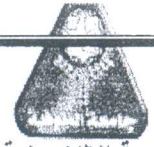




الفريق الثاني  
صيدم

9



اسم المادة : دوائر الكترونية الفرقة الثانية  
زمن الامتحان : نصف ساعة  
(دكتور عادل شاكر الفيشاوي)

كلية الهندسة الالكترونية بمنوف  
قسم : هندسة الاتصالات والكهربية  
تاريخ الاختبار الأربعاء ٣ ابريل ٢٠١٩

امتحان أعمال السنة الفصل الدراسي الثاني- الجزء الثاني (دكتور عادل شاكر الفيشاوي)

**Answer all the following questions**

- 1) In a zero-level detector, the output changes state when the input  
(a) is positive (b) is negative (c) crosses zero (d) has a zero rate of change.
- 2) A summing amplifier can have  
(a) only one input (b) only two inputs (c) only one output (d) any number of inputs (e) c and d.
- 3) For a step input, the output of an integrator is  
(a) a pulse (b) a triangular waveform (c) a spike (d) a ramp
- 4) The rate of change of an integrator's output voltage in response to a step input is set by  
(a) the RC time constant (b) the amplitude of the step input  
(c) the current through the capacitor (d) all of these
- 5) The output of a differentiator is proportional to  
(a) the RC time constant (b) the rate at which the input is changing  
(c) the amplitude of the input (d) answers (a) and (b)
- 6) A certain op-amp has an open-loop gain of 80,000. The maximum saturated output levels of this particular device are when the dc supply voltages are If a differential voltage of 0.15 mV rms is applied between the inputs, the peak-to-peak value of the output is .....
- 7) If the input to an Op-Amp logarithmic amplifier is x, the output will be equal to .....
- 8) In astable timer 555, the maximum voltage across the external capacitor used is ....., while the minimum value is .....
- 9) The output voltage of a twin T filter (notch filter) at resonance frequency  $f_r$  equals to .....
- 10) At resonance frequency  $f_r$ , the output voltage of the lead-lag circuit of Wienbridge oscillator is equal to ....., while the phase equals to .....
- 11) The 555 timer can be used as a voltage-controlled oscillator (VCO) by .....
- 12) A voltage follower  
(a) has a gain of 1 (b) is noninverting. (c) has no feedback resistor (d) has all of these.
- 13) If  $R_f$  is increased in the circuit of noninverting op-amp, the voltage gain will  
(a) increase (b) decrease (c) not change.
- 14) If 10 mV are applied to the input to inverting the op-amp and  $R_f$  is increased, the output voltage will  
(a) increase (b) decrease (c) not change.
- 15) If  $A_{ol}$  equals to 3500 and  $A_{cm}$  equals to 0.35, the CMRR is  
(a) 1225 (b) 10,000 (c) 80 dB (d) answers (b) and (c).
- 16) The output of a particular op-amp increases 8 V in 12  $\mu$ A. The slew rate is  
(a) 96 V/ $\mu$ S (b) 1.5 V/ $\mu$ S (c) 0.67 V/ $\mu$ S (d) none of these.
- 17) The frequency of oscillation  $f_r$  of a sinusoidal oscillator is mainly determined by  
(a) voltage gain of the op-amp  $A_v$  used (b)  $A_v \beta$  (c) the attenuation of the feedback circuit  $\beta$   
(d) the resonant frequency of the feedback circuit (e) answers (c) and (d).
- 18) Draw and compare the frequency response of Op-Amp before and after negative feedback.
- 19) When negative feedback is used, the gain-bandwidth product of an op-amp  
(a) increases (b) decreases (c) stays the same (d) fluctuates.
- 20) For an oscillator to properly start, the gain around the feedback loop must initially be  
(a) less than one (b) one (c) greater than one (d) equal to  $\beta$ .

توقيع أستاذ المادة :