QUESTION BANK

Course	B.E Marine Engineering
Batch	B.E (ME) 14
Semester	VII
Subject Code	ME 703
Subject Name	Instrumentation & Control
Part A	
UNIT 1	
1	Define Measurement.
2	Define Manometer.
3	Define Sensor.
4	Define Fluid.
5	Define Transducer.
6	Define Strain Gauge.
7	Define Process Pressure.
8	List the methods for measuring process pressure.
9	List the methods for measuring fluid level.
10	List the methods for measuring fluid flow.
11	List the type of alarms in fluid level measurement.
12	What are the various uses of fluid flow measurement on board?
13	Define pressure transducer.
14	List the types of pressure transducers.
15	Define DP cell.
16	Define oily water interface.
17	State the uses of pressure transducer.
18	Define orifice plate.
19	List the types of manometer.
20	List the methods in direct level measurement.
UNIT 2	
1	Define Torque.
2	Define Viscosity.
3	List the various types of temperature measurement.
4	List the various types of speed measurement.
5	List the various types of torque measurement.
6	List the various types of viscosity measurement
7	Define RTD
8	List the types of pyrometer
9	Define thermistor
10	List the various uses of temperature measurement on board
11	Draw a neat sketch of RTD
12	Define thermocouple
13	Define pyrometers and list the types of pyrometer
14	Write the average viscosity level of fuel oil in main engine and generator engine
15	Define Tacho generator
16	Define Power measurement transmitter
17	State the uses of power measurement transmitter
18	Define pulse measurement
19	Draw the basic layout of thermocouple
20	Define temperature alarm
UNIT 3	
1	Define Salinity
2	State the use of salinity meter on board
3	Define oxygen analyser
4	What is explosive gas detector?
5	What is oil mist detector?
6	Define ODMCS
7	List the methods for oily water measurement
8	Define smoke density meter
9	Write the average salinity value on board

10	Define Measurement
11	List some of the measurement system used on board
12	List some alarms used in measurement system
13	State the use of oxygen analyser
14	What is the use of oily water measurement on board?
15	What is the use of explosive gas detector on board?
16	Define Oil mist
17	What is the use of oil mist detector on board?
18	List some uses of infrared light
19	What is the use of smoke density meter on board?
20	What is the use of alarms in fresh water generator and boiler?
	UNIT 4
1	Define alarm
2	Define trip circuit
3	Define fire alarm
4	Draw a simple fire alarm circuit
5	What is dead man alarm?
6	Define UMS
7	What is UMS alarm?
8	Define signal generator
9	Define pneumatics
10	Define telemetering
11	Define electrical transducers
12	Define electrical receivers
13	List the type of converters on board
14	What is I/P converter?
15	What is P/I converter?
16	What is V.I converter?
17	What is I.V converter?
18	Define converter
19	State the use of pneumatic system onboard
20	Define transducer
	UNIT 5
1	Define Hydraulics
2	Define Calibration
3	List some electrical aspects of hydraulic system
4	What is a solenoid valve?
5	Draw a simple steering gear system
6	List some parts of cargo crane
7	List the different types of pressure
8	Define temperature transducer
9	Define transducer
10	What is level transmitter?
11	List the level equipments
12	Define measurement
13	What is the use of hydraulic systems on board?
14	Define controlled variable
15	What are the characteristics of control valve
16	Define rangeability
17	Give two examples of electrical actuators
18	What is HSS?
19	What is LSS?
20	What is a limit switch?
Part B	
	UNIT 1
1	Define Manometer and explain the types of manometer
2	Write short note on differential pressure cell
3	Write short note on Piezoelectric transducer
4	Define strain gauge and explain the working of strain gauge with neat diagram

5	Write short note on micro silicon wafer pressure transducer
6	State and explain digital pressure transducer
7	Define pressure transducer? State and explain the uses of pressure transducer.
8	Explain the measurement of fluid level by probes and oily water interface
9	Define Transducer and write short note on level sensors.
10	Explain briefly about remote tank level measurement by resistance sensor
11	Write short note on boiler level control by DP Transmitter
12	Explain briefly about flow sensor measurement by orifice plate
13	Write short note on pressure difference by DP cell in fluid flow measurement
UNIT 2	
1	Write short note on temperature measurement
2	Write short note on speed measurement
3	Write short note on torque measurement
4	Write short note on viscosity measurement
5	Explain briefly about RTD with a neat sketch
6	Explain briefly about thermocouple with a neat sketch
7	Explain briefly about thermistor with a neat sketch
8	Explain briefly about tacho generator with a neat diagram
9	Explain briefly about power measurement transmitter
10	Explain briefly about pulse measurement on main engine
11	Explain briefly about fuel oil viscosity measurement for main engine
12	Explain briefly about viscosity control for main engine
13	List the various types of temperature measurement and state the uses of power measurement transmitter
14	Define temperature alarm and the use of temperature measurement on board.
UNIT 3	
1	Write short note on salinity meter
2	Write short note on alarm system in fresh water generator
3	Write short note on boiler and salinity in boiler water
4	Write short note on explosive gas detector
5	Write short note on oil mist detector
6	Write short note on smoke density meter
7	Write short note on oily water measurement
8	Write short note on alarm system in oily water measurement system
9	Define and briefly explain ODMCS
10	Define Measurement and write a short note on oxygen analyser
11	Define Oil mist and write a short note on smoke density meter
12	Define ODMCS and explain the uses of infrared light
13	Define salinity and write short note on oil mist detector
14	Define Oxygen analyser and write a short note on salinity meter
UNIT 4	
1	Write short note on alarm circuits
2	Write short note on trip circuit
3	Draw and explain basic trip circuit
4	Explain the use of alarm and trip circuit on board
5	Write briefly about alarm and trip circuit for various machinery
6	Draw and explain briefly about simple fire alarm
7	Explain briefly about dead man alarm
8	Write short note on generating electrical signals on board
9	Write short note on generating pneumatic signals on board
10	Write short note on telemetering and pneumatic transducers
11	Write short note on pneumatic and electrical transducers
12	Write short note on pneumatic transducers and receivers
13	Write short note on I/P and P/I converters
UNIT 5	
1	Write short note on electrical aspects of various hydraulic systems
2	Write short note on system controlled by solenoid valves
3	Write short note on tanker cargo valve operating system
4	Write short note on cargo cranes
5	Write short note on calibration
6	Write short note on recording of various pressure

7	Explain briefly about temperature transducer
8	Write short note on level transmitter and equipments
9	Define rangeability and give short note on cargo cranes
10	Define controlled variable and draw a neat sketch of stealing gear system
11	Define transducer and explain briefly about temperature transducer
12	Define limit switch and list the parts of cargo crane
13	Define Measurement and explain briefly about tanker cargo valve operating system
Part C	
UNIT 1	
1	Explain in detail about manometer and differential pressure cell in process pressure measurement.
2	Explain in detail about piezoelectric transducer and strain gauge with diagram.
3	Explain in detail about micro silicon wafer pressure transducer and digital pressure transducer.
4	List the methods of fluid level measurements and Explain in detail about level sensors and transducers with neat diagrams.
5	Explain in detail about direct level measurement and its types.
6	List the methods of fluid flow measurement and explain in detail about electromagnetic flow meter with neat diagram.
UNIT 2	
1	List the methods of temperature measurement and explain any two methods.
2	List the methods of speed measurement and explain any two methods.
3	Explain in detail about torque measurement.
4	Explain in detail about RTD and thermocouple with neat diagram.
5	Explain in detail about pyrometer and its types.
6	Explain in detail about salinity and salinity meter.
UNIT 3	
1	Explain in detail about thermistor and infrared type measurement.
2	Explain in detail about salinity and alarm system in fresh water generator.
3	Explain in detail about fresh water generator and its alarm systems.
4	Explain in detail about boiler and its alarm systems.
5	Explain in detail about oxygen analyser and explosive gas detector.
6	Explain in detail about oil mist detector and state the reason for formation of oil mist.
UNIT 4	
1	Define UMS and explain in detail about UMS alarm system.
2	Explain in detail about I/P and P/I converters with diagrams.
3	Explain in detail about V.I and I.V converters with diagrams.
4	Explain in detail about alarm and trip circuits with a neat sketch.
5	Explain in detail about telemetering, pneumatic and electrical transducers and receivers.
6	Explain in detail about dead man alarm and UMS alarm.
UNIT 5	
1	Explain in detail about steering gear system with diagram.
2	Explain in detail about level transmitter and equipments.
3	Explain in detail about calibration and temperature transducer.
4	Explain in detail about level transmitter and cargo cranes.
5	Explain in detail about electrical aspects of various hydraulic system and temperature transducer.
6	Explain in detail about electrical aspects of various hydraulic systems with diagrams.

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