J. C. Bose University of Science and Technology, YMCA, Faridabad
(formerly YMCA University of Science and Technology)
A State Govt. University established wide State Legislative Act. No. 21 of 2009
SECTOR-6, FARIDABAD, HARYANA-121006

Question Booklet

Sr. No. Q -

Written Test for the post of TECHNICIAN-GEW
(Advt No.01/2023)

Applicant ID .. Answer Sheet No. ……**A-**….

Name of Applicant: . Signature of the Candidate ….

Date of Examination: ...**Sept. 09, 2023**..... Signature of the Invigilator(s)

1. .....
2. .....

Time: 2:00 hrs **Maximum Marks: 95**

IMPORTANT INSTRUCTIONS

i. The question paper is in the form of Test-Booklet containing 95 questions. Each question carries four answers marked (A), (B), (C) and (D), out of which only one is correct.

ii. On receipt of the Test-Booklet (Question Paper), the applicant must immediately check it and ensure that it contains all the pages, i.e., 95 questions. Discrepancy, if any, should be reported to the invigilator immediately after receiving the Test-Booklet.

iii. The separate Answer-Sheet is provided with the Test-Booklet/Question Paper. On this sheet there are separate rows containing four circles each. One row pertains to one question.

iv. The candidate should write his/her details at the places provided on the cover page of the Test-Booklet/Question Paper and on the Answer-Sheet and NOWHERE ELSE.

v. No second Test-Booklet/Question Paper and Answer-Sheet will be provided. The candidates are advised to be careful in handling it and marking the answer on the Answer-Sheet.

vi. For every correct answer of the question **One (1) mark will be awarded.** For every un-attempted question, zero (0) mark shall be awarded. **There is NO Negative Marking** for wrong answers.

vii. Marking shall be done only based on answers responded on the Answer-Sheet.

viii. To mark the answer on the Answer-Sheet, candidate should **darken** the appropriate circle in the row of each question with Blue or Black ink pen.

ix. For each question only **ONE** circle should be **DARKENED** as a mark of the answer adopted by the candidate. If more than one circle for the question(s) are found darkened, the question will be treated as cancelled.

x. The candidate should not remove any paper from the Test-Booklet. Attempting to remove any paper shall be liable to be punished for use of unfair means.

xi. Rough work may be done on the blank space provided in the Test-Booklet/Question Paper only.

xii. *Mobile phones (even in Switch-off mode) and such other communication/programmable devices are not allowed inside the examination hall.*

xiii. No candidate shall be permitted to leave the examination hall before the expiry of the time.

Question paper for the post of Technician (GEW)

JCBUST, YMCA

Tick Mark (√) the most appropriate answer. All questions carry equal marks

SECTION A (General Aptitude)

Q1. Which day of the year is celebrated as International Yoga Day?

A) 21st June B) 28th Feb C) 12th Jan D) 2nd Oct

Q2. The "Purna Swaraj" resolution was adapted in annual session of the Indian National Congress held at

A) Bombay B) Lahore C) Calcutta D) New Delhi

Q3. Sriharikota is situated in which state

A) Orissa B) Karnataka C) Andhra Pradesh D) Tamil Nadu

Q4. Neeraj Chopra won a Gold Medal in the Olympics held in the year.

A) 2021 B) 2020 C) 2016 D) 2012

Q5. Which day did India become a Republic?

A) 26th Jan 1947
B) 15th August 1950
B) 15th August 1947
D) 26th Jan 1950

Q6. The negative of "he wastes his time" is :

A) He does not waste his time.
B) He do not wastes his time
C) He does not wastes his time
D) He do not waste his time

Q7. The interrogative of the sentence 'I bought some books last week' is:

A) Did I bought some books last week?
B) Did I buy some books last week?
C) Have I bought some books last week?
D) Do I bought some books Last week?

Q8.Fill in the blanks with proper articles :
'There is .... Fly in .... ointment.'

A) a, an B) the, an C) a, the D) an, the

Q9. Passive voice of the sentence 'Polish your shoes' is:

A) Let your shoes be polish
B) Let polish your shoes
C) Let your shoes be polished
D) Let your shoes polished

Q10. The correct punctuation form of the sentence 'What a beautiful flower' is:

A) What a beautiful flower?
B) What a beautiful flower.
C) What a beautiful flower
D) What a beautiful flower!

Q11. The synonym of 'august' in the phrase 'august gathering' is:

A) dignified B) ridiculous C) petty D) large

Q12. Choose the pair from the answer choices that best expresses the relation similar to that expressed by the question pair.

Question Pair :- Good : Excellent

A) Bad : Immoral B) Caution : Careless

C) Hill : Mountain D) Jealousy : Respect

Q13. The sentence below consists of a word, which is underlined. Out of four choices given, chose a word which is OPPOSITE in meaning of the underlined word.

"The leader was pragmatic in the approach to the problem caused by price rise in this country."

A) indefinite B) vague C) idealistic D) optimistic

Q14. In the given pairs, identify the pair which is different from others:

A) Lion : Roar B) Snake : Hiss C) Dog : Bark D) Frog : Chirp

Q15. Which one of the following is closest to the word 'source' :

A) trace B) report C) origin D) energy

Q16. 'Born with a silver spoon in his mouth' means :

A) Born in a poor family
B) Born in a goldsmith family
C) Born in a wealthy family
D) Born in a family of nationalists

Q17. Fill in the blanks with proper preposition

'He insisted .... Seeing the documents before signing.

A) By B) to C) of D) on

Q18. Which of the following metals have highest conductivity :

A) Copper B) Silver C) Aluminium D) Iron

Q19. Hertz (Hz) is the unit of :

A) Wave length B) Frequency C) Displacement D) Speed

Q20. Kilo watt hour (kwh) is a unit of :

A) Electric Current B) Electric Energy C) Charge D) Potential

Q21 How many milli amperes are there in one ampere.

A) 100 B) 1000 C) 0.001 D None of these

Q22. Which particle of the following have no electric charge

A) Electron B) Proton C) Neutron D) ion

Q23. Which gas is used to extinguish fire

A) Oxygen B) Hydrogen C) Carbon dioxide D) Nitrogen

Q24 Which of the following automotive systems uses lubrication fluid?

A) the transmission system B) the exhaust system

C) the suspension system D) the electrical system

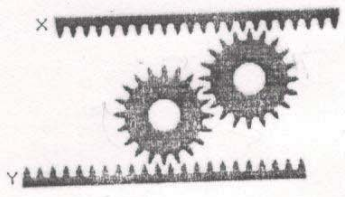
Q25. What is the most accurate statement regarding the relationship between weight and density?

A) Weight equals density divided by volume.
B) A bathroom scale cannot measure density.
C) Density can be measured in Kg.
D) All of the above.

Q26. The center of gravity of a baseball bat would be best described as

A) near the grip B) near the fat end. C) near the skinny end. D) at the top.
B)

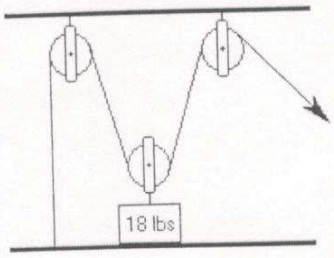
Q27. If bar Y moves left at constant speed. How does bar X move



A)Left, Faster B) Left, Same C) Left, Slower D) Right, Same

Q28. Approximately how much force is needed to lift the weight in the figure below?

A) 36 Lbs. B) 6 Lbs C) 18 Llbs D) 9 Lbs



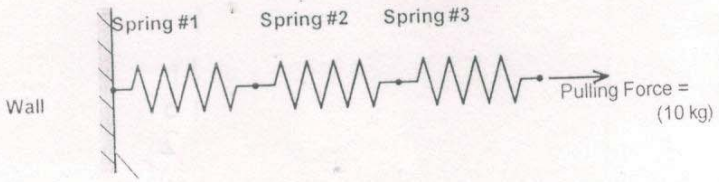
Q29. Which of the following is the shortest day of the year?

A) 21st March B) 25th December

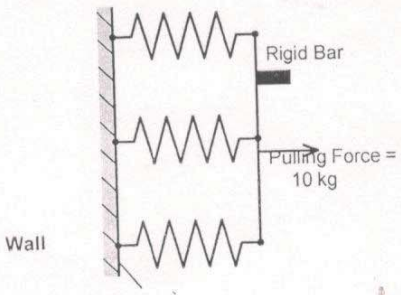
C) 23rd September D) 22nd December

Q30. When three identical springs are arranged in a series and a pulling force of 10 kg is applied, The total stretch is 9 cm. If these same three springs were arranged in parallel and the same 10-kg force is applied to the new arrangement, what will be the total distance of stretch?

Springs in Series:



Springs in Parallel:



A) 3 cms B) 4.5 cms C) 9 cms D) 18 cms

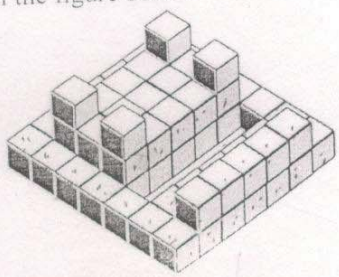
Q31. What type of gauge uses units of rpm?

A) a pressure gauge B) a tachometer C) a speedometer D) a thermometer

Q32. The suspension system on a bicycle is likely to use which of the following mechanical devices?

A) a Chain B) a pulley C) a gear D) a spring

Q33. How many cubes are there in the figure below:

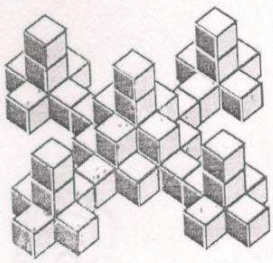


A) 61 B) 68 C) 53 D) None of these

Q 34 How many mm are there in an inch:

A) 2.54 B) 10 C) 25.4 D) None of these

Q 35. How many cubes are there in the figure below



A) 58 B) 36 C) 48 D) None of these

Section B (Subject Knowledge)

(1) (2) (3) (4)

Q36. Which Tool is used with hammer to notch or chip away stone or cut slots in wall

A) (2) B) (3) C (1) D (4)

Q37. Which Tool is used with sockets to loosen or tighten nuts and/or bolts

A) (2) B) (3) C (1) D (4)

Q38. What type of outside energy source could be used to operate a pump?

A) a battery B) an internal combustion engine

C) an electric motor D) all of the above

Q39. Which of the following quantity is increased in a step down transformer

A) Current B) Voltage C) Power D) Energy

Q40. Conductivity of copper ..... when it is heated

A) Increases B) Decreases C) Remains Same D) melts

Q. 41. A rectangular coil of copper wire is rotated in a magnetic field. The direction of the induced current c
once in each:

A) Two revolutions
B) One revolution
C) One-fourth revolution
D) Half revolution

Q.42 The magnetic field inside a long straight solenoid carrying current:

A) Is zero
B) Decrease as we move towards its end
C) Increase as we move towards its end
D) Is same at all points.

Q 43. How much more energy will be consumed by a

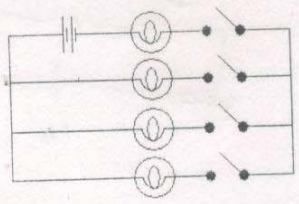
100-watt bulb in five minutes than a 50-watt bulb during the same period of time? (1 kJ = 1000 joules)

A) 0 kJ B) 5 kJ C) 10 kJ D) 15 kJ

Q 44. A metal spring has 1135 coils with radii equal to 5 cm. When it is unwound and measured, approximately how long will the wire be?

A) 5,675 cm B) 15,135 cm C) 35,639 cm D) 39,725 cm

Q 45. How many minimum switches need to be closed to light at least one bulb.



A) 1 B) 2 C) 3 D) 4

Q46. Choose correct or the best alternative in the following:

The power factor of a purely resistive circuit is:

(A) zero (B) unity (C) lagging (D) leading

Q47. In an a/c circuit, the ratio of kW / kVA represents

(A) Power factor (B) Load factor (C) Form factor (D) Diversity factor

Q48. The unit of inductance is

(A) Ohm (B) Mho (C) Farad (D) Henry

Q49. Watt-hour is the unit of

(A) Electric power (B) Electric capacity

(C) Electric energy (D) Electric charge

Q50. The frequency of DC supply is

(A) Zero (B) 16 ⅔ Hz (C) 50 Hz (D) 100 Hz

Q51. In a/c circuit the product of voltage and current is known as
(A) Power (B) Real power (C) Resistive power (D) Apparent power

Q52. A network that does not have either voltage or current sources is called

(A) Active network (B) Passive network

(C) Resistive network (D) Dummy network

Q53. Which of the following will remain the same in all parts of a series circuit?

(A) Voltage (B) Current (C) Power (D) Resistance

Q54. Three resistors are connected in series with a DC source. Which of the following is true

A) Current flowing in each resistor is same
B) Voltage drop across each resistor is same.
C) Current flowing through smallest resistor is largest
D) Voltage drop across largest resistor is smallest

Q55. In a parallel combination of resistors, which of the following is true

A) Current flowing in each resistor is same
B) Power Dissipated by each resistor is same
C) Net resistance is sum of all resistances
D) Voltage drop across each resistor is same.

Q56. Resistance offered by a capacitor to DC supply is:

A) Zero B) Infinite C) $1/2\pi FC$ D) $2\pi FC$

Q57. The purpose of using over load protection in a motor is to protect the motor from:

A) sustained overcurrent B) over voltage

C) short circuit D) all the above.

Q58. The purpose of quartz and fillers in the fuse is to:

A) increase voltage rating B) increase current rating

C) increase heat transfer D) increase weight.

Q59. AC operated Contactor coils are designed to drop the plunger when voltage falls to _____ per cent of rated voltage:

A) 20% to 30% B) 65% to 45% C) 75% to 90% D) 85% to 110%

Q60. Which one of the following timers is the most accurate one?

A) Thermal timer B) Mechanical Timer

C) Synchronous motor timer D) Pneumatic timer

Q61. Liquid filled thermostats can measure temperatures in the range of:

A) 50 to 700°F B) 100 to 1000°F C) 50 to 2200°F D) 0 to 100° F

Q62. A pressure transducer consists of

A) pressure switch and a special relay B) a low resistance coil

C) a semi-conductor strain gauge D) All the above

Q63. Material used for contacts of high rating contactor is

A) Copper B) Silver C) Silver Nickel D) Silver Cadmium Oxide

Q64 Output Voltage (V_{av}) of a full wave bridge rectifier is ..... Volts approximately when the input voltage Is 100 Volts (V_{rms})

A) !00 Volts B) 90 Volts C) 36.6 Volts D) 73.2 Volts

Q65. The purpose of reduced voltage starter used to start a squirrel cage motor is to have :

A) reduced current drawn from supply to avoid disturbance in the supply system
B) reduced torque to avoid jerk.
C) Both A) and B) are correct
D) Neither A) nor B) is correct

Q66. Which of the following is a type of Push button switches
A) Recessed button type
B) Mushroom head type
C) Illuminated type
D) All the above types

Q67. Starting current of squirrel cage motors is approximately:

(*a*) 2 times the full load current (*b*) 3 times the full load current

(*c*) 4.5 to 6 times the full load current (*d*) equal to rated current

Q68. Which logic gate(s) can be used to build digital control circuits?

A) AND gate B) OR gate C) Inverter Gate D) all of these

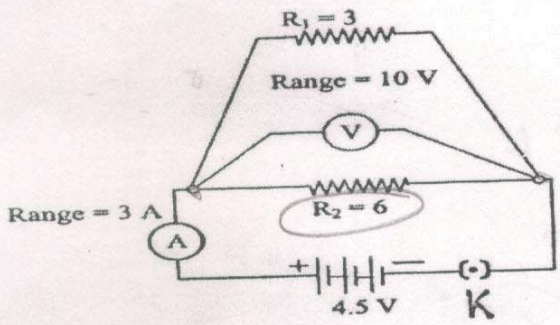
Q69. Logic circuit for a static (electronic) timer can be realized using which element?

A) Flip Flop B) Monostable Circuit C) AND-OR-INVERT D) All of these

Q70. An SCR :

A) Can be used as a solid-state switch
B) Can be switched off by reducing gate voltage
C) Can not be used as a rectifier
D) Is an electromagnetic relay

Q71. The voltmeter, ammeter and resistances shown in the circuit shown below are found to be correct. On closing the key 'K', the voltmeter reads 4.5 V, but ammeter reads 1.5 A. This could most likely be because the wire joined to:



A) Resistance R1 is lose B) Resistance R2 is lose

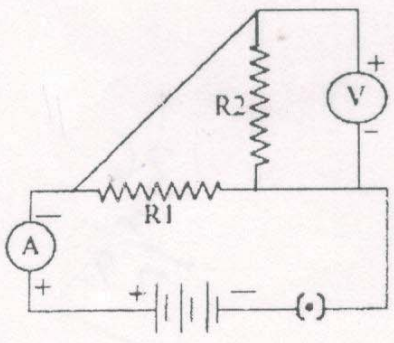
C) Both R1 and R2 are lose D) The ammeter Terminals are loose

Q72. To increase the range of an ammeter

A) A resistance is connected in parallel B) A resistance is connected in series

C) Range cannot be increased D) Both A) and B) are correct

Q73. How are resistors R1 and R2 connected in :



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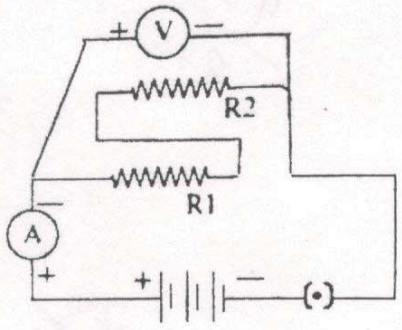


II

A) Parallel in both circuits B) Series in both circuits

C) Parallel in circuit I and series in circuit II D) Series in Circuit I and parallel in circuit II

Q74. Which of the following statement is true

A) A voltmeter has very high internal resistance
B) Voltmeter is always connected in series with the circuit
C) Voltmeter draws very large current from the measuring circuit
D) All the above are correct

Q75. How much energy in kWh is consumed for heating 20 liter of water from 20° C to 56° C

A) 0.836 B) 7.2 C) 0.2 D) None of these

Q76. Temperature rise of a motor depends on:

A) mechanical overloading B) reduced line voltage

C) higher ambient temperature D) all of these.

Q77. The speed of a synchronous motor is fixed by

A) Stator supply voltage
B) Rotor supply voltage
C) Frequency of power supply and number of poles in stator
D) Starting winding

Q78. Direction of a wound armature dc motor can be reversed by:

A) removing the supply voltage
B) reversing current through field winding only
C) reversing current through armature winding and the interpole windings (if they exist)
D) reversing current through both field winding and armature winding.

Q79. Dynamic braking for an induction motor is accomplished by

A) reversing the direction of rotation of the motor
B) connecting dc voltage to stator
C) inserting resistance in series with motor leads
D) disconnecting ac power from motor leads and connecting a DC supply.

Q80. One of the popular programming languages used to program all types of PLCs is:

A) Relay Ladder Logic B) C++ C) Assembly D) BASIC

Q81. Some of the necessary building blocks of a PLC are

A) CPU B) Memory C) I/O Unit D) All the these

Q82. In a VFD the speed of an ac motor is generally being controlled by

A) varying supply voltage B) varying frequency

C) Changing series resistance D) All the above

Q83. Which one of the following is not a non-volatile memory

A) EPROM B) EAROM C) RAM D) ROM

Q84. To prevent the operator from accidently touching the moving parts of a machine, it is fitted with

(A) Belts B) Lights C) Alarms D) Guards

Q85. The degree of closeness of the measured value of a certain quantity with its true value is known as

(A) Precision B) Standard C) Accuracy D) Sensitivity

Q86. Which of the following statements is not true?

A) Grounding is a physical connection to the earth, which is at zero volts.
B) For enhanced worker protection, an additional ground, called the equipment ground is provided
C) There is no risk in operating an equipment even if grounding is removed
D) Grounding is most commonly violated safety standard

Q87. Most common instrument used to measure current through a long cable is:

A) Low resistance Ammeter B) High range power meter

C) A clamp-on meter D) A current Transformer

Q88. An inverter is a device that :

A) Converts AC to DC B) Converts DC to AC C) Is not an integral part of UPS

D) Can function without a battery

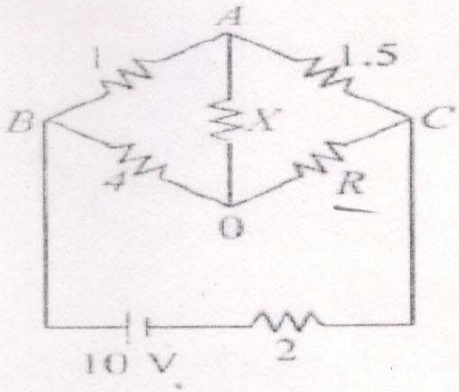
Q89. In a balanced 3 phase system if phase to neutral voltage is 230V then phase to phase voltage will be approximately:

A) 414 Volts B) 400 Volts C) 380 Volts D)440 Volts

Q90. With the increase in temperature, resistance of the insulating material:

A) Increases B) Decreases C) Does not change D) Increases first then decreases

Q91. What will be the value of the resistance 'R' for a balanced condition when current through the branch AO is zero (all resistance values in ohm)



A) 6 ohm B) 4 ohm C) 8 ohm D) 2 ohm

Q92. When 3rd group impurity is added to pure silicon it becomes:

A) P-type semiconductor B) Super-conductor

C) Insulator D) N-Type semiconductor

Q93. A Transistor can be used as a (an) :

A) Oscillator B) Amplifier C) Switch D) All of these

Q94. In which menu of MS-Word one may find utility to create tables

A) Insert B) Draw C) Design D) Layout

Q95. Which one of these is a browser for surfing the internet

A) Chrome B) MS-Office C) Google D) None of these

Post - Technician

Answer Key (GEW)											
1.	A		26.	B		51.	D		76.	D
2.	B		27.	B		52.	B		77.	C
3.	C		28.	D		53.	B		78.	C
4.	A		29.	D		54.	A		79.	D
5.	D		30.	A		55.	D		80.	A
6.	A		31.	B		56.	B		81.	D
7.	B		32.	D		57.	D		82.	B
8.	C		33.	B		58.	C		83.	C
9.	C		34.	C		59.	B		84.	D
10.	D		35.	C		60.	C		85.	C
11.	A		36.	D		61.	C		86.	C
12.	C		37.	C		62.	C		87.	C
13.	C		38.	D		63.	D		88.	B
14.	D		39.	A		64.	B		89.	B
15.	C		40.	B		65.	C		90.	B
16.	C		41.	D		66.	D		91.	A
17.	D		42.	B		67.	C		92.	A
18.	B		43.	D		68.	D		93.	D
19.	B		44.	C		69.	B		94.	A
20.	B		45.	B		70.	A		95.	A
21.	B		46.	B		71.	B			
22.	C		47.	A		72.	A			
23.	C		48.	D		73.	C			
24.	A		49.	C		74.	A			
25.	B		50.	A		75.	A			