

KATHMANDU UNIVERSITY
End Semester Examination
June/July 2024

Marks Scored:

Level : B.Pharm.
Year : IV

Course : PHAR 414
Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date

07 JUL 2024

SECTION "A"

[20Q. × 1 = 20 marks]

Choose and encircle the most appropriate option from each set of choices.

1. _____ is not inventory.
a. Granules for compression
b. Finished product
c. Tablet Compression machine
d. starch for tablet manufacturing
2. _____ organize training to sales personnel
a. Quality Assurance manager
b. Quality control pharmacist
c. Sales manager
d. Production pharmacist
3. Production schedule is based on _____
a. Sales quota
b. Sales forecast
c. Inventories
d. equipment, people and other facility
4. _____ is used to forecast sale of electrolyte
a. simple averaging
b. moving averaging
c. sales composite
d. weighted averaging
5. Number of sales in Jan, Feb and March is 25, 35, 50 respectively. Sales forecast for April using 3 months average moving is _____
a. 77
b. 65
c. 110
d. 85
6. HVAC prevents _____
a. Contamination
b. Cross-contamination
c. a & b
d. contamination by people
7. About _____ % fresh air is mixed with recirculated air in HVAC.
a. 85
b. 5
c. 15
d. 50
8. _____ filter is having the lowest filtration efficiency
a. Primary
b. Secondary
c. HEPA
d. Ternary
9. _____ is not a scale-up process
a. Laboratory to pilot-scale
b. Pilot-scale to industrial-scale
c. Industrial to pilot-scale
d. Laboratory to industrial-scale

10. The abbreviation, EOQ stands for _____
a. Economy order quantity b. Environmentally operational quality
c. Efficient operational Qualifier d. Ergonomic office quality
11. Which among the following test is NOT essential for sterile solution?
a. Particulate b. Pyrogen c. Sterility d. Viscosity
12. Which among the following parenteral product requires preservatives?
a. Large volume b. Multi dose c. Single dose d. Small volume
13. Which among the following method of microencapsulation does not use heat?
a. Coating pan b. Non solvent addition
c. Solvent evaporation d. Spray drying
14. Which among the following is an example of microcapsule?
a. Liposome b. Micelles c. Microspheres d. Niosome
15. Cornea is thinnest near _____
a. Iris b. Sclera c. Conjunctiva d. Pupil
16. Particle size of suspension is recommended to be maintained at _____
a. < 5 um b. <10 um c. <15 um d. < 20 um
17. Which among the following is an example of delayed release tablet?
a. Enteric coated b. Extended-release c. Immediate release d. Sustained-release
18. _____ is the most hydrophobic polymer
a. Ethyl cellulose b. Hydroxy propyl methyl cellulose
c. Methyl cellulose d. Poly ethylene glycol
19. _____ is an example of non-viral vector.
a. DNA Virus b. Dendrimers c. Polyethylene d. RNA virus
20. RNA induced silencing complex is involved in _____ therapy
a. Antisense b. siRNA c. Ribozyme d. Retrovirus

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Semester : II

F. M. : 55

Check (✓) the number of each question you have answered in the front page of main answer book

SECTION "B"

[5 Q. × 3 = 15 marks]

Attempt *ANY FIVE* questions.

1. Make a outline/operation process chart and process flow chart of tablet manufacturing process.
2. Differentiate between "Line product layout" & "functional or process layout".
3. What are the two main method of work study? What are its objectives?
4. Define "work study and method study. Differentiate between them.
5. What is LAL test? Why is it done?
6. Why controlled drug delivery systems are important? Explain with suitable examples.
7. Write about the various approaches to gene therapy.

SECTION "C"

[5 Q. × 5 = 25 marks]

Attempt *ANY FIVE* questions.

8. Differentiate between "Unit operation" and "Process". Out of followings separate into respective categories (Unit operation & process):
 - a. Tablet manufacturing
 - b. Mixing
 - c. Drying
 - d. Capsule making
 - e. Granulation
 - f. Oral liquid preparation
 - g. Filtration
 - h. Fluid flow
 - i. Sterilization
 - j. Crystallization

P.T.O.

9. What do you understand by 'Material handling' and "transportation"? If you have to transport corrosive and viscous fluid which pump you have to use and why?
10. How does pharmaceutical pollution occur? How can you reduce/control it?
11. What are the key components of Pilot plant scale up? What are the things you need to consider?
12. Why is pH of ophthalmic solutions important to maintain? How is it done?
13. How does Osmotic pumps work? Explain with the help of a suitable figure.
14. Write about the various mechanisms that are used for controlling drug release.

SECTION "D"
[2 Q. × 7.5 = 15 marks]

Attempt *ANY TWO* questions.

15. Draw the schematic diagram of HVAC and mention their components and their function.
16. Write about pharmaceutical applications of microcapsules. Explain how microcapsules are prepared by non-solvent addition base spray method.
17. What is gene therapy? How retro-viral vectors are used for gene therapy?