College of Applied Industrial Technology (CAIT)		كلية التطبيقات الصناعية

Exit Exam Questions Paper (CHET)

Academic Year 2022 – 2023 **(20232 Semester)**

DATE: Wed 8th of Feb 2023 **TIME ALLOWED**: 2 hrs **Phase:** Trial

FULL SCORE Attainable: **25 marks** Exit Exam Preparation and Media Subcommittee

Rubrics for Marking the Exit Exam:

1- Right Choice(s)	1.00 Mark
2- 2 Choices with 1 Wrong Choice	0.75 Mark
3- 3 Choices with 1 Wrong Choice	0.50 Mark
4- 3 Choices with 2 Wrong Choices	0.25 Mark
5- More than 3 Choices	0.00 Mark
6- Wrong Choice(s)	0.00 Mark
7- No Answer	0.00 Mark

Choose the right answer(s) for the following questions using the provided answer sheet:

1. The bottom product of atmospheric pressure crude oil distillation column is termed as
   a) reduced crude
   b) heavy ends
   c) asphalt
   d) residuum

2. The catalyst used in Fluid Catalytic Cracking (FCC) which produces gasoline, olefinic gases, and other petroleum products.
   a) zeolite
   b) matrix, binder
   c) filler
   d) (D) All (a), (b) and (c)

3. Which of the following has the lowest cetane number?
   a) Aromatics
   b) i-paraffins
   c) Naphthene
   d) Olefins

4. What country was the top oil producing country in 2021?
   a) Saudi Arabia
   b) Russia
   c) United States
   d) China

5. Which of the following has a maximum speed?
   a) Light
   b) Air
   c) Sound
   d) Water current

6. The main industrial source of emission of hydrogen sulphide air pollutant is
   a) petroleum refineries
   b) coal based thermal power plants
   c) pulp and paper plant
   d) metallurgical roasting & smelting plant

7. Identify the statement that describes the eco-friendly disposal of municipal solid waste
   a) It should be burnt to completion
   b) It should be dumped in an open wasteland
   c) It should be dumped in sanitary landfills
   d) It should be sorted out into bio-degradable, non- bio-degradable and recyclable wastes and treated separately

8. Cylinders that contain corrosive gases should not be stored for longer than:
   a) 3 months
   b) 6 months
   c) 1 year
   d) 1 week

9. The solid-liquid Extraction process is also known as:
   a) Leaching
   b) Bleaching
   c) Only Extraction
   d) None

10. Which of the following membrane unit operations utilize a pressure driving force to separate a liquid feed into a permeate and retentate?

a) nanofiltration
b) reverse osmosis
c) ultrafiltration
d) All are correct

11. In a distillation unit, the column above the feed tray is called

a) Rectification section
b) Stripping section
c) Condensing Section
d) Re-boiling section

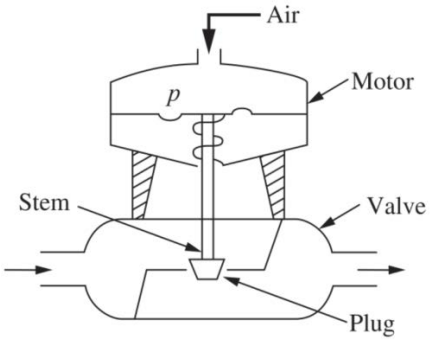
12. If top and bottom purity conditions are known, then which diagram is used to find the number of trays of a distillation column?

a) TXY diagram
b) XY diagram
c) using both TXY and XY diagram
d) None

13. Which feedback system is generally considered as stable system

a) positive feedback
b) negative feedback
c) both are stable
d) both are unstable

14. Using figure determine the type of valve



a) Air-to-open
b) Air-to-close
c) fail-to-open
d) Both (a) and (c) are correct

Don’t answer here – Use the provided Answer Sheet

15. Choose the correct equation of transfer function for PID controller

a) $\frac{P(s)}{\varepsilon(s)} = K_c\left(\tau_D s + \frac{1}{\tau_I s}\right)$

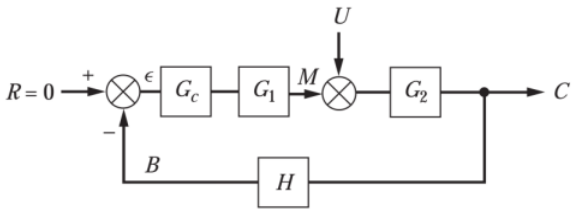
b) $\frac{P(s)}{\varepsilon(s)} = K_c(1 + \tau_D s)$

c) $\frac{P(s)}{\varepsilon(s)} = K_c\left(1 + \tau_D s + \frac{1}{\tau_I s}\right)$

d) $\frac{P(s)}{\varepsilon(s)} = \left(1 + \tau_D s + \frac{1}{\tau_I s}\right)$

16. The overall transfer function for the block diagram is U/C=?

where, G= GcG1G2



a) U/C = G2/(1+GH)

b) U/C = G/(R+GH)

c) U/C = G/(1+H)

d) U/C = G2/(1+G)

17. A general term for a device, which can be a primary element, transmitter, relay, converter or other device, that receives information in the form of one or more physical quantities, modifies the information or its form, or both if required, and produces a resultant output signal.

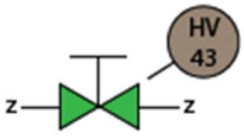
a) Actuator

b) Transducer

c) Pneumatic converter

d) digital converter

18. Recognize the symbol from the given options:



a) Hand controlled valve

b) Fail to closed position

c) Fail locked in last position

d) Drift closed.

Don’t answer here – Use the provided Answer Sheet

19. The following substances can be separated by distillation:

a) Salt and water

b) Methanol and water

c) Sand and water

d) None

20. Which of the following methods are to be applied to separate Oxygen rich components and Nitrogen rich components?

a) Crystallization

b) Zone melting

c) Magnetic separation

d) Distillation

21. Which of the following is the principle of Atomic Absorption Spectroscopy (AAS)?

a) Radiation is absorbed by non-excited atoms in vapour state and are excited to higher states

b) Medium absorbs radiation and transmitted radiation is measured

c) Colour is measured

d) Colour is simply observed

22. In HNMR, Nuclei give rise to identical signals only when they are in the same

a) Chemical environment

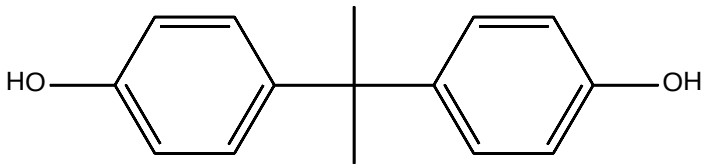
b) Periodic table group

c) Physical state

d) B and C

e) None of the above related to HNMR

23. Predict the *number* of signals for the molecule below:



a) 1

b) 2

c) 3

d) 4

e) 5

Don’t answer here – Use the provided Answer Sheet

24. Fourier's law of heat conduction applies to _____ surfaces.

a) Isothermal

b) Non-isothermal

c) Both (a) and (b)

d) None

25. The unit of thermal conductivity is

a) watt/m^2-K

b) watt/m-K

c) watt/m^2-kg

d) K/m^2-watt

Best Wishes

Don’t answer here – Use the provided Answer Sheet