1. Performance Test: [Mark:30]

ID = AB-CDEFG-H,

I. Generate a composite signal using two simple cosine signals with f1=D*10, f2=E*10 and A1=C, A2=G. **Choose** appropriate sampling frequency. **[10]**

II. Add noise to the composite signal using **randn** function, where the amplitude of the noise, s=B*F. **[5]**

III. **Produce** 2 graphs (composite signal and noisy signal) with proper labeling using **subplot** function. **[5]**

IV. Calculate the SNR and SNR_{dB} value of the noisy signal. **[5]**

V. Find the bandwidth of the signal and calculate the maximum capacity of the channel. **[5]**