TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MEDICAL ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MEDICAL ENGINEERING (DME 315 Y2 S2)

EHL 2207: MEDICAL GASES SYSTEMS

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2HOURS

DATE: Pick Date Select Month Pick Year

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FOUR** questions. Attempt any THREE questions.

Do not write on the question paper.

QUESTION ONE

Figure No. 1 Represents a liquid Oxygen plant (VIE).

(i) Label the marked Features

(ii) Explain its operation

(20Marks)

QUESTION TWO

(a) Show by tabulation identification in color and shape for any FOUR medical gases and vacuum at the wall terminal outlet sockets
(12marks)

(b) Describe any FOUR parts of a Permit To Work Document.

(8marks)

QUESTION THREE

(a) With the aid of a sketch describe a medical gases cylinders manifold system.
(15mark)

(b) List any FIVE roles of the authorized person in permit to work procedures
(5Marks)

QUESTION FOUR

(a) Describe the replenishing procedure of an exhausted cylinders manifold bank
(14Marks)

(b) List any SIX prequalification requirements for compressed air to acquire the term **"Medical Air"** (6 Marks)

QUESTION FIVE

(a)

(i) Differentiate between free air capacity and volumetric throughput capacity of a vacuum receiver.

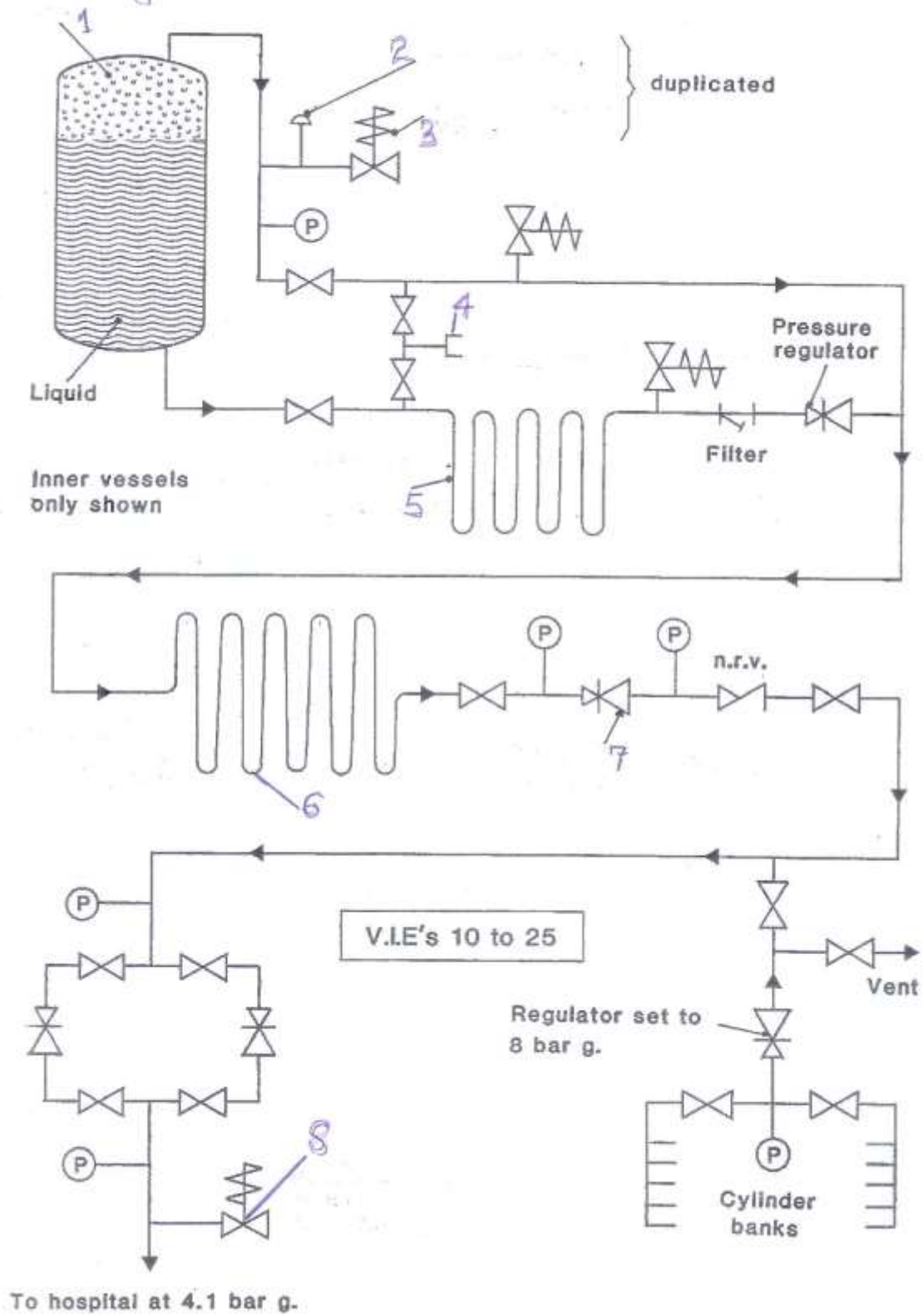
(ii) A vacuum receiver of 300 liters free air capacity is subjected to a vacuum of 400mm/Hg, determine the resultant volumetric throughput capacity.

(8Marks)

(b) Describe any SIX harsh conditions under which an oxygen concentrator should operate as per WHO requirements.

(12 Marks)

Figure No. 1


1
2
3
duplicated
P
4
Pressure regulator
Liquid
Filter
Inner vessels only shown
5
P
P
n.r.v.
7
6
P
V.I.E's 10 to 25
Vent
Regulator set to 8 bar g.
P
8
P
Cylinder banks
To hospital at 4.1 bar g.