

No : **Answer**

Name : **Solution**

Eskişehir Osmangazi University, Faculty of Engineering and Architecture

Department of Electrical Engineering & Electronics, "Communications" Final

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SSRG[10,3] sequence is used to spread a baseband signal with 100 ksym/s. The rate of the pn-sequence is 2 periods/symbol. The resulting spread signal is multiplied with a carrier with $f_c=4.d_1d_0$ GHz where d_1d_0 is the last two digits of your student-id. For example, if the last two digits of your student id is 49 then $f_c=4.49$. Find the bandwidth of the modulated signal.

Put your calculations/results **in the** drawing canvas below. **Do not** change anything else except putting your name/id on top of the page.

Solution:

$$L_{seq}=1023$$

$$R_{symbol} = 100000 \text{ symbol/s}$$

$$R_{seq} = 2 \times 1023 \times 100000 = 204600000 \text{ chips/s}$$

$$BW_{baseband} = 204.6 \text{ MHz}$$

$$BW_{passband} = 409.2 \text{ MHz}$$

Carrier frequency does not affect the bandwidth when $f_c \gg BW_{baseband}$

Upload your answer (word or pdf) before 10:25. **No e-mails** will be accepted.