

KATHMANDU UNIVERSITY
End Semester Examination
March/April, 2022

Level : B.Pharm.
Year : IV
Time : 2 hrs. 30 mins.

Course : PHAR 414
Semester: II
F.M. : 55

Note: Check (✓) the number of each question you have answered in the front page of main answer book (of Sections B, C and D).

SECTION "B"
[5Q × 3 = 15 marks]

Answer ANY FIVE questions.

1. How you can control cost in pharma industries?
2. What do you mean by "pressure cascade" in pharma industries? Describe with a layout diagram. Why it is important?
3. What do you mean "work study" and "method study"? Write down stepwise procedure of "method study".
4. Why ophthalmic preparations are made sterile? How long can you use your eye drop after its opening? Give your reason.
5. Explain the various mechanisms by which the core material is released from microcapsules.
6. What are the formulation requirements of injectables given via subcutaneous route?
7. What is Enhanced Permeability and Retention effect?

SECTION "C"
[5Q × 5 = 25 marks]

Answer ANY FIVE questions.

8. Why HVAC is required in Pharmaceutical industries? What happens if it fails to function normally?
9. What are required for "Pilot Plant Scale up"? And why?
10. What are fluid pollutants produced by Pharma industries? How to treat them?
11. How you can prepare microcapsules by non-solvent addition? Explain.
12. How antisense therapy cause specific inhibition of gene expression? Explain.
13. Write in detail about the different evaluation tests that are required to perform for small volume parenteral preparations.
14. What are polymers? How drugs are released from polymeric system?

SECTION "D"
[2Q × 7.5 = 15 marks]

Answer *ANY TWO* questions.

15. "Pilot plant scale up is a team work". Justify this statement.
16. What are the various factors that can decrease absorption of drugs instilled in conjunctival sac? What considerations that you will make in your formulation to increase the drug absorption? Explain with suitable examples.
17. What makes retrovirus a suitable vector for delivery of therapeutic gene? How retrovirus is constructed as a vector? How does it deliver therapeutic genes?

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Mark scored:

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Registration No.:

SECTION "A"
[20Q × 1 = 20 marks]

Encircle the most appropriate option.

- filter is having the lowest filtration efficiency
 - HEPA
 - Primary panel
 - Secondary pane
 - Ternary
- The air velocity of horizontal laminar air flow as per WHO is meter/sec.
 - 0.25
 - 0.30
 - 0.45
 - 0.5
- Equipment that come in contact with injectables need to be final rinsed withwater.
 - Highly purified
 - Potable
 - Purified
 - Water for injection
- is not inventory
 - Finished product
 - Granules for compression
 - Starch for tablet manufacturing
 - Tablet compression machine
- Organize training to sales personnel.
 - Production pharmacist
 - Quality assurance manager
 - Quality control pharmacist
 - Sales manager
- Production schedule is based on
 - Equipment, people and other facility
 - Inventories
 - Sales forecast
 - Sales quota
- is used to forecast sale of electrolyte
 - Moving averaging
 - Weighted averaging
 - Sales composite
 - Simple averaging
- Number of sales in January, February and March is 25, 35, 50 respectively. Sales forecast for April using 3 months average moving is
 - 65
 - 77
 - 85
 - 110
- 5 Ms of pilot plant scale up are Money, and machine.
 - management, man, method
 - management, man, motion
 - material, man, motion
 - material, man, method

10. In the outline (operation) process chart, the following symbols are used:
 - a. Inspection and transportation
 - b. Operation and inspection
 - c. Operation and storage
 - d. Operation and transportation
11. Which of the following ophthalmic dosage form can show highest systemic side effects?
 - a. Injections
 - b. Ointments
 - c. Solutions
 - d. Suspensions
12. Stroma layer significantly decrease transport of..... substance.
 - a. Both lipophilic and hydrophilic
 - b. Hydrophilic
 - c. Lipophilic
 - d. Lyophilic
13. Which among the following products is **NOT** an example of sterile product?
 - a. Dialysis fluid concentrate
 - b. Irrigating solutions
 - c. Live attenuated virus vaccine
 - d. Water for injection
14. Which is **NOT** suitable for minimizing antioxidants in parenteral preparations?
 - a. Manufacturing under a nitrogen
 - b. Purging filled vials with gas
 - c. Deoxygenation of vehicle
 - d. Using suitable pH
15. Which of the following is not involved in the physical method of microencapsulation?
 - a. Centrifugal extrusion
 - b. Electrostatic deposition
 - c. Ionotropic gelation
 - d. Spray-drying
16. Which of the following is **NOT** used as a coating material in microencapsulation?
 - a. Cellulose acetate butyrate
 - b. Gelatin
 - c. Methyl Cellulose
 - d. Sodium sulfate
17. In gene augmentation approach,
 - a. An abnormal gene repaired through selective reverse mutation.
 - b. An abnormal gene traded for a normal gene.
 - c. A normal gene inserted to compensate for a nonfunctional gene.
 - d. Change the regulation of gene pairs
18. Coxsakievirus and adenovirus receptor (CAR) are.....
 - a. Fiber based protein in virus surface
 - b. Present in cell surface of host cell
 - c. Present in surface of virosomes
 - d. Viral vector
19. Zero order release kinetics is attained in
 - a. Osmotic pumps
 - b. Enteric coating
 - c. Pulsed release
 - d. Sustained release
20. Rate determining step for controlled release delivery system is
 - a. Absorption rate
 - b. Drug diffusion rate
 - c. Drug dissolving rate
 - d. Drug release from dosage form