Register Number.....

B.E.DEGREE EXAMINATIONS: OCTOBER / NOVEMBER 2008

Third Semester

ELECTRONICS & COMMUNICATION ENGINEERING

U07 EC 304 - Measurements & Instrumentation

Time: Three Hours **Maximum Marks: 100**

PART A (20 x 1 = 20 Marks)

1. Dynamic characteristic of measurement system includes
   a. Zero drift c. Step I/P
   b. Ramp I/P d. Fidelity
2. The abbreviation SI stands for
   a. Stationary unit c. International System of Units
   b. Indian System of Units d. International Units
3. The type of standards of measurements, which is to be excluded is,
   a. International standard c. Working Standard
   b. Primary Standard d. Basic standard
4. In a voltmeter, if Rs=7V and Rm=2V, the multiplier factor will be,
   a. 5.5 b. 6.6 c.3.5 d 4.5
5. Post acceleration is required in a CRO, if the frequency of signal is
   a. Less than 1 MHz c. Greater than 10 MHz
   b. Greater than 1 MHz d. Greater than 10 Hz.
6. Electronic Voltmeter which use rectifiers employ negative feedback. This is done to
   a. Increase the overall gain c. Overcome non-linearity of diodes
   b. Improve stability d. Compensate power.
7. The meter which measures the amplitude of a signal at two points in a circuit and simultaneously the phase difference between voltage waveform is called
   a. Q meter c. Differential voltmeter
   b. Vector voltmeter d. Multimeter.
8. A small change in output to input is known as
   a. Precision c. Linearity
   b. Sensitivity d. Threshold
9. A function generator can supply output waveform at
   a. Very High frequency c. High frequency
   b. Low frequency d. Very low frequency
10. In Swept frequency generator, delta frequency mode is used to
    a. To set start frequency c. Narrow sweep width
    b. To set stop frequency d. Widen sweep width
11. A wave analyzer is circuit that can measure..... of the signal.
    a. Single frequency c. Phase
    b. Amplitude d. current
12. In harmonic distortion analyzer, the distortion factor can be represented as
    a. $\sqrt{(D_2 + D_3 + D_4 .....)}$ c. $(D_2 + D_3 + D_4 .....)$
    b. $(D_2 + D_3 + D_4)$ d. $\sqrt{(D_2^2 + D_3^2 + D_4^2 + ...)}$
13. In a digital voltmeter, the ADC is followed by
    a. Signal processing c. Display
    b. Data transmission element d. Oscillator.

14. In frequency ratio measurement the amplitude output is applied to
    a. Gate
    b. Schmitt Trigger
    c. Decimal counter
    d. Display unit

15. A digital voltmeter using ADC is
    a. Divial slope converter
    b. Digital ramp converter
    c. Successive approximation converter
    d. Analog ramp converter.

16. The transimpedance of the amplifier is the ratio of
    a. CRO output to current
    b. Photocurrent to voltage level
    c. Amplifier Input to Impedance level.
    d. Amplifier output to photodiode current.

17. The device used for maintenance, troubleshooting and measurement system of optical fiber is,
    a. Transimpedance amplitude.
    b. Avalanche diode
    c. OTDR
    d. IEEE488

18. The data logger is an application of
    a. PC based system
    b. Data acquisition system
    c. ADC
    d. IEEE 488 standard

19. The IEEE488 interface standard is also called as
    a. Multibus
    b. RS232
    c. General Purpose Interface Bus(GPIB)
    d. RS422

20. The term which is not relevant to OFC is
    a. Core
    b. Cladding
    c. Fading
    d. Numerical aperture

PART B (5 x 16 =80 Marks)

21. (a) Explain Maxwell and Wein-Bridge in detail with necessary diagrams (16)

(OR)

(b) Explain the advantage of True RMS meter with its circuit diagram. (16)

22. (a) Briefly explain RF and power measurements. (16)

(OR)

(b) Explain the working of Electronic Multimeter with neat diagrams. (16)

23. (a) Explain the Working of Spectrum Analyzer in detail. (16)

(OR)

(b) Explain the Working of Frequency synthesizer in detail. (16)

24. (a) Define measurement error. Explain with necessary examples. (16)

(OR)

(b) Explain the working of Digital Voltmeter with necessary diagrams. (16)

25. (a) Write short notes on:
    i) Digital Data Acquisition System (8)
    ii) Optic Fiber Measurement (8)

(OR)

(b) Explain briefly the working principle of Optical Time Domain Reflectometer. (16)

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