Program: Instrumentation Engineering
Curriculum Scheme: Rev2019
Examination: SE Semester IV
Course Code: ISC405 and Course Name: Control system components
Time: 2 hour Max. Marks: 80
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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Pneumatic system usually do not exceed
Option A:	1 hp
Option B:	1 hp to 2 hp
Option C:	2 hp to 3 hp
Option D:	3 hp to 4 hp
2.	Standard Pneumatic signal is_____
Option A:	3 to 15psi
Option B:	4 to 20 mA
Option C:	1 to 5 v
Option D:	20 psi
3.	Which of the following components is part of a pneumatic air supply system.
Option A:	Alarm annunciator
Option B:	Rupture disk
Option C:	Cooler
Option D:	Safety valve
4.	Which among the following is an advantage of the Pneumatic system?
Option A:	The requirement of a lubricator
Option B:	Runs continuously
Option C:	Use of silencers
Option D:	Low viscosity
5.	Most hydraulic circuits:
Option A:	Operate from a central hydraulic power unit
Option B:	Use air-over-oil power units
Option C:	Have a dedicated power unit
Option D:	Does not have dedicated power unit
6.	When comparing the operating cost of hydraulic systems to pneumatic systems, generally they are.
Option A:	More expensive to operate
Option B:	Less expensive to operate
Option C:	Cost is same to operate
Option D:	Cost is not required
7.	SMART is acronym
Option A:	Specific, Measurable, Attainable, Relevant, and Time-Bound

Option B:	Sharp measurable and remote acess
Option C:	Smart module accurate ranging transmitter
Option D:	Single module auto ranging transmitter
8.	Standard current signal is_____
Option A:	4 to 20 mA
Option B:	25mA
Option C:	1 to 5 mA
Option D:	4 to 20 A
9.	Standard voltage signal is_____
Option A:	1 to 5v
Option B:	50mV
Option C:	10v
Option D:	4 to 20 V
10.	Supply signal range for pneumatic transmitter is
Option A:	20 psi
Option B:	15psi
Option C:	5psi
Option D:	4psi
11.	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
12.	Check valve is also called as _____
Option A:	Non-return valve
Option B:	Gate valve
Option C:	Knife valve
Option D:	Choke valve
13.	What is the purpose of piston valve?
Option A:	Regulate fluids
Option B:	Regulate fluids carrying suspended solids
Option C:	Regulates flow
Option D:	Regulates pressure
14.	What is the other name for the plug valve?
Option A:	Needle valve
Option B:	Slim valve
Option C:	Poppet valve
Option D:	Spool valve
15.	Rupture Disc is_____
Option A:	Non reclosing device
Option B:	Pressure indicator
Option C:	Pressure sensor

Option D:	Pressure transmitter
16.	Temperature Regulator is_____ device
Option A:	Self-operating
Option B:	Non Self operating
Option C:	Fast responding
Option D:	Easy to operate
17.	A relay is used to
Option A:	Break the fault current
Option B:	Sense the fault
Option C:	Sense the fault and direct to trip the circuit breaker
Option D:	Rebuilt the circuit if broken
18.	Over current fault is most likely in
Option A:	Transformer
Option B:	Overhead line equipment
Option C:	Alternator
Option D:	Motors
19.	The contact resistance of a manually operated switch is
Option A:	Zero
Option B:	Very high
Option C:	Very low
Option D:	one
20.	A switch should have
Option A:	High insulation resistance
Option B:	Low insulation resistance
Option C:	Insulation resistance equal to contact resistance
Option D:	Medium insulation resistance
Q2 .A	**Solve any Two Questions out of Three 05 marks each**
1	Explain Single acting and double acting linear actuator.
2	Draw a neat diagram of the Gate valve and state its application.
3	Classify Switches and explain any one of them
Q2.B	**Solve any ONE Questions out of TWO 10 marks each**
1.	Draw a neat diagram of the butterfly valve in detail.
2.	Explain with sketch working of a SMART transmitter.
Q3.A	**Solve any Two Questions out of Three 05 marks each**
1.	Give classification of relay and Draw a diagram for Electromagnetic Relay.
2.	Explain Air to open control valve with diagram
3.	What is square root extractor and explain its application in process

Q3 .B	**Solve any ONE Questions out of TWO** **10 marks each**
1.	Explain control valve terminology and also give classification of control valve
2.	Explain Alarm annunciator along with its characteristics.