

University of Mumbai

Examination 2020 under cluster __ (Lead College: _____)

Examinations Commencing from 23rd December 2020 to 6th January 2021 and from 7th January 2021 to 20th January 2021

Program: Instrumentation Engineering

Curriculum Scheme: Rev2016

Examination: TE Semester V

Course Code:ISC504 and Course Name:Control System Components

Time: 2 hour

Max. Marks: 80

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Device comes after Compressor in Pneumatic system block diagram
Option A:	Dryer
Option B:	Cooler
Option C:	Filter
Option D:	Receiver
2.	Pneumatic System operated on
Option A:	Air
Option B:	Oil
Option C:	Water
Option D:	Chemical
3.	Power source of pneumatic system is

Option A:	Air receiver
Option B:	Compressor
Option C:	Reservoir
Option D:	Separator
4.	In pneumatic instrumentation systems the pressure of compressed air used is around
Option A:	1 bar
Option B:	1.4 bar
Option C:	2.5 bar
Option D:	5.5 bar
5.	Hydraulic System operated on
Option A:	Air
Option B:	Oil
Option C:	Water
Option D:	Chemical
6.	Which of the following is used as an accessory in hydraulic power unit?
Option A:	pumps

Option B:	valves
Option C:	motor
Option D:	reservoir
7.	Standard Current signal is _____
Option A:	4-20mA
Option B:	4-20A
Option C:	3-15mA
Option D:	0-5V
8.	Standard voltage signal is _____
Option A:	4-20V
Option B:	3-15v
Option C:	1-5 v
Option D:	6-9mV
9.	Current transmission is most suitable for ____ distance
Option A:	Short

Option B:	Long
Option C:	Current cannot be transmit
Option D:	Current convert into voltage to transmit every time
10.	The main purpose of a control valve positioner is to:
Option A:	Alter the fail-safe status of the valve
Option B:	Improve the precision of the valve
Option C:	Alter the characterization of the valve Alter the characterization of the valve
Option D:	Increase transmitter accuracy
11.	Dual-ported globe valves typically enjoy the following advantage over single-ported globe valves:
Option A:	Less actuating force required
Option B:	Longer service life
Option C:	Easier disassembly and maintenance
Option D:	Tighter shut-off
12.	What is the function of a butterfly valve?

Option A:	On/ off control
Option B:	Flow regulation
Option C:	Pressure control
Option D:	Hydraulic control
13.	Which of the following valves is better for on/ off control?
Option A:	Ball valve
Option B:	Butterfly valve
Option C:	Plug valve
Option D:	Knife valve
14.	Check valve is also called as _____
Option A:	Non-return valve
Option B:	Gate valve
Option C:	Knife valve
Option D:	Choke valve
15.	What is the purpose of pinch valve
Option A:	Hydraulic control

Option B:	Slurry flow regulation
Option C:	Flow control
Option D:	Regulate fluids
16.	Which of these are used as throttling valves?
Option A:	Butterfly valve
Option B:	Check valve
Option C:	Gate valve
Option D:	Sluice valve
17.	Which valve is most commonly used in house hold applications?
Option A:	Globe valve
Option B:	Gate valve
Option C:	Butterfly valve
Option D:	Check valve
18.	_____ device used for indicating health of process loop
Option A:	Feeder

Option B:	Damper
Option C:	Alarm annunciator
Option D:	Flow regulator
19.	Rupture Disc is _____
Option A:	Non reclosing device
Option B:	Pressure indicator
Option C:	Pressure sensor
Option D:	Pressure transmitter
20.	Temperature Regulator is _____ device
Option A:	Self operating
Option B:	Non Self operating
Option C:	Fast responding
Option D:	Easy to operate
Q2 .A	Solve any Two Questions out of Three 05 marks each
1	Explain the operation of the rupture disc.
2	Draw a neat diagram of ball valve and state its application.
3	Compare pneumatic and hydraulic system

Q2.B	Solve any ONE Questions out of TWO	10 marks each
1.	Explain following valves in details: 1.butterfly valve 2.check valve	
2.	Explain with sketch working of a DP transmitter.	
Q3.A	Solve any Two Questions out of Three	05 marks each
1.	Explain any one type of relay.	
2.	Explain the characteristics of the control valve.	
3.	What is damper and explain any one type of it.	
Q3 .B	Solve any ONE Questions out of TWO	10 marks each
1.	Give a selection criterion for control valve along with important terminology	
2.	Explain relief valve with its application.	