



## **SUBJECTS FOR THE COMPETITION TO OCCUPY THE VACANT POSITION OF PROFESSOR, POSITION 36**

**Position 36, Professor:** Industrie du médicament et biotechnologies pharmaceutiques (FFR, V), Cosmetic and pharmaceutical industry (CM, III), Elements of industrial pharmaceutical technology (ASF-L, III)

1. Introduction. Brief history of the pharmaceutical industry
2. Management of the medicines' industrial production
3. Conception, production and transfer of a medicine to the pilot phase
4. Development and characteristics of the drug industry
5. Drug synthesis tactics and strategy
6. Factors involved in drug quality
7. Equipment qualification and validation of manufacturing processes
8. Good manufacturing practices and evaluation of pharmaceutical products on an industrial scale
9. Classification and evaluation of composition and process variations for industrial pharmaceutical products
10. Notions related to pharmaceutical quality design and analysis
11. Technological processes in pharmaceutical industry
12. Types of materials used in the pharmaceutical industry
13. Materials used in the drug conditioning process
14. Materials used in the construction of machineries employed in the pharmaceutical industry
15. Basics of biotechnology. Introduction, terminology, importance of the field
16. Classification of biotechnologies
17. Microbial biotechnologies - generalities, applications
18. Fermentative biotechnologies. General aspects related to fermentative biotechnologies
19. Genetic biotechnologies. General information
20. Recombinant DNA technology
21. Innovative biotechnologies
22. Genomics, personalized medicine and additional techniques related to biotechnology
23. Regulations and standards in the cosmetic industry
24. Business development for the biotechnology and pharmaceutical industry
25. Drug approvals from the perspective of molecules

### **References:**

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2. C. Dăescu, Produse de bio și semisinteză, Ed. Politehnica, Timișoara, 2006
3. Jurcoane S., Cornea P., Stoica I., Vassu T., Tratat de biotehnologie, vol. II, Ed. Tehnica, București, 2006



4. Andrieș A.A., Popovici I., Lupuleasa D., *Tehnologie farmaceutica*, volum 3, Ed. Polirom, 2017.
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8. Majhi, S., & Das, D. (2021). Chemical derivatization of natural products: semisynthesis and pharmacological aspects-A decade update. *Tetrahedron*, 78, 131801. <https://doi.org/10.1016/j.tet.2020.131801>
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10. Austin, M. (2016). Business development for the biotechnology and pharmaceutical industry. Routledge. <https://gmpua.com/Management/BDBiotechnology.pdf>
11. Walsh, G. (2013). *Pharmaceutical biotechnology: concepts and applications*.
12. De la Torre, Beatriz G., and Fernando Albericio. "The pharmaceutical industry in 2017. An analysis of FDA drug ap-provals from the perspective of molecules." *Molecules* 23.3 (2018): 533. <https://doi.org/10.3390/molecules23030533>
13. DE LA TORRE, Beatriz G.; ALBERICIO, Fernando. The pharmaceutical industry in 2019. An analysis of FDA drug approvals from the perspective of molecules. *Molecules*, 2020, 25.3: 745. <https://doi.org/10.3390/molecules25030745>
14. DE LA TORRE, Beatriz G.; ALBERICIO, Fernando. The pharmaceutical industry in 2016. An analysis of FDA drug approvals from a perspective of the molecule type. *Molecules*, 2017, 22.3: 368.
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16. PETERS, Sheila Annie. *Physiologically based pharmacokinetic (PBPK) modeling and simulations: principles, meth-ods, and applications in the pharmaceutical industry*. John Wiley & Sons, 2021.
17. Drug industry course for the 5th year students – annually revised
18. Grasso, L. L., Martino, D. C., & Alduina, R. (2016). Production of antibacterial compounds from Actinomycetes. *Ac-tinobacteria-basics and biotechnological applications*, 214(11), 272-282. <http://dx.doi.org/10.5772/61525>

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