Shivaji University , Kolhapur

Seat No.	

Paper Code(ENT202011)

M.Sc Entrance Exam , MAY-2020

58298-Electronics

Day And Date : Thursday 19/11/2020 **Total Marks :** 100

Time : 15:30 To 17:00

		Marks
1	The resistance of a conductor depends on _____. A) length of a conductor B) cross-section area of the conductor C) nature of the material D) All the above	1
2	Which of the following is universal gate ? A) AND B) NAND C) OR D) EX-OR	1
3	Alkaline solution have a pH value ……. than 7 A) greater B) less C) equal D) none of these	1
4	ADC 0804 is ------- bit converter. A) 4 B) 8 C) 16 D) 10	1
5	The forward breakover voltage of SCR is decreased by increasing……. A) anode voltage B) anode current C) gate current D) none of these	1
6	In ADC 0804, if VRef/2 pin is left open then analog input voltage span is ----volt. A) 0 – 1 B) 0 – 2 C) 0 – 4 D) 0 – 5	1
7	…… distortion is due to the non-linear operation of the active device. A. cross over B. harmonic C. spikes D. both a and b	1

8	The 2's complement of 1101100 is _____ A) 0010011 B) 0010010 C) 0010100 D) 0010110	1
9	asd A) a B) b C) c D) d	1
10	Common cathod type display requires an active ---------- configuration for code converter circuit. A) High B) Low C) Both high and low D) None of these	1
11	An ideal instrumentation amplifier has ---------- common mode gain, A) Zero B) Infinite C) 1000 D) None of these	1
12	---------- display are characterized by low power dissipation, low cost, large area and low operating speed. A) LED B) CRT C) LCD D) All of the above	1
13	The relation between magnetising force (H) and magnetic flux density (B) is described by _____. A) B = μH B) B = H/μo μr C) B = μoH/ μr D) B = μrH/ μo	1
14	---------- is a nonlinear process used in the signal conditioning equipment. A) Modulation B) Amplification C) Attenuation D) Integration	1
15	LVDT IS ---------- transducer. A) Velocity B) Flow C) Displacement D) Photo	1
16	The photo conductive material of photo conductive cell is ----------. A) quartz B) iron C) metal oxides D) cadmium sulphide	1

17	A known accurate measure of physical quantity is termed as a ----------. A) standard B) accuracy C) error D) precision	1
18	Input offset voltage in op-amp results due to ---------- A) Identical I / P transistor B) Non-identical I / P transistor C) Power supply D) None of these	1
19	In voltage series feedback, feedback voltage…… A. depends on current B. depends on load voltage C. independent of load voltage D. none of these	1
20	In phase shift oscillator, RC feedback network produces phase shift of …. A. 180^0 B. 360^0 C. 90^0 D. 270^0	1
21	The half adder adds -------bits. A) 2 B) 3 C) 4 D) 8	1
22	The IC 7490 is a …… A) D flip Flop B) T Flip Flop C) Decade Counter D) Both a & b	1
23	Binary ripple counter with 4 flip-Flops counts …… states. A) 16 B) 8 C) 4 D) 2	1
24	A zener diode _____. A) is a battery B) has a constant voltage in the brakdown region C) has a barrier potential of 1 V D) is forward biased	1
25	----- is a memory pointer register. A) ACC B) Flag C) PC D) IR	1
26	The instruction MVI C, 25 H has -------- addressing mode. A) direct B) Register C) Indirect D) Immediate	1

27 Astable multivibrator has ---------- stable states. 1

A) One

B) Two

C) No

D) None of these

28 In h - Parameter representation, the independent variables are ------ 1

a) I_1 and V_2

b) I_2 and V_1

c) V_1 and V_2

d) I_1 and I_2

29 Laplace transform of unit step function is ---------- 1

a) $1 / S$

b) $1 / S^2$

c) $1 / S + \alpha$

d) $1 / S - \alpha$

30 -------- mode is called as auto reload mode 1

A) Mode 0

B) Mode 1

C) Mode 2

D) Mode 3

31 The decade counter is also called as …….. Counter. 1

A) Mod-5

B) Mod-7

C) Mod-10

D) Mod-12

32 What is the function of a buffer circuit? 1

A) to provide an output that is inverted from that on the input

B) to provide an output that is equal to its input

C) to clean up the input

D) to clean up the output

33 RC- integrator circuit behaves as ------- 1

A) Low pass filter

B) High pass filter

C) Band pass filter

D) Band stop filter

34 The time required by the voltage from its initial value to reach its maximum value is known as ---------- time. 1

A) Fly back

B) Sweep

C) Lagging

D) None of these

35 In an npn transistor, the majority carriers in the emitter are _____. 1

A) free electrons

B) holes

C) Both A and B

D) None of the above

36	Memory IC 27128 is of ---------byte A) 2K B) 4K C) 8 K D) 16 K	1
37	The ideal op-amp has ……..output resistance. A. 75 Ω B. 0 Ω C. 2M Ω D. Infinite Ω	1
38	An integrated circuit offers…… A) Improved performance B) High speed C) Low powers consumption D) All the A, B & C	1
39	Supply Voltage Rejection Ratio (SVRR) of op-amp is the measure of…… A) voltage gain B) I/P impedance C) noise D) o/p impedance	1
40	The output voltage of a phase detector in PLL is a dc voltage and is often referred to as the ----------voltage A) actual B) error C) measured D) both A & B	1
41	Modulation is done at . . . . . . A) Transmitter B) Receiver C) both receiver & transmitter D) none of these	1
42	Which parameters are used to indicate the speed of a comparator? A) Response Time B) Propagation Delay C) Both a and b D) None of the above	1
43	What is the feedback factor of voltage follower circuit? A) Zero B) Unity C) Infinity D) Between zero & one	1
44	IC MAX232 is used _____. A) To convert the RS232's signals to TTL voltage levels. B) to match baud rate of IBM PC and RS232 C) for handshaking process between PC and 8051 D) none of these	1

45	The conductivity ---------- is a process where holes and electrons both are injected into the drift layer A) modulation B) demodulation C) amplification D) rectification	1
46	Mode 1 is ------- bit Timer mode. A) 8 B) 16 C) 32 D) 11	1
47	According to DeMorgan theorem (x + y)' = _____. A) (x y)' B) x' + y' C) x' y' D) x y	1
48	The operation of log and antilog amplifiers is based on the -------- characteristics of a p-n junction. A) Non-linear B) Linear C) Linear and Non-Linear D) None of these	1
49	The Q-factor of a narrow band pass filter is ------- A) Zero B) Greater than one C) Less than one D) Its bandwidth	1
50	The lowest gain that can be obtained from a Non-inverting amplifier is ------- A) 0.5 B) 1 C) Zero D) 10	1
51	For an ideal op-Amp has ---------- input impedance A) 75 ohm B) 0 ohm C) 2 Mega ohm D) Infinite ohm	1
52	The only drawback of Op-amp is ---------- A) low output impedance B) High input impedance C) Fall of gain at low frequencies D) Fall of gain at high frequencies	1

53 Power in electrical circuit is given by…… 1

A. IV

B. $I^2 R_L$

C. $V^2 R_L$

D. all of these

54 Which of the following gate is used as a controlled invertor ? 1

A) AND

B) NAND

C) OR

D) EX-OR

55 The full adder adds -------bits. 1

A) 2

B) 3

C) 4

D) 8

56 Shift registers are used for___ 1

A) shifting

B) rotating

C) adding

D) both a and b

57 Mode 2 operation of IC 8253 is --------- 1

A) Square wave Generator

B) Software triggered strobe

C) Hardware retriggered one shot

D) Rate generator

58 The instruction STA, 6020 H has -------- addressing mode. 1

A) direct

B) Register

C) Indirect

D) Immediate

59 Parallel resonant circuit is also called as ----------. 1

A) Acceptor

B) Rejecter

C) Filter

D) Rectifier

60 Timer overflow is indicate by ------- flag 1

A) IE

B) TF

C) TR

D) TMOD

61 The precision rectifier circuit is designed to---------- 1

A) rectify waveforms with very large voltage swings

B) rectify waveforms with very small voltage swings

C) rectify precision waveforms

D) amplify and rectify waveform

62	In 8051 baud rate is set using -------. A) Timer 1 in mode 2 B) Timer 1 in mode 1 C) Timer 1 in mode 0 D) Timer 1 in mode 3	1
63	The meaning of sbit LED=P2^7 is---------- A) P2 is EXORed with LED B) P2.7 bit is XORed with LED C) P2.7 bit is labeled as LED D) None of these	1
64	Reverse recovery current in power diode depends upon……. A) temperature B) storage charge C) forward current D) PIV	1
65	…… is a unidirectional device. A) Triac B) Diac C) SCR D) None of these	1
66	In two position control two different set point are used and the gap between these set points is called ---------- A) Hysteresis B) neutral zone C) interset point gap D) error	1
67	---------- communication protocol used in automation systems A) RS 232 B) IEEE 801.1 C) RS 485 D) RS 486	1
68	Interrupt priority can be changed using ----------register. A) IE B) IP C) TCON D) TMOD	1
69	---------- switches are not accessible for the operator A) SPDT B) Limit C) Push button D) Rotary	1
70	Which of the following cannot be an input that is given to the PLC A) Manual Switches B) Relays C) Sensors D) None of these	1

71 The hybrid in telephone system is a ____. 1

A) relay
B) transistor
C) special transformer
D) MOSFET

72 If R_s is the source resistance and R_L is the load resistance then according to maximum power transfer theorem, maximum power is delivered to the load if…. 1

A. $R_s > R_L$
B. $R_s < R_L$
C. $R_s = R_L$
D. $R_s = R_L = 0$

73 The value of the inductive reactance depends on …… 1

A) a) voltage
B) b) current
C) c) frequency
D) d) power

74 Flip flops are ----------circuits. 1

A) Sequential
B) Combinational
C) Both a & b
D) None of These

75 ------ signal is used to demultiplex AD0-AD7. 1

A) RESET IN
B) ALE
C) RD
D) IO/M

76 LM317 IC can operate as a…… 1

A) modulator
B) amplifier
C) inductor regulator
D) floating regulator

77 Thevenin theorem helps to replace given network by _____ . 1

A) a single voltage source with a series resistance
B) a single current source with a series resistance
C) a single voltage source with a parallel resistance
D) None of the above

78 Half Adder can be implemented with _____ gates. 1

A) XOR and AND
B) XOR and NOT
C) XOR and OR
D) NOR and AND

79 If reverse bias is applied to the PN junction diode, then its barrier width …… 1

A. increases
B. decreases
C. remains the same
D. none of these

80 If line frequency is 60 Hz, the output frequency of a bridge rectifier is _____. 1

A) 30 Hz

B) 60 Hz

C) 120 Hz

D) 240 Hz

81 An emitter follower has a voltage gain that is _____. 1

A) much less than one

B) approximately equal to one

C) greater than one

D) zero

82 Possible I/O lines for IC 8255 ------- 1

A) 3

B) 4

C) 8

D) 24

83 To interface EPROM IC 27128 with 8085, the minimum ------address lines are required. 1

A) 11

B) 12

C) 13

D) 14

84 -------- is called as ‘auto reload’ mode in 8051 Timer operation. 1

A) Mode 0

B) Mode 1

C) Mode 2

D) Mode 3

85 To interface EPROM IC 2764 with 8085, the minimum --------address lines are required. 1

A) 11

B) 12

C) 13

D) 14

86 The differential amplifier can be biased by using ---------- 1

A) emitter bias

B) current mirror bias

C) constant current bias

D) all of these

87 An integrated circuit offers ---------- 1

A) low power consumption

B) improved performance

C) high speed

D) All of these

88 As temperature increases the Slew rate of an Op-Amp. ------ 1

A) Gradually decreases

B) Gradually increases

C) Remains constant

D) None of these

89 Which of the following is not an input or output of the 555 timer 1

A) Reset
B) Threshold
C) Control voltage
D) Clock

90 ……. cells cannot be recharged. 1

A. secondary
B. primary
C. lead acid
D. none of these

91 If the control voltage to a VCO increases, the output frequency --------- 1

A) Decreases
B) Does not changes
C) Increases
D) None of these

92 Butterworth active filter has -------- 1

A) Ripple pass and Stop band
B) Flat pass and Stop band
C) Ripple pass and Flat Stop band
D) Flat pass and Ripple Stop band

93 Forward biased diode offers …… resistance. 1

A. zero
B. very low
C. very high
D. infinite

94 ……. region of the transistor is lightly doped. 1

A. emitter
B. base
C. collector
D. none of these

95 In full wave rectification, if the input frequency is 50 Hz, then output frequency is …. Hz. 1

A. 25
B. 50
C. 100
D. 200

96 Blocking capacitor blocks …… signal. 1

A. a.c.
B. d. c.
C. both a.c. and d.c.
D. none of these

97 Capacitive reactance is given by X_C = …. 1

A. $1/2\pi fC$
B. $1/4\pi fL$
C. $1/2fL$
D. $1/2\pi f$

98 I-V relation for resistor is given by … 1

A. V = IR
B. I = VR
C. V = I/R
D. V = R/I

99 …….. device has negative resistance property. 1

A. FET
B. UJT
C. BJT
D. diode

100 …… device is used to design saw tooth oscillator. 1

A. SCR
B. BJT
C. UJT
D. FET