

ಕರ್ನಾಟಕ ಪ್ರೌಢ ಶಿಕ್ಷಣ ಪರೀಕ್ಷಾ ಮಂಡಳಿ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು – 560 003

**KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD,
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ಪತ್ರಿಕೆ - 03 / Paper - 03

ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಪೂರಕ ಪರೀಕ್ಷೆ – 2021

S.S.L.C. SUPPLEMENTARY EXAMINATION – 2021

**ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಮೆಕ್ಯಾನಿಕಲ್ ಅಂಡ್ ಎಲೆಕ್ಟ್ರಿಕಲ್ ಇಂಜಿನಿಯರಿಂಗ್ - 2
& ಇಂಜಿನಿಯರಿಂಗ್ ಗ್ರಾಫಿಕ್ಸ್ - 2**

**Subjects : Elements of Mechanical & Electrical Engineering - 2
& Engineering Graphics - 2**

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / English Medium)

ಉತ್ತರಗಳ ಸಂಕೇತಗಳು

KEY ANSWERS

ಸಂಕೇತ ಸಂಖ್ಯೆ : 71-E (RF/RR)

Code No. : 71-E (RF/RR)

ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಮೆಕ್ಯಾನಿಕಲ್ ಅಂಡ್

ಎಲೆಕ್ಟ್ರಿಕಲ್ ಇಂಜಿನಿಯರಿಂಗ್ - 2

**Subject : ELEMENTS OF MECHANICAL AND
ELECTRICAL ENGINEERING-2**

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 50]

[Total No. of Questions : 50

ಗರಿಷ್ಠ ಅಂಕಗಳು : 50]

[Max. Marks : 50

ಈ ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗಳಿಗೆ ಅಥವಾ ಅಪೂರ್ಣ ಹೇಳಿಕೆಗಳಿಗೆ ನಾಲ್ಕು ಆಯ್ಕೆಗಳನ್ನು ನೀಡಲಾಗಿದೆ. ಅವುಗಳಲ್ಲಿ ಸರಿಯಾದ ಉತ್ತರವನ್ನು ಆರಿಸಿ ನಿಮಗೆ ನೀಡಲಾಗಿರುವ ಓ.ಎಂ.ಆರ್. (OMR) ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ನೀಲಿ ಅಥವಾ ಕಪ್ಪು ಶಾಯಿಯ ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್‌ನಿಂದ ಸರಿಯಾದ ಆಯ್ಕೆಯನ್ನು ಶೇಡ್ ಮಾಡಿರಿ :

7725(S) (KA)

[Turn over

Four choices are given for each of the following questions / incomplete statements. Choose the correct answer among them and shade the correct option in the OMR Sheet given to you with a black / blue ball point pen.

50 × 1 = 50

1. Petrol engine always works on
(A) Rankine cycle (B) Carnot cycle
(C) Diesel cycle (D) Otto cycle
Ans. : (D) Otto cycle
2. Which of the following does NOT relate with spark ignition engine ?
(A) Fuel injector (B) Ignition coil
(C) Distributor (D) Spark plug
Ans. : (A) Fuel injector
3. The example for the compression ignition engine is
(A) petrol engine (B) gas engine
(C) diesel engine (D) steam engine
Ans. : (C) diesel engine
4. The function of float in a carburetor is to control
(A) fuel flow rate
(B) level of fuel in chamber
(C) air flow rate
(D) fuel and air mixture flow rate
Ans. : (B) level of fuel in chamber
5. Compression ratio of petrol engines may have a range of
(A) 15 to 25 (B) 25 to 40
(C) 10 to 15 (D) 6 to 10
Ans. : (D) 6 to 10
6. Connecting rod is a link between
(A) piston and the crankshaft
(B) piston and the flywheel
(C) cylinder and the flywheel
(D) cylinder and piston
Ans. : (A) piston and the crankshaft

7. In a four-stroke diesel engine during suction stroke
(A) only diesel is sucked in
(B) both air and diesel are sucked in
(C) only air is sucked in
(D) diesel or air is not sucked in
Ans. : (C) only air is sucked in
8. The air-fuel ratio in a petrol engine is governed by
(A) injector (B) carburetor
(C) governor (D) flywheel
Ans. : (B) carburetor
9. The motion of a piston is
(A) rectilinear (B) rotary
(C) circular (D) oscillatory
Ans. : (A) rectilinear
10. In a four-stroke engine the number of rotations of the crank to complete a working cycle is
(A) 3 (B) 1
(C) 2 (D) 4
Ans. : (C) 2
11. A machine used to raise pressure of air is called
(A) steam engine (B) I.C. engine
(C) gas turbine (D) compressor
Ans. : (D) compressor
12. The commonly used refrigerant in marine refrigerators is
(A) methyl chloride (B) ammonia
(C) sulphur dioxide (D) carbon dioxide
Ans. : (D) carbon dioxide
13. An ideal refrigerant should
(A) have high boiling point (B) have low boiling point
(C) be corrosive (D) be toxic
Ans. : (B) have low boiling point

14. During a refrigeration cycle heat is rejected by the refrigerant in a/an
(A) condenser (B) evaporator
(C) expansion valve (D) compressor
Ans. : (A) condenser
15. The study of conditioning of air for human comfort is called
(A) air cooling (B) air heating
(C) air conditioning (D) air preheating
Ans. : (C) air conditioning
16. In a vapour compression system the lowest temperature during cycle occurs after
(A) evaporation (B) expansion
(C) compression (D) condensation
Ans. : (A) evaporation
17. The refrigeration process is governed by
(A) Second law of thermodynamics
(B) Newton's law
(C) Ohm's law
(D) First law of thermodynamics
Ans. : (A) Second law of thermodynamics
18. The bank of tubes at the back of domestic refrigeration are
(A) evaporator tubes (B) condenser tubes
(C) capillary tubes (D) refrigeration cooling tubes
Ans. : (B) condenser tubes
19. The S.I. unit of volume is
(A) m (B) m^2
(C) m^3 (D) m^4
Ans. : (C) m^3
20. The compressor capacity of a reciprocating compressor is directly proportional to the
(A) air (B) volume
(C) pressure (D) speed
Ans. : (D) speed

21. During machining operation on the lathe the tools are placed on
(A) compound rest (B) tool post
(C) saddle (D) cross slide
Ans. : (B) tool post
22. Grip to hold jobs firmly is done by means of a process called
(A) knurling (B) step turning
(C) facing (D) grinding
Ans. : (A) knurling
23. The tail stock set over is related to
(A) thread cutting (B) plain turning
(C) taper turning (D) boaring
Ans. : (C) taper turning
24. To drill a hole on a lathe a drill bit is held in the
(A) tail stock spindle (B) head stock
(C) compound rest (D) apron
Ans. : (A) tail stock spindle
25. The accurate sizing and finishing operation performed on a previously drilled hole is called as
(A) tapping (B) reaming
(C) drilling (D) spot facing
Ans. : (B) reaming
26. Polishing lathe is a type of
(A) engine lathe (B) tool room lathe
(C) high speed lathe (D) automatic lathe
Ans. : (C) high speed lathe
27. Formula for finding cutting speed of lathe is
(A) $\frac{\pi dn}{1000}$ (B) $\frac{D-d}{2l}$
(C) $\pi r^2 h$ (D) $\frac{D-d}{2} \times \frac{L}{l}$
Ans. : (A) $\frac{\pi dn}{1000}$

28. The standard ground drill has a point angle of
(A) 92° (B) 68°
(C) 112° (D) 118°
Ans. : (D) 118°
29. Which of the following drilling machines is suitable for drilling a job with multiple hole ?
(A) Gang drilling machine (B) Portable drilling machine
(C) Radial drilling machine (D) Bench drilling machine
Ans. : (A) Gang drilling machine
30. A taper shank drill is removed from the drill spindle by a
(A) drill chuck key (B) screw driver
(C) hammer (D) drift
Ans. : (D) drift
31. Whenever the magnetic flux linking with the coil changes an e.m.f. is induced. This law is known as
(A) End rule (B) Lenz's law
(C) Electromagnetic induction (D) Kirchhoff's law
Ans. : (C) Electromagnetic induction
32. A moving coil produces / induces e.m.f. This is in accordance with
(A) Ohm's law (B) Faraday's law
(C) Coulomb's law (D) Ampere's law
Ans. : (B) Faraday's law
33. The laws of electromagnetic induction have been used in the construction of a / an
(A) ammeter (B) voltmeter
(C) electric motor (D) generator
Ans. : (D) generator
34. As per the Fleming's right hand rule the middle finger will give
(A) direction of induced e.m.f.
(B) direction of rotation of coil
(C) direction of magnetic flux
(D) direction of motion of magnet
Ans. : (A) direction of induced e.m.f.

35. Mutual induction principle is used in
(A) generator (B) regulator
(C) transformer (D) rectifier
Ans. : (C) transformer
36. No. of fingers used in Fleming's right hand rule is
(A) three (B) four
(C) two (D) one
Ans. : (A) three
37. Who has stated the laws of electromagnetic induction ?
(A) Henry (B) Faraday
(C) Ohm (D) Kirchhoff
Ans. : (B) Faraday
38. Meter used in electromagnetic induction diagram is
(A) voltmeter (B) wattmeter
(C) galvanometer (D) energy meter
Ans. : (C) galvanometer
39. In India, supply frequency is
(A) 100 c/s (B) 75 c/s
(C) 25 c/s (D) 50 c/s
Ans. : (D) 50 c/s
40. A.C. means
(A) Alternating Current (B) Alternator Current
(C) Applied Current (D) Abnormal Current
Ans. : (A) Alternating Current
41. A.C. supply can be increased or decreased with the help of
(A) alternator (B) transformer
(C) rectifier (D) regulator
Ans. : (B) transformer
42. One full cycle has
(A) 90° (B) 180°
(C) 270° (D) 360°
Ans. : (D) 360°

43. Number of cycles completed in one second is called
(A) time period (B) cycle
(C) frequency (D) amplitude
Ans. : (C) frequency
44. Peak value is also called
(A) maximum value (B) minimum value
(C) r.m.s. value (D) average value
Ans. : (A) maximum value
45. S.I. unit of power is
(A) ampere (B) watt
(C) volt (D) ohm
Ans. : (B) watt
46. Thermostat is used in electric
(A) fan (B) motor
(C) regulator (D) automatic iron
Ans. : (D) automatic iron
47. Electric bell consists of
(A) galvanometer (B) rectifier
(C) electromagnet (D) ammeter
Ans. : (C) electromagnet
48. No. of free electrons in the outermost orbit in the silicon atom is
(A) 4 (B) 3
(C) 2 (D) 1
Ans. : (A) 4
49. Which is 'N' type semiconductor ?
(A) Excess of holes
(B) Excess of free electrons
(C) Deficiency of free electrons
(D) Holes are in the majority carriers
Ans. : (B) Excess of free electrons
50. PN-junction diode is having
(A) 2-junctions (B) 3-junctions
(C) 1-junction (D) 4-junctions
Ans. : (C) 1-junction