**"** **Fiber optic communication lines "**

**exam program in the discipline**

**According to the educational program "6B06201-Radio engineering, electronics and telecommunications"**

**4th year, s/p**

**Number of students-3**

EXAM IN WRITING:

TYPE: A TICKET IS GENERATED FROM THE FUND OF QUESTIONS FOR EACH STUDENT, FOR EACH QUESTION YOU NEED TO CHOOSE THE CORRECT ANSWER

The number of questions on the exam is 60.

The process of a student's written exam involves the automatic creation of questions. The student must write a written answer to each question.

**THE ORDER OF THE EXAM**

**THE MAIN THING** is that the exam is conducted according to a schedule that should be known in advance.

The assessment of the exam is issued within 48 hours. An appeal can be filed within 24 hours from the end of the exam.

Possible reasons for the appeal: A) inconsistency of the test question with the curriculum; B) incorrect presentation of questions or answers (technical reason); С) lack of a "correct" answer.

Assessment rule: each student is asked 40 questions.2 points for each correct answer.

Exam=80\*1.25=100%

95 – 100%: A 90 – 94%: A-

85 – 89%: B+ 80 – 84%: B 75 – 79%: B-

70 – 74%: C+ 65 – 69%: C 60 – 64%: C-

55 – 59%: D+ 50 – 54%: D- 0 – 49%: F

**To pass the exam, a student needs to know the following topics**

1. Classification and application of optical communication systems

2. Digital optical communication system

3. Sources of optical radiation

4. Modulation of optical radiation

5. Light Emitting Diode (LED) and its working principle

6. Technical characteristics of photodetectors (PD)

7. Optical amplifiers and regenerators

8. Sealing - temporary, frequency

9. Transparency windows

10. Multiplexers

**Basic literature:**

1. Н.Н.Фомин и др. Радиоприемные устройства. – М.: Горячая линия –Телеком, 2005. – 472 с.: ил.

2.Шахгильдян. Радиопередающие устройства (Базовые методы и характеристики). - М.: Экотрендз,2005. – 392 с.: ил. 3.Карташевски В.Г.. Сети связи.:Моска, 2001. – 311 с.: ил. 4. Радиотехнические системы: учебник для студ. вузов / [авт. Ю.М.

Казаринов, Ю. А Коломенский, В.М. Кутузов и др.]; под ред. Ю.М.

Казаринова. – М.: Академия, 2008. – 592с.

5. Белов, В. М. Теория информации : курс лекций : учебное пособие для вузов. - М. : Горячая линия-Телеком, 2012. - 143 с.

6. Никольский Б.А. Основы радиотехнических систем. –Самара, СГАУ, 2013. -469 с.

**Additional literature:**

1. В.Н. Гордиенко. Основы построения телекоммуникационных систем и сетей.: Москва, 2004 – 349, 385 с.
2. О.В. Головкин. Радиосвязь: Москва, 2001- 128, 224

**Internet resources:**

1.Electronic Journal "Radio Engineering"

**is available online:** Additional educational material on the discipline "Radio engineering information transmission systems", methodological guidelines for practical and laboratory classes, tasks for performing SRS will be available on your page on the website univer.kaznu.kz . in the UMKD section.

Appendix:

Electronic publications:

Internet resources: