LAGOS CITY POLYTECHNIC, IKEJA SCHOOL OF ENGINEERING AND APPLIED SCIENCE

| 1. (a) | (i) Explain the function of Taetransducer in rengineering measurement. (ii) Epartine function of transducers used in the measurement of | | | | |
|-----------------------------------|--|--|--|--|--|
| physical | (ii) List three different types of transducers used in the measurement of 2015/2016 SEMESTER EXAMINATION | | | | |
| | quantities and state the physical quantity each is used to measure. | | | | |
| COURSE | Briefly explain the following as applied to signal from the fransducer (i) Signal AND CONTROL III CODE: FEL 311 TIME: ALLOWED: | | | | |
| COURSE | CODE: Signal 311 TIME: ALLOWED: | | | | |
| 2 ¹ / ₂ HRS | (iii) Calibration | | | | |
| FOR WHO Answera) a | OM: HND YR I FE P/T INSTRUCTIONS: TY) List 3 types of temperature transducers and indicate which is active and | | | | |
| which (a) | (i) Explain the function of a transducer in engineering measurement: (ii) Explain the function of a transducer in engineering measurement: (iii) Explain the difference types (i) transducers the difference in the measurement in the measuremen | | | | |
| transducer. | (ii) Explain what than pens in the first ucers disear in the measurement of | | | | |
| priysicar | quantities and state the physical quantity each is used to measure. | | | | |
| (b) | quantities and state the physical quantity each is used to measure. Conver the following from: Printly 2000 Flain the following as applied to office the traffic blood in the following from the traffic blood. | | | | |
| (b) | By iefly 2000 plain the following as applied to signal from the transmitted (ii) Sound to °R confidence of the confidenc | | | | |
| | (ii)) S20 Ping to °F. | | | | |
| (-) | (iii) Calibration | | | | |
| (c) the (a) | Write down the mathematical expression for calculating the emf produced from (i) List 3 types of temperature transducers and indicate which is active and | | | | |
| which | junctions of two dissimilar metals kept at temperatures T_1 and T_2 (Tpassive). | | | | |
| 1 | (ii) Explain what happens in (i) active transducer and (ii) passive | | | | |
| transducer. 10°C and | Determine. The emf produced for a thermocouple whose junction are kept at 90°C, respectively. Thermoelectric constant at 10°C is 50μv/°C and | | | | |
| that (b) | Conver 90°C the is followings/ from: | | | | |
| 3. (a) | (i) 200°F to °K (Kelvin) | | | | |
| 3. (a) | (i) What does the term to RTD stand for in resistance thermanation (ii) Explain briefly the working of RTD so and name the two major types of | | | | |
| resistance | (H) 924 Em offerly the worlding of the 240 mile the two major types p. | | | | |
| (c) the | Write down dream thematical expression for calculating the emf produced from | | | | |
| (b) circuit | One of the applications of RTD is overcurrent protection of electrical load in a junctions of two disimilar metals kept at temperatures T_1 and T_2 $(T_1 > T_2)$. | | | | |
| .1 | The chirile the washows are of the arrangements for whose san Explain fully prox | | | | |
| ₩C and that | 90°C, respectively. Thermoelectric constant at 10°C is 50μν/°C and circuit works to is provide protection. | | | | |
| (c) | The shunt winding of a motor has a resistance of 80Ω at 15° C. Find the its (i) What does the term RTD stand for in resistance thermometers at | | | | |
| resistance | (i) C. Explain briefly the awarking of cremps and pame the two on a types of | | | | |
| resistance | . (resistance temperature escriberent of copper is a 0.004/30 ta-0 0). | | | | |
| 4. (a) | Describe the principles of pressure measurement using the following devices. | | | | |
| (b) circuit | State of the applications of RTD is disadvantages protection by electrical load in a manometer | | | | |
| | The curcuit below shows are of the arrangements for such use. Explain fully how (iii) Bourdon tube. | | | | |
| the | use diagrams to to provide upport overcurrent protection. | | | | |
| (h) | 1 | | | | |
| (b) ggaistance | The short invainding eofs how or insederousies were the spessared of Coi Finds phecific at | | | | |

6086 floresistana piperiperature from filicie connected porthis pape and the right Original to the atmosphere. The centre of the pipe is 100mm below the level

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