

# 65/2019

Question Booklet  
Alpha Code

**A**

Question Booklet  
Serial Number

Total Number of questions : 100

Time : 75 Minutes

Maximum Marks : 100

## INSTRUCTIONS TO CANDIDATES

1. The question paper will be given in the form of a Question Booklet. There will be four versions of question booklets with question booklet alpha code viz.A,B,C & D.
2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the question booklet.
3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
4. If you get a question booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your question booklet is unnumbered, please get it replaced by new question booklet with same alpha code.
6. The question booklet will be sealed at the middle of the right margin. Candidate should not open the question booklet, until the indication is given to start answering.
7. Immediately after the commencement of the examination, the candidate should check that the question booklet supplied to him contains all the 100 questions in serial order. The question booklet does not have unprinted or torn or missing pages and if so, he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
8. A blank sheet of paper is attached to the question booklet. This may be used for rough work.
9. **Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.**
10. Each question is provided with four choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball Point Pen in the OMR Answer Sheet.
11. **Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.**
12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.

**A**



DO NOT WRITE HERE

001. Angle plate is made at an angle of \_\_\_\_\_  
(A) 30° (B) 45°  
(C) 90° (D) 60°
002. Vernier calipers are \_\_\_\_\_ instruments  
(A) accurate (B) semi-precision  
(C) non-precision (D) precision
003. In an open circuit \_\_\_\_\_  
(A) Resistance is zero and current is infinity  
(B) Resistance is infinity and current is zero  
(C) Resistance and current are zero  
(D) Resistance and current are infinity
004. Soft soldering is generally done \_\_\_\_\_  
(A) At 1200°C (B) Above 450°C  
(C) Between 800°C and 1050°C (D) Below 450°C
005. The reciprocal of resistivity is called  
(A) permeability (B) conductance  
(C) permittance (D) conductivity
006. Capacitance of a capacitor can be measured by using \_\_\_\_\_  
(A) AC Bridge (B) Analog multimeter  
(C) Kelvin Bridge (D) Wheatstone Bridge
007. The unit of luminous intensity is  
(A) Lux (B) Lumex  
(C) Tesla (D) Candela
008. Which of the following meters is an integrating type instrument?  
(A) Watt meter (B) Ammeter  
(C) Energy meter (D) Voltmeter



009. Permanent magnet moving coil instruments can be used for the measurement of

- (A) AC only
- (B) DC only
- (C) Both AC and DC
- (D) None of these

010. Load cells are used for the measurement of \_\_\_\_\_

- (A) flow
- (B) velocity
- (C) weight
- (D) displacement

011. The commonly used gas in Class III filled system is

- (A) Oxygen
- (B) Helium
- (C) Nitrogen
- (D) Hydrogen

012.  $5.5 \text{ kg/cm}^2 =$  \_\_\_\_\_ Psi

- (A) 78.27
- (B) 80.85
- (C) 76.02
- (D) 75.45

013. The property of liquid's resistance to flow

- (A) Compressibility
- (B) Surface tension
- (C) Velocity
- (D) Viscosity

014. The dimensionless quantity used to identify the type of flow

- (A) Beta ratio
- (B) Reynold's number
- (C) Dielectric constant
- (D) Coefficient of discharge

015. The angle of inclination of the inclined manometer is of the order of

- (A)  $15^\circ$
- (B)  $20^\circ$
- (C)  $10^\circ$
- (D)  $25^\circ$

016. Torr is the unit for the measurement of

- (A) Level
- (B) Speed
- (C) Pressure
- (D) Specific gravity

017. The agreement with true value is called
- (A) Sensitivity (B) Accuracy  
(C) Precision (D) Span
018. Example of derived unit
- (A) metre (B) second  
(C) velocity (D) None of these
019. The speed at which an instrument responds to changes in input variable is called
- (A) Fidelity (B) Lag  
(C) Speed of response (D) Sensitivity
020. Example of primary sensor of differential head flow meter
- (A) orifice plate (B) bellows  
(C) manometer (D) rotameter
021. Modified form of venturi tube is
- (A) pitot tube (B) rotameter  
(C) dall tube (D) weirs and notches
022. Density of a fluid decreases with increase in
- (A) Pressure (B) Temperature  
(C) Flow (D) Level
023. Dead weight tester works on the principle of
- (A) Conservation of energy (B) Bernoulli's theorem  
(C) Pascal's law (D) Hooke's law
024. \_\_\_\_\_ is used for the measurement of differential pressure
- (A) Pitot tube (B) Pirani gauge  
(C) Manometer (D) Barometer



025. Non-contact method of level measurement is

- (A) sight glass
- (B) dall tube
- (C) ultrasonic type
- (D) Piezoelectric type

026. Basic principle of LVDT is

- (A) magnetic effect
- (B) mutual induction
- (C) induced emf
- (D) Hysteresis effect

027. The nominal voltage of a fully charged lead acid cell is

- (A) 1.1 V
- (B) 1.5 V
- (C) 3.0 V
- (D) 2.2 V

028. Extension of ammeter range is obtained by connecting

- (A) Low resistance in series
- (B) High resistance in parallel
- (C) Low resistance in parallel
- (D) High resistance in series

029. PMMC type instruments can be used for measuring in

- (A) AC circuits only
- (B) DC circuits only
- (C) Both AC and DC circuits
- (D) Neither AC nor DC circuit

030. The form factor of half wave is

- (A) 1
- (B) 1.57
- (C) 1.11
- (D) 2

031. For stabilizing the gain of an amplifier

- (A) Positive feedback is used
- (B) No feedback is used
- (C) Input voltage is varied
- (D) Negative feedback is used

032. 8085 microprocessor has how many pins?

- (A) 30
- (B) 41
- (C) 39
- (D) 40

033. SCR is a \_\_\_\_\_ switch
- (A) Unidirectional (B) Bidirectional  
(C) Three directional (D) None of these
034. Which semiconductor power device out of the following is not a current triggered device?
- (A) Thyristor (B) Triac  
(C) GTO (D) MOSFET
035. Modem is used for
- (A) Printing (B) Video editing  
(C) Data display (D) Dial-up connection
036. A microprocessor performs the functions of CPU of a \_\_\_\_\_
- (A) Control bus (B) Digital computer  
(C) Memory (D) Data bus
037. Zener diode is used as
- (A) Amplifier (B) Switch  
(C) Regulator (D) None of these
038. Which of the following is not an advantage of negative feedback?
- (A) Reduced noise (B) Increased gain  
(C) Reduced distortion (D) Increased sound quality
039. The oscillator which generates sine wave oscillations is called
- (A) Feedback oscillator (B) Harmonic oscillator  
(C) Damped wave oscillator (D) Relaxation oscillator
040. The input resistance of an Op–Amp is about
- (A) 2 k $\Omega$  (B) 20 m $\Omega$   
(C) 2 m $\Omega$  (D) 200 k $\Omega$



041. The most heavily doped region in a transistor is
- (A) Collector (B) Emitter  
(C) Base (D) Both (A) and (C)
042. Which of these is a volatile memory?
- (A) RAM (B) ROM  
(C) PROM (D) EPROM
043. The decimal equivalent of the hexadecimal number A0H is
- (A) 100 (B) 256  
(C) 80 (D) 160
044. The gates required to build a half adder are
- (A) EX-OR and NAND gate (B) EX-OR and AND gate  
(C) EX-OR and NOR gate (D) Four NAND gates
045. \_\_\_\_\_ and \_\_\_\_\_ gates are called universal gates
- (A) AND, OR (B) NOT, OR  
(C) NAND, NOR (D) NAND, AND
046. The length of program counter (PC) of 8085 microprocessor is \_\_\_\_\_
- (A) 6 Bits (B) 12 Bits  
(C) 8 Bits (D) 16 Bits
047. When the source voltage increases in a zener regulator, the \_\_\_\_\_ current remains constant approximately
- (A) Series (B) Load  
(C) Zener (D) Total
048. The instrument which is not suitable for the application in automatic control scheme
- (A) Pitot static tube (B) Rotameter  
(C) Orifice plate (D) Rotary piston meter

049. Absolute zero on Kelvin scale is equal to
- (A) 273 K (B) 373 K  
(C) 0 K (D) None of these
050. Temperature of core of earth is equal to 3727°C. This temperature in Kelvins is equal to
- (A) 4000 K (B) 3727 K  
(C) 3454 K (D) None of these
051. Dip sticks are used for the
- (A) Flow measurement (B) Pressure measurement  
(C) Displacement measurement (D) Level measurement
052. IPTS stands for
- (A) Indian Primary Temperature Scale  
(B) International Primary Temperature Scale  
(C) International Practical Temperature Scale  
(D) International Practical Temperature Standard
053. Output of a Bimetallic element will be
- (A) Voltage (B) Displacement  
(C) Strain (D) Pressure
054. Which device is similar to an RTD but has a negative temperature coefficient?
- (A) Thermistor (B) Negative-type RTD  
(C) Thermocouple (D) Strain gauge
055. The ionization gauge is an instrument used for the measurement of
- (A) Very high pressure (B) Medium pressure  
(C) Very low pressure (D) High pressure



056. A capacitive pressure sensor has a typical measurement uncertainty of

- (A)  $\pm 0.4\%$  (B)  $\pm 0.2\%$   
(C)  $\pm 0.1\%$  (D)  $\pm 0.8\%$

057. The RS Flip-flop has \_\_\_\_\_ input/s

- (A) One (B) Three  
(C) Four (D) Two

058. The current gain is highest in \_\_\_\_\_ amplifiers.

- (A) Common collectors (B) Common emitters  
(C) Common base (D) All of these

059. In Boolean algebra,  $A + (A.B) =$  \_\_\_\_\_

- (A) A.B (B) B  
(C) A (D) 1

060. The DIAC is used as a triggering device for

- (A) FET (B) TRIAC  
(C) SCR (D) UJT

061. To avoid the creeping error in the energy meters, the discs must

- (A) Be Laminated (B) Be thin  
(C) Have bar magnet (D) Have holes

062. Output of an I to P converter is \_\_\_\_\_  $\text{kg/cm}^2$

- (A) 0 to 1 (B) 1.5 to 7  
(C) 3 to 15 (D) 0.2 to 1

063. Potentiometer is a/an \_\_\_\_\_ instrument

- (A) Recording (B) Indicating  
(C) Comparison (D) Calibrating

064. A transistor is \_\_\_\_\_ operated device
- (A) Voltage (B) Current  
(C) Both voltage and current (D) None of the above
065. Reynolds number for turbulent flow is
- (A) Less than 1000 (B) More than 4000  
(C) Less than 2000 (D) Between 1000 and 2000
066. Well-type manometer is \_\_\_\_\_ accurate than u-tube manometer
- (A) More (B) Less  
(C) Equal (D) None of these
067. For flow measurement of highly corrosive and erosive fluid \_\_\_\_\_ is used
- (A) Ventury meter (B) Rotameter  
(C) Elbow tap (D) Magnetic flow meter
068. \_\_\_\_\_ is the final control element in most process control systems
- (A) Transmitter (B) Amplifier  
(C) Controller (D) Control valve
069. The 2's complement of the number 1101101 is
- (A) 0101110 (B) 0110010  
(C) 0010011 (D) 0111110
070. If proportional band is more, controller response will be
- (A) More (B) Less  
(C) Medium (D) None of the above
071. PLC is used for \_\_\_\_\_ application
- (A) control (B) flow  
(C) level (D) counting



072. SCADA stands for

- (A) Statutory control for acquisition of Data Analog
- (B) Supervisory control and Data acquisition
- (C) Standard counting of Analog to digital application
- (D) Supervisory control on Analog to digital analysis

073. Thermo couples are arranged in \_\_\_\_\_ to form a thermopile.

- (A) Parallel
- (B) Series
- (C) Inclined
- (D) None of the above

074. Overshoot oscillation will be reduced by \_\_\_\_\_ action

- (A) Integral
- (B) Derivative
- (C) Proportional
- (D) None of the above

075. The range of PH of acidic solution is

- (A) 14
- (B) between 0 and 7
- (C) 16
- (D) between 7 and 14

076. Viscosity of air \_\_\_\_\_ with increase of temperature

- (A) Increases
- (B) Decreases
- (C) No change
- (D) None of the above

077. In closed loop control system, the input has control over

- (A) Output
- (B) Feedback
- (C) Set point
- (D) Open Loop

078. The most popular medium for the data highway is

- (A) Modem
- (B) Internet
- (C) Web
- (D) Ethernet

079. A Hydraulic controller has \_\_\_\_\_ power gain
- (A) Low (B) Medium  
(C) High (D) None of the above
080. 2-wire smart DP transmitter output follows \_\_\_\_\_ protocol
- (A) ASCII (B) RS485  
(C) HART (D) RS232
081. Relay is a/an
- (A) ordinary switch (B) passive switch  
(C) electro magnetic switch (D) All of these
082. With increase in the intensity of light, the resistance of a photo voltaic cell
- (A) remains same (B) decreases  
(C) increases (D) none of these
083. The unit of measurement of pressure is
- (A)  $\text{Kg m}^{-3}$  (B)  $\text{m}^2$   
(C)  $\text{ms}^{-2}$  (D)  $\text{Nm}^{-2}$
084. Temperature range of Thermistor is
- (A)  $60^\circ\text{C}$  to  $-15^\circ\text{C}$  (B)  $-60^\circ\text{C}$  to  $15^\circ\text{C}$   
(C)  $60^\circ\text{C}$  to  $15^\circ\text{C}$  (D)  $-60^\circ\text{C}$  to  $20^\circ\text{C}$
085. The BJT is a \_\_\_\_\_ controlled device
- (A) Voltage (B) Current  
(C) Temperature (D) None of these
086. The accuracy of a pneumatic controller is about
- (A)  $\pm 2\%$  (B)  $\pm 1\%$   
(C)  $\pm 4\%$  (D)  $\pm 5\%$



087. Any externally introduced signal affecting the controlled output is called
- (A) Feedback (B) Stimulus  
(C) Signal (D) Gain control
088. As a result of introduction of negative feedback which of the following will not decrease?
- (A) Overall gain (B) Distortion  
(C) Bandwidth (D) Instability
089. The bulbs of filled system thermometers are usually made of
- (A) Copper (B) Glass  
(C) Plastic (D) Stainless steel
090. Strip chart recorder is a
- (A) Oscillographic recorder (B) Graphic recorder  
(C) Magnetic type tape recorder (D) None of these
091. Venturi tubes are generally made of
- (A) Phosphor bronze (B) Cast Iron  
(C) Nickel (D) All of these
092. Set point of a system is also called
- (A) Disturbance (B) Desired value  
(C) Controlled variable (D) Manipulated variable
093. Ratio control system is a special type of
- (A) Open-Loop system (B) Feedback system  
(C) ON-OFF system (D) Feed forward system
094. A thermo couple gauge is one type of
- (A) McLeod gauge (B) Ionization gauge  
(C) Thermal conductivity gauge (D) None of these

095. Which of the following cannot be used for negative pressure?
- (A) Piezo meter (B) Pirani gauge  
(C) Bourdon tube gauge (D) U-tube manometer
096. A vibrating level sensor consists of
- (A) One piezo electric oscillator (B) Two piezo electric oscillators  
(C) Three piezo electric oscillators (D) Four piezo electric oscillators
097. The Gates required to build a half-adder are
- (A) EX-OR and NAND gate (B) Four NOR gates  
(C) EX-OR and AND gate (D) Four NAND gates
098. Which of the following instruments is a rate meter?
- (A) Current meter (B) Venturi meter  
(C) Hot wire anemometer (D) None of the above
099. A flow meter that measures flow rates which are independent of density is
- (A) Orifice meter (B) Rotameter  
(C) Magnetic flow meter (D) Venturi meter
100. A SCADA system will only monitor and never make changes to the operations
- (A) True (B) False  
(C) Cannot say (D) None of these
-



SPACE FOR ROUGH WORK

