

## Unit 4 - Week 2

### Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

Standards of medical device, quality assurance & testing

Regulatory requirements of biocompatibility of medical devices and ISO 10993

Clinical investigation of medical devices, regulation of investigational medical devices

Quiz : Assignment 2

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## Assignment 2

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

**Due on 2020-02-12, 23:59 IST.**

Dear Participants,

This entire four-week course is split into 12 lectures (3 lectures every week)  
This week we have covered 3 lectures.

They were:

**Lecture 4:** Standards of medical device, quality assurance, and testing  
**Lecture 5:** Regulatory requirements of biocompatibility of medical devices and ISO 10993  
**Lecture 6:** Clinical investigation of medical devices: regulation of investigational medical devices

**Lecture 4: Standards of medical device, quality assurance, and testing**  
In this lecture, we discussed all the standards agencies across the world. We also discussed the standards situation in India. The lecture covered the preparation of standards process in India as well as the process followed by developed economies in case of standard. We briefly covered quality assurance, testing methodology in development and release as well as usual tests carried out by the manufacturer or notified bodies for medical devices evaluation.

**Lecture 5: Regulatory requirements of biocompatibility of medical devices and ISO 10993**

In this lecture, we learned what is biocompatibility? We also understood the biological evaluation procedures within the risk management process. The lecture also covered the characterization of medical devices and test selection. Standards of biocompatibility tests - ISO 10993 was discussed in brief. All the general principles being applied to the biological evaluation of medical devices were covered in this lecture.

**Lecture 6: Clinical investigation of medical devices: regulation of investigational medical devices**

In this lecture, we learned that clinical trials of medical devices is not the same as that of new drugs (phytopharmaceuticals, vaccines, etc.). There is no Phase I, II and III studies in medical devices. We also studied various requirements for clinical investigation as per the Medical Devices Rules, 2017 in this lecture.

**Best of luck for completing the assignment 2!**

1) Which is NOT an example of biomaterials application in medical devices. **2 points**

- Bone plates  
 Bone cements  
 Bone joints  
 Artificial ligaments and tendons

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Bone joints*

2) Fill in the blanks. **2 points**

\_\_\_\_\_ is the ability of a device material to perform with an appropriate host response in a specific situation or a measurement of how compatible a device is with a biological system.

- Bioavailability  
 Bioequivalence  
 Biological evaluation  
 Biocompatibility

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Biocompatibility*

3) Fill in the blanks. **2 points**

\_\_\_\_\_ is a device or a device component that includes all manufacturing processes including packaging and sterilization.

- Final Finished Form  
 Finished Form  
 Final Form  
 None of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Final Finished Form*

4) Biocompatibility standards that can be used to facilitate information submission to the regulator is/are: **2 points**

- ISO 10993-1 and related 10993 series of standards  
 ASTM, ICH, OECD, and Pharmacopoeial biocompatibility standards  
 Both of the above  
 None of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Both of the above*

5) \_\_\_\_\_ is a device, first time and first of its kind, approved for manufacture for sale or for import by the Central Licensing Authority and has the similar intended use, material of construction, and design characteristics as the device which is proposed for licence in India. **2 points**

- Investigational medical device  
 Investigational IVD  
 Modified device  
 Predicate device

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Predicate device*

6) Amount of fees (Indian Rupees) to be paid for seeking permission to conduct pilot clinical investigation is \_\_\_\_\_ and to conduct pivotal clinical investigation is \_\_\_\_\_. **2 points**

- 50, 000; 1,00,000  
 50,000; 75,000  
 75,000; 75,000  
 1,00,000; 1,00,000

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*1,00,000; 1,00,000*

7) A small number of medical devices for personal use can be imported and the application by the patient needs to be made in \_\_\_\_\_ along with the prescription from a registered medical practitioner. **2 points**

- MD-18  
 MD-19  
 MD-20  
 MD-21

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*MD-20*

8) What is the document(s) necessary for seeking a grant of permission to conduct a clinical investigation? **2 points**

- Investigator's undertaking  
 Ethics Committee approval  
 Regulatory Status in other countries  
 All of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*All of the above*

9) Which of the option is correct. **2 points**

Statement 1: Medical device testing should not be compared with the testing of drugs,  
Statement 2: Drugs are tested destructively. This means that the drugs actually tested cannot be used.

- Statement 1  
 Statement 2  
 Both Statement 1 and 2 are incorrect  
 Both Statement 1 and 2 are correct

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Both Statement 1 and 2 are correct*

10) Standard testing procedures may not be applied for the medical device testing due to large number of \_\_\_\_\_ and \_\_\_\_\_. **2 points**

- Variables; Models  
 Complexities; Procedures  
 Patients; Institutions  
 None of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Variables; Models*