources
- d. Avoiding hands-on practice in literature searches

## 4) Why is critical appraisal of research articles important?

- a. To memorize study findings
- b. To evaluate study validity and identify biases
- c. To skip the review process
- d. To prioritize personal opinions over evidence

# 5) What was the main focus of the guest lecture on the application of EBM in pharmacy practice?

- a. Ignoring evidence-based practices
- b. Highlighting recent trends in pharmacy
- c. Providing real-world examples of EBM implementation
- d. Promoting traditional pharmacy practices

## 6) How can EBM be integrated into pharmacy practice?

- a. By avoiding critical thinking
- b. By solely relying on clinical experience
- c. By applying evidence-based guidelines
- d. By disregarding research findings

## 7) What was the purpose of the group project in the workshop?

- a. To avoid teamwork and collaboration
- b. To develop project management skills
- c. To discourage practical application of learned concepts
- d. To exclude hands-on experience

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#### 8) Why is effective presentation important in pharmacy practice?

- a. To confuse the audience
- b. To communicate complex information clearly
- c. To ignore project findings
- d. To avoid peer evaluation

#### 9) What are clinical practice guidelines?

- a. Outdated medical practices
- b. Evidence-based recommendations for clinical practice
- c. Irrelevant to pharmacy practice
- d. Solely based on personal opinions

## 10) Why is staying informed about current trends in Evidence-Based Pharmacy crucial?

- a. To discourage innovation
- b. To avoid challenges in the field
- c. To stay abreast of emerging practices and technologies
- d. To exclude recent developments

Feel free to adapt these questions based on the specific focus and content of your Value-Added course.

Answers for the multiple choice questions

Question	1	2	3	4	5	6	7	8	9	10
Answer	b	b	с	b	с	с	b	b	b	с

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