



ELECTRONIC SYSTEMS 1
5260

JUNE XXXX

INTERMEDIATE LEVEL

Centre No. & Name	
Candidate No.	
Candidate Name	

Mobile phones are **NOT** allowed in the examination room.

5260 ELECTRONIC CIRCUITS 1: MULTIPLE CHOICE QUESTION PAPER

1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

1. USE A SOFT HB PENCIL THROUGHOUT THE EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the examination begins:

3. Check that this question booklet is headed “**Intermediate Level – 5260 ELECTRONIC CIRCUITS 1**”.
4. Insert the information required in the spaces above.
5. Insert the information required in the spaces provided on the answer sheet using your HB pencil:

Candidate Name, Exam Session, Subject Code, Centre Number and Candidate Number.

Take care that you do not erase or fold the answer sheet or make any marks on it other than those asked for in these instructions.

How to answer the questions in this examination:

6. Answer **ALL** the **50** questions in this Examination. All questions carry equal marks.
7. Each question has **FOUR** suggested answers: **A, B, C** and **D**. Decide which answer is correct. Find the number of the question on the Answer Sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen.
For example, if **C** is your correct answer, mark **C** as shown below:

[A] [B] [C] [D]
8. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, then mark your new answer.
9. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to this question later.
10. Do all rough work in this booklet, using, where necessary, the blank spaces in the question booklet.
11. **You must not take this booklet and the answer sheet out of the examination room. All question booklets and answer sheets will be collected at the end of the examination.**

Turn Over

1. An electronic component whose resistance value changes with changes in temperature is

A	Thermistor
B	Light dependent Resistor
C	Photodiode
D	Phototransistor

2. In an a.c. circuit, a capacitor is considered as

A	A closed switch
B	An open switch
C	An open circuit
D	Voltage source

3. The best and most common capacitor used for filtering is

A	Ceramic capacitor
B	Polyester capacitor
C	Electrolytic capacitor
D	Axial lead polystyrene

4. One of the following is a criteria for choosing a capacitor

A	Inductance rating
B	Power rating
C	Current rating
D	Voltage rating

5. The equivalent capacitance of Two capacitors of values 100nF and 10nF connected in parallel is:

A	90nF
B	100nF
C	110nF
D	101nF

6. A resistor with color bands Red-Violet-Red-Gold has the value:

A	22k Ω \pm 10%
B	2.6k Ω \pm 5%
C	2.7k Ω \pm 5%
D	2K7 Ω \pm 15%

7. The colour code of a resistor with resistance 47 \pm 10% is

A	Yellow-Violet-Black-Silver.
B	Yellow-Black-Violet-Silver
C	Orange-Violet-Black-Gold
D	Orange-Black-Violet-Gold

8. When resistors are connected in parallel the total resistance is

A	Equal to the sum of the resistances
B	Greater than the sum of the resistances
C	Less than the sum of the resistances

D	Lesser than the value of the lowest resistance
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9. When a volt meter is placed across a forward biased diode, it will read a voltage approximately equal to

A	The biased battery voltage
B	Zero volt
C	The diode barrier potential voltage
D	The total circuit voltage

10. The knee voltage of a silicon diode when forward biased is

A	Greater than or equal to 0.3V
B	Greater than or equal to 0.7V
C	Greater than or equal to 2V
D	Greater than or equal to 5V

11. Which of the following is not a characteristic of an ideal OPAMP

A	Infinite voltage gain
B	Infinite input impedance
C	Infinite bandwidth
D	Infinite output impedance

12. The duty cycle of an astable multivibrator is 75%. If the OFF time is 2.5ms, the frequency of the multivibrator

A	25Hz
B	50Hz
C	100Hz
D	75Hz

13. The capacitance of a capacitor with colour bands: Brown-Black-Yellow-Black-Red is

A	100000pF \pm 20%, 250V
B	10000pF \pm 20%, 250V
C	100pF \pm 20%, 100V
D	100000pF \pm 20%, 100V

14. The electronic component whose resistance value changes with changes in light intensity is

A	Thermistor
B	Light dependent Resistor
C	Photodiode
D	Phototransistor

15. A transistor acts as an amplifier within the

A	Active region
B	Cut-off region
C	Saturation region
D	Breakdown region

16. The two input terminals of an OPAMP are known as

A	Positive and negative
B	Differential and non-differential
C	Inverting and non-inverting
D	High and low

17. In a BJT, the largest current flow occurs

A	In the base
B	In the emitter
C	In the collector
D	Through the CB junction

18. Recombination is when

A	An electron falls into a hole
B	Positive and negative ions bond together
C	A valence electron becomes a conducting electron
D	A crystal is formed

19. The Criteria used in selecting a resistor is

A	Voltage drop, current and power
B	Resistance, tolerance and power
C	Resistance, current and power
D	Resistance, voltage, current and tolerance

20. The electronic circuit that converts AC signal to pulsating DC signal is

A	Regulator
B	Rectifier
C	Filter
D	Chopper

21. The constant-current region of a JFET lies between

A	cut off and saturation
B	cut off and pinch-off
C	0 and I_{DSS}
D	pinch-off and breakdown

22. The full meaning of MOSFET is

A	Metal oxidized selenium FET
B	Metal oxide surface FET
C	Metal oxide semiconductor FET
D	Metal of surface FET

23. A multivibrator that generates a square wave on its own is called a

A	A monostable multivibrator
B	Bistable multivibrator
C	Astable multivibrator
D	Flip-Flop

24. Which diode produces light when energized?

A	Photodiode
B	LED
C	Photoconductive cell

D	Tunnel diode
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25. The average load voltage of a half wave rectifier is

A	V_{max}/π
B	$V_{rms}/2$
C	$V_{rms}\sqrt{2}$
D	V_{max}

26. A transmission medium that consist of a glass and plastics is

A	coaxial cable
B	fiber optic cable
C	twiste pair cable
D	unshielded twisted pair cable

27. The signal at the output of the circuit in **Error! Reference source not found.** is

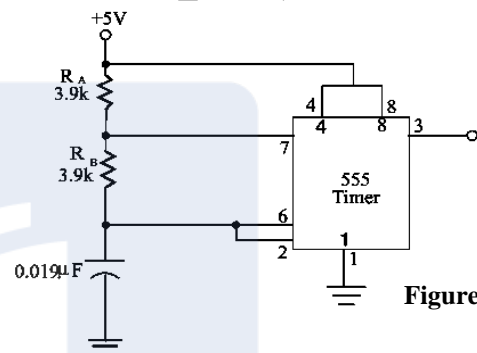


Figure 1

A	Square wave
B	rectangular
C	Triangular waves
D	Saw tooth wave

28. The full meaning of SIPO is

A	Parallel-in Serial-out
B	Serial-in Parallel-out
C	Serial-in Serial-out
D	Serial-In Peripheral-Out

29. For a JFET, when V_{DS} is increased beyond the pinch OFF voltage, the drain current

A	Increases
B	Decreases
C	Remains constant
D	First decreases and then increases

30. A capacitor with the number code 104 J written on it indicates?

A	$104\text{nF} \pm 5\%$
B	$100\mu\text{F} \pm 10\%$
C	$100\text{nF} \pm 5\%$
D	$100\text{pF} \pm 5\%$

Turn Over

31. Which of the following resistors has the largest physical size?

A	wire-wound resistors
B	carbon-composition resistors.
C	surface-mount resistors.
D	potentiometers

32. The voltage rating of a diode with reference code BZX85C6V2 is

A	6v \pm 5%
B	6.2 \pm 5%
C	8.5v \pm 5%
D	6.2v \pm 10%

33. A reverse biased diode is equivalent to

A	An opened switch
B	A closed switch
C	High capacitance
D	Regulator

34. In a Zener shunt regulator, the condition for regulation to occur is

A	$V_Z > V_{in}$
B	$V_{in} > V_Z$
C	$V_{in} = V_Z$
D	$V_Z > V_{out}$

35. The full meaning EEPROM

A	Electronic Erasable Programmable Read Only Memory
B	Electrically Erasable Programmable Read Only Memory
C	Easily Erasable Programmable Read Only Memory
D	None of the above.

36. A BJT transistor is a

A	Current controlled voltage device
B	Voltage controlled current device
C	Current controlled current device
D	Voltage controlled voltage device

37. A semiconductor device that resembles a voltage variable capacitor is called ____ diode

A	Tunnel
B	PIN
C	Schottky
D	Varactor

38. Which stage of a DC power supply uses a Zener as a main component?

A	Rectifier
B	Voltage divider
C	Regulator
D	Filter

39. Diacs are primarily used as

A	Pulse generators
B	Triggering devices
C	Power thyristors
D	Surge protecting devices

40. The emitter of a transistor is generally heavily doped because?

A	It possesses low resistance
B	It has to supply the charge carrier
C	It is the first region of the transistor
D	It has to dissipate maximum power

41. If the inputs of a NAND gate are connected together, the resulting circuit is

A	OR gate
B	AND gate
C	NOT gate
D	NAND gate

42. The basic storage element in a digital system is

A	Counter
B	Encoder
C	Multiplexer
D	Flipflop

43. When an NPN transistor is saturated, its V_{CE} is

A	Is zero and $I_C = 0$
B	Is low and I_C is high
C	Equals V_{CC} and I_C zero
D	Equals V_{CC} and I_C is high

44. The simplified form of time constant for a multivibrator is?

A	$\tau = RC$
B	$\tau = RL$
C	$\tau = LC$
D	$\tau = RC/L$

45. Which of the following circuit is used for generating continuous square wave signal?

A	Bistable multivibrator
B	Astable multivibrator
C	Monostable multivibrator
D	Schmitt trigger

46. The function of a NOT gate is to

A	Stop a signal
B	Recomplement a signal
C	Invert an input signal
D	Acts as a universal gate

47. An LED and a phototransistor are equivalent to

A	Thermocouple
B	Regulator
C	FET
D	Optocoupler

48. In a Zener diode shunt voltage regulator, the diode regulates so long as it is kept in _____ condition.

A	Forward
B	Loaded
C	Reverse
D	Unloaded

49. The reference code for an integrated regulator that produces +9V at its output is

A	7809
B	7709
C	7909

D	7509
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50. A Triac behaves like two

A	Inverse parallel connected thyristors with common gates
B	Diode in series
C	Resistors and one diode
D	Four-layer diode in parallel.