Sample Test Paper

IN : Instrumentation Engineering

Duration : 20 Min. Maximum Marks : 16

Q.1 – 4 carry one mark each

1. Dead zone in a certain thermocouple is 0.25% of span. The calibration is 100°C to 500°C. What temperature change might occur before it is detected

(A) 0.25°C (B) 0.5°C

(C) 0.125°C (D) 0.625°C

2. A low pass filter has an input S/N of 20. The input voltage is 3mV. Calculate the noise voltage.

(A) 0.387mV (B) 0.15mV

(C) 0.086mV (D) 0.67mV

3. A thermometer is calibrated 150°c to 200°c. the accuracy is simplified within $\pm 0.25\%$. Determine maximum static error.

(A) ± 0.01°c (B) ± 0.75°c

(C) ± 0.3°c (D) ± 0.125°c

4. Which of the following displacement transducer covering large displacement range

(A) LVDT

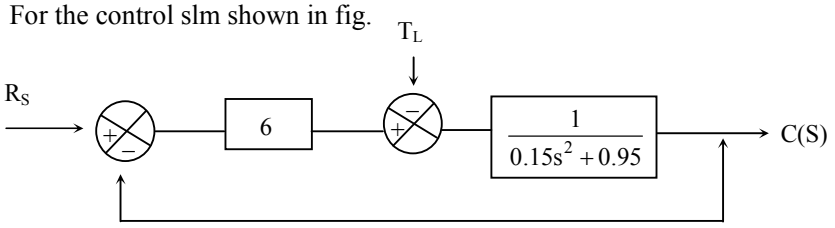
(B) Potentiometer

(C) Variable capacitance transducers

(D) RVDT

Q.5 – 10 carry two marks each

5. For the control slm shown in fig.



Calculate the steady state value of the output when the input shaft is held fixed & a sudden forque $T_L = 1$ Nm is applied.

(A) –0.133 (B) –1

(C) –0.166 (D) $-\infty$

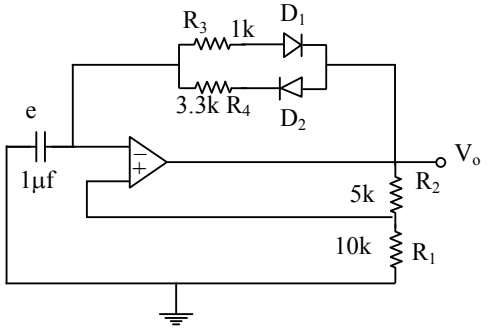
6. Calculate output frequency

(A) $358.16H_Z$

(B) $217.39H_Z$

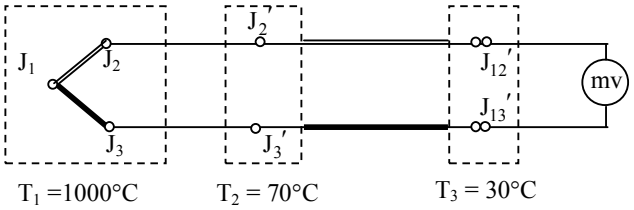
(C) $716.33H_Z$

(D) $334.4H_z$

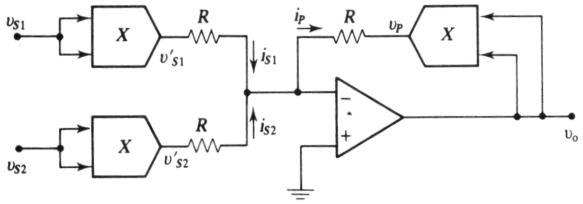


7. Determine ΔT

(A) 970°C
(B) 40°C
(C) 900°C
(D) 80°C



8 Determine V_o



(A) $-\left(VS_1^2 + VS_2^2\right)$
(B) $-\left(VS_1 + VS_2\right)$
(C) $\sqrt{-\left(VS_1^2 + VS_2^2\right)}$
(D) none of the above

9. The first four instructions of a subroutine are.
PUSH B
PUSH D
PUSH H
PUSH PSW
What will be the last six instructions of the sub routine?

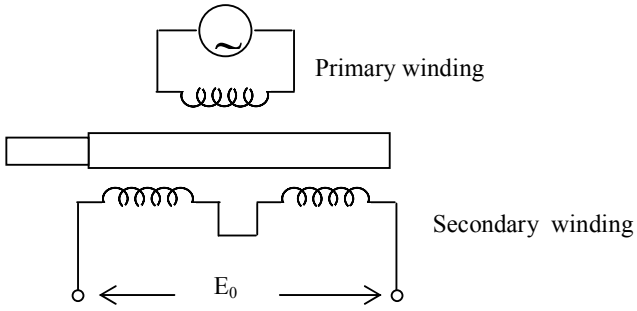
(A)
POP PSW
POP H
POP D
POP B
EI
RET

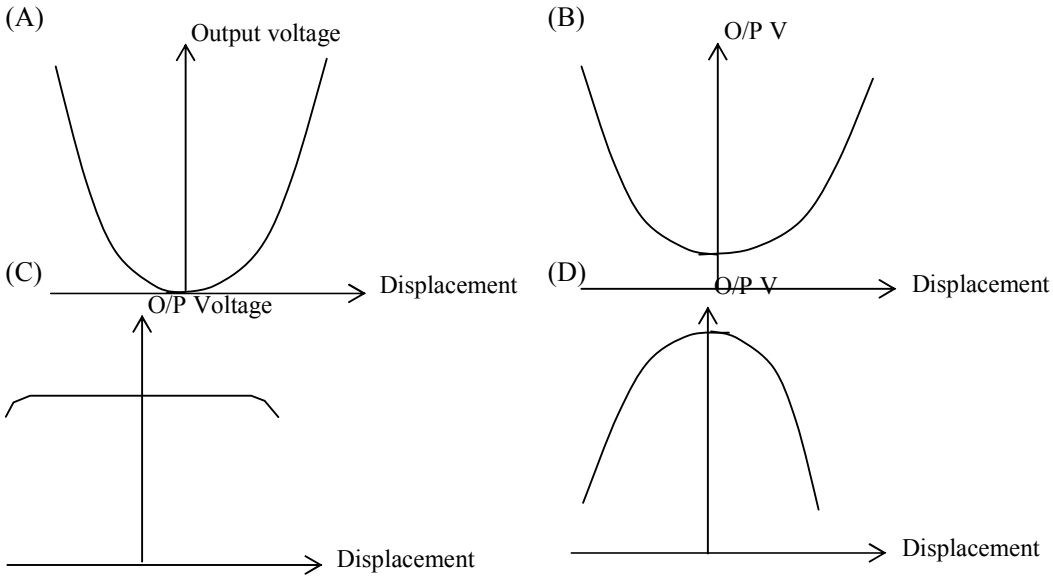
(B)
POP PSW
POP H
POP D
POP B
END
RET

(C)
POP B
POP D
POP H
POP PSW
EI
RET

(D)
POP B
POP D
POP H
POP PSW
END
RET

10. Fig shows LVDT with primary and secondary windings are connected as shown in fig. Give output waveform




(A)
Output voltage
Displacement
(B)
O/P V
Displacement
(C)
O/P Voltage
Displacement
(D)
O/P V
Displacement

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