

**University of Mumbai**  
**Examination 2021 under cluster \_\_ (Lead College: \_\_\_\_\_)**

Program: **Instrumentation Engineering**  
Curriculum Scheme: Rev 2016

Examination: TE  
Course Code: ISC 602  
Time: 2 hour

Semester VI  
Course Name: Industrial Data Communication  
Max. Marks: 80

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**Q.1 Attempt all the questions.(40 Marks)**

Q1.	The most efficient digital modulation is--
Option A:	QPSK
Option B:	FSK
Option C:	ASK
Option D:	PSK
Q2.	In a communication system, noise affect the signal
Option A:	At the transmitter
Option B:	In the channel
Option C:	At the receiver
Option D:	At modem
Q3.	Bits can be sent over wired and wireless medium as analog signal by
Option A:	Amplitude Modulation
Option B:	Digital Modulation
Option C:	Frequency Modulation
Option D:	Phase Modulation
Q4.	Which of the following standard can provide Hardware Handshaking?
Option A:	RS 232
Option B:	Parallel Port
Option C:	Timer
Option D:	Counter
Q5.	GPIB stands for
Option A:	General Purpose Industrial Bus
Option B:	General Purpose Interface Bus
Option C:	Global Packet International Bus
Option D:	General Purpose International Bus
Q6.	_____ cable consists of an inner copper core and a second conducting outer sheath.
Option A:	Twisted-pair
Option B:	Shielded twisted-pair
Option C:	Coaxial
Option D:	Fiber-optic
Q7	PROFIBUS PA permits measurement and control through _____
Option A:	one line and two single cables
Option B:	Two lines and two single cables

Option C:	One line and one cable
Option D:	wireless
Q8.	FTP is
Option A:	From Transmitter Path
Option B:	File Transmission Protocol
Option C:	From Transfer Path
Option D:	File Transfer Protocol
Q9.	Routing is
Option A:	Static
Option B:	Dynamic
Option C:	Static & Dynamic
Option D:	None of the mentioned
Q10.	Which Principal used in HART Communication?
Option A:	Frequency Modulation
Option B:	Pulse Width Modulation
Option C:	Frequency Shift Key
Option D:	Amplitude Modulation
Q11.	What is the HART protocol?
Option A:	a communication protocol to configure intelligent alarm panels
Option B:	a communication protocol to configure operator stations
Option C:	a communication protocol for configuring and ranging instrument field devices
Option D:	a communication protocol for configuring calibration equipment
Q12.	In Foundation Fieldbus A PID block is an example of a
Option A:	Resource Block
Option B:	Transducer Block
Option C:	Function Block
Option D:	Junction Block
Q13.	VSAT stands for
Option A:	Very Small Aperture Terminal
Option B:	Very Small Augmented Terminal
Option C:	Vertical satellite Augmented Terminal
Option D:	Vertical satellite Augmented Time division

Q14.	Fast Ethernet has a data rate of
Option A:	10 Mbps
Option B:	100 Mbps
Option C:	1000 Mbps
Option D:	10000 Mbps
Q15	Fondation Fieldbus is based on
Option A:	IEEE 802.3 standard
Option B:	IEEE 802.11 standard
Option C:	IEEE 802.15 standard
Option D:	IEEE 804 standard
Q16.	Which uses TCP?
Option A:	Simple mail transfer protocol
Option B:	Simple network management protocol
Option C:	Simple mail transfer & network management protocol
Option D:	None of the mentioned
Q17	What is the reference line for Modulating signal?
Option A:	Zero Line
Option B:	Carrier Peak Line
Option C:	Modulated Peak Line
Option D:	Un-Modulated Peak Line
Q18	In which frequency band Bluetooth Used
Option A:	1.2MHz to 2.2 MHz
Option B:	2.2 GHz to 2.3 GHz
Option C:	2.4 MHz to 2.5 MHz
Option D:	2.402 GHz to 2.480 GHz
Q19	An IoT network is a collection of _____ devices.
Option A:	Signal
Option B:	Machine to Machine
Option C:	Network to Network
Option D:	Interconnected
Q20	Which of the following WLAN standard has been named Wi-Fi?
Option A:	IEEE 802.6
Option B:	IEEE 802.15.4
Option C:	DSSS IEEE 802.11b
Option D:	IEEE 802.11g

<b>Q2</b> <b>(20 Marks )</b>	<b>Solve any Two Questions out of Three</b> <b>10 marks each</b>
A	Explain the TCP/IP architecture.
B	What is Modbus? Explain the different types of Modbus.
C	Explain the HART protocol in detail

<b>Q3</b> <b>(20 Marks )</b>	<b>Solve any Two Questions out of Three</b> <b>10 marks each</b>
A	Explain the Foundation Fieldbus with its advantage and disadvantage
B	Compare RS232 and RS485 in detail with example.
C	Write a short not on CAN bus and its applications.