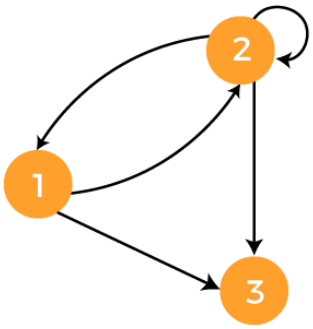
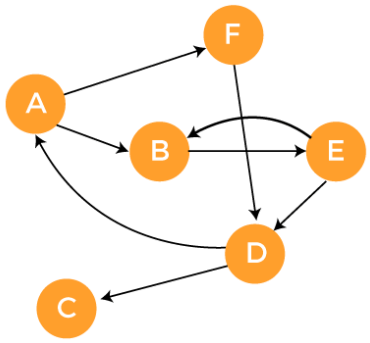
Mustaqil ishlash uchun masalalar

1. Berilgan graf uchun tugun va qirralar to‘plami tavsiflang.



Javob:G = {{1, 2, 3}, {(1, 2), (2, 1), (2, 2), (2, 3), (1, 3)}}

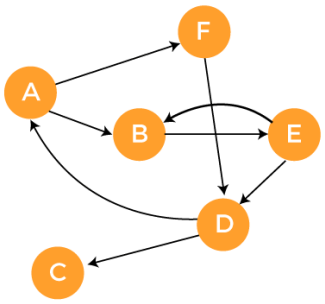
2. Berilgan yo‘naltirilgan graf uchun qo‘shnilik matritsa tavsiflang.



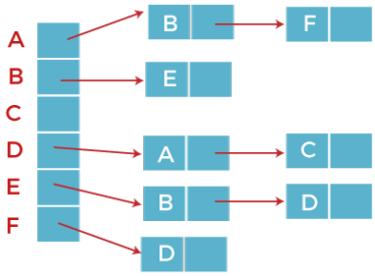
Javob:

	A	B	C	D	E	F
A	0	1	0	0	0	1
B	0	0	0	0	1	0
C	0	0	0	0	0	0
D	1	0	1	0	0	0
E	0	1	0	1	0	0
F	0	0	0	1	0	0

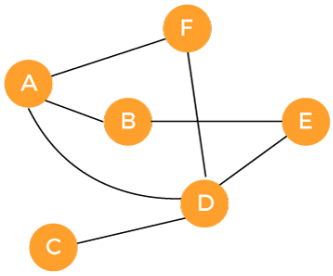
3. Berilgan yo‘naltirilgan graf uchun qo‘shlik ro‘yxat tavsiflang:



Javob:



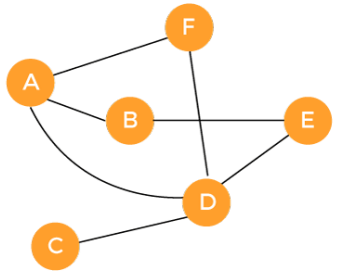
4. G = {N, E} bu yerda N = {1, 2, 3, 4}, va E = {(1, 2), (1, 4), (3, 4), (2, 3)}. Endi biz bu tepaliklar va qirralar uchun yo‘naltirilgan graf chizishimiz kerak.
5. G = {N, E} bu yerda N = {1, 2, 3, 4}, va E = {(1, 2), (1, 4), (3, 4), (2, 3)}. Endi biz bu tepaliklar va qirralar uchun yo‘naltirilmagan graf chizishimiz kerak.
6. Berilgan yo‘naltirilmagan graf uchun qo‘shnilik matritsa tavsiflang:



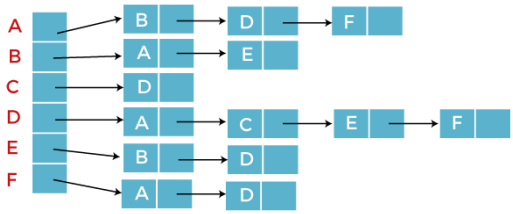
javob

	A	B	C	D	E	F
A	0	1	0	1	0	1
B	1	0	0	0	1	0
C	0	0	0	1	0	0
D	1	0	1	0	1	1
E	0	1	0	1	0	0
F	1	0	0	1	0	0

7. Berilgan yo‘naltirilmagan graf uchun qo‘shnilik ro‘yxat tavsiflang:



Javob:

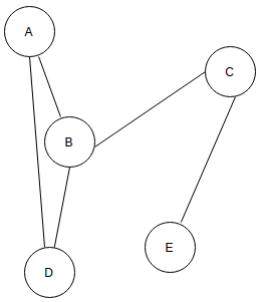


8. $A = \begin{bmatrix} 0 & 1 & 1 & 1 \\ 1 & 0 & 0 & 2 \\ 1 & 0 & 0 & 1 \\ 1 & 2 & 1 & 0 \end{bmatrix}$

Berilgan matritsaga qarab yo‘naltirlmagan graf chizing.

Mavzu yuzasidan testlar:

1. Berilgan grafikda kesilgan uchlarini aniqlang.



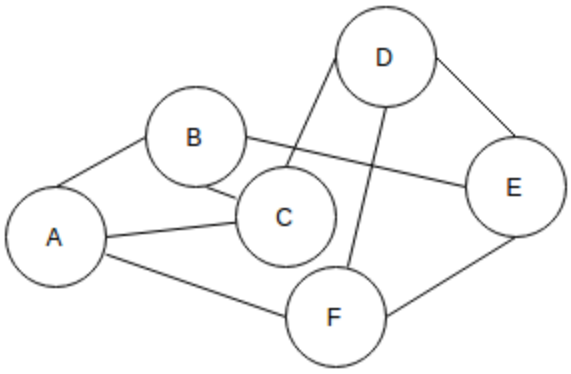
a) B va E

b) C va D

c) A va E

d) C va B*

2. Beriglan graf oddiy



a) Rost*

b) Yolg’on

3. Oddiy grafikada qirralarning soni tepaliklar darajalarining ikki baravariga teng.

a) Rost

b) Yolg’on*

4. Oddiy graf quyidagi xususiyatlardan qaysi biriga ega emas?

a) Tugunlar ulangan bo‘lishi shart*

b) Qirralar vaznsiz bo‘lishi kerak

c) Takrorlanishlar yoki bir nechta qirralardan tashkil topmagan bo‘lishi shart

d) Tugun bir nechta qirralarga ega bo‘lmasligi kerak

5. Berilgan G graf uchun v tugun va e qirralarga ega va qirralar takkroran ulanmagan. Quydagi javoblarning qaysi bir to‘g’ri.

a) v = e

b) v = e+1*

c) v + 1 = e

d) v = e-1

6. Grafni ifodalash uchun quyidagi usullardan qaysi biri ishlatilishi mumkin?

a) qo‘shni ro‘yxat va qo‘shni matritsa*

b) faqat qo‘shni ro‘yxat

c) faqat qo‘shni matritsa

d) To‘g’ri javob berilmagan

7. Yo‘naltirilgan va yo‘naltirilmagan graf o‘rtasidagi farq nima?
   a) Yo‘naltirilgan graf bir tomonlama munosabatlarni ko‘rsatish uchun qirralardan foydalanadi, lekin yo‘naltirilmagan graf bunday emas.
   b) Yo‘naltirilgan graf qirralarda og’irliklarni o‘z ichiga olishi mumkin, ammo yo‘naltirilmagan grafikda bunday bo‘lmaydi.
   c) Yo‘naltirilgan grafda bir nechta qirra va tugunlar bo‘lishi mumkin, ammo yo‘naltirilmagan grafda mavjud emas.*
   d) an va yo‘naltirilmagan grafikalar o‘rtasida farq yo‘q.
8. Grafning V tugun va E qirralari bilan qo‘shni ro‘yxatlar tasviri yordamida ifodalash uchun ishlatiladigan xotiraning o‘sish tartibi qanday?
   a) V
   b) E
   c) V+E*
   d) V*E