DESIGN DATABASE

1. Let R(ABCD), F = {A → B, C → D, D → C}. Which Normal Form of R?
a. 3NF
b. None of the mentioned.
C. BCNF
d. 1NF
e. 2NF

2. Let R(ABCD), F = {A → B, B → C, C →A}. Which FDs set are equivalent with F.
Select one or more:
a. G = {A → BC, B → AC, B → C}
b. G = {B → AC, C → AB, A → B}
c. G = {A → C, C → AB, B → A}
d. G = {C → B, B → A, A → C}

3. Let R(ABC) only store one tuple (0, 0, 0) and A → B, B → C hold on R. Which tuples are safe on R if we will insert into R.
Select one or more:
a. (1,0,0)
b. (1,1, 0)
c. (0,2,1)
d. (1,0,2)
e. (0,1,1)

4. If R In 2NF:
Select one:
a. No partial FDs exist.
b. No functional dependencies (FDs) exist.
c. No partial MVDs exist.
d. No multivalued dependencies (MVDs) exist.

5. Let R(ABCD), F = {A → BC, C → D}. Which Normal form of R?
Select one:
a. 2NF
b. 4NF
c. 1NF
d. 3NF

6. Let R(ABCDE) , F ={AB → CD , A → B , D → E }. A++:
Select one:
a. {A, B, C, DE}
b. {A, B, C, D, E}
c. {A, B, CD, E}
d. {AB, C, D, E}

7. Let R(ABCDELGH), F = {A → B, CH → A, B → E, BD → C, EG → H, DE → L}. Which FDs are hold on R?
Select one:
a. None of the mentioned.
b. BCD → LH
c. BLG → AE
d. ACG → DH
e. BED → CL

8. Let R(ABCDE), F = {AB → CD. Which decomposition are converse information?
Select one:
a. R1(ACD), R2(BCDE)

b. R1(ABCD), R2(ABE)
c. R1(CDE), R2(ADE)
d. R1(ADE), R2(ABCD)

9. Let R(ABC). Maximum keys of R.
Select one:
a. 5
b. 7
c. 4
d. 3
e. 6

10. Let R have:
- Three tributes.
- One is a Key.
- One is a Foreign Key
- One is a NonPrime Attribute.

Which the best Normal form can belong to R?
Select **one:**
a. 2NF
b. 4NF
c. 3NF
d. BCNF
e. 1NF

11. Let R(ABCDELGH), F = {A → B, CH → A, B → E, BD → C, EG → H, DE → L}. Which FDs are hold on R.
Select one or more:
a. BLG → AE
b. ADG → CH
c. All of the mentioned.
d. ACG → DH
e. BCD → LH

12. Let X = ABCD, Y = BDE, X → Y is FD:
Select one:
a. Inference based on Reflexivity axiom.
b. None of the mentioned.
c. Inference based on Augmentation axiom.
d. Inference based on Union axiom.
e. Inference based on Pseudo Transitivity axiom.

13. Let R(ABCDE). Which FDs set are hold on R so make R in BCNF
Select one or more:
a. {ACD → E, AE → C, CE → B, A → D}
b. {ABD → C, ACD → E, ACE → B, BC → E}
c. {BCD → E, BDE → C, BE → D, BE → A}
d. {BDE → A, AC → E, B → C, DE → A}

14. Consider F = [AB → CD, A → BE, BH → DK, H → BC}. F |= AC → BD : True or False → Đúng

15. _____ refers to an attribute or group of attributes mentioned in the left hand side of the arrow in a Functional Dependency (FD).

Select one:

a. All of the above

b. Multivalued attribute

c. Determinant

16. Let R(ABCD), F = {B → A}. Which Normal form of R?

Select one:

a. 4NF

b. 1NF

c. 2NF

d. 3NF

17. Let R(ABCDE), F = {AB → C, CD → B}. Which closure below is True ?

Select one:

a. $A^+ = ABC$

b. $A^+ = A$

c. $BC^+ = BDE$

d. $A^+ = ABC$

e. $AB^+ = ABCD$

18. Let R(ABCD), F = {A → B, C → D}. Which one are super key of R

Select one:

a. CD

b. BD

c. AB

d. AC

19. Which of the following is the result of bad database design?

Select one:

a. All of the above

b. Inability to represent some information

c. Repetition of Information

d. Inconsistent database state due to some transaction

20. Consider F = {AB → CD, A → BE, BH → DK, H → BC}. F |= BD → AC : True or False → Sai

21. Consider F = {AB → CD, A → BE, BH → DK, H → BC}; {A → B, H → C} |= A → BE : True or False → Sai

22. Consider F = {AB → CD, A → BE, BH → DK, H → BC}; F |= AH → KF : True or False?

23. If X = EGHM and Y = GM then X → Y is

Select one:

a. Union Rule

b. Reflexivity Rule

c. Pseudo-transitivity Rule

d. Augmentation Rule

24. Let R(ABCD), F = {A → B, B → C, C → A}. Which FDs set are equivalent with F.

Select one or more:

a. G = {A → BC, B → AC, C → AB}

b. G = {A → B, B → A, C → A}

C. G = {A → B, B → C, C → B}

d. None of the mentioned.

e. G = {A → B, B → A, B → C}

25. Let F = {A → B, B → C, D → C, E → D}. Which inferences below are True ?

Select one:

a. A → E

b. None of the mentioned.

C. A → D

d. E → A

e. B → D

26. In a functional dependency X → Y, if Y is functionally dependent on X, but not on X's proper subsets, then we would call the functional dependency as:

Select one:

a. None of the above

b. Full Functional Dependency

c. Multivalued Functional Dependency

d. Partial Functional Dependency

27. Let R(ABCD), F = {A → B, A → C, B → A}. Which SET is/are the key of R?

Select one:

a. DC, AC

b. DA

c. BC

d. AD, BD

e. B

28. Let R(ABCDEH), F = {AB → CD, A → BE, BH → DE, H → BC}; AH++:

Select one:

a. {A, H, BE, CDH, BC, ADE}

b. {A, B, C, D, E, H}

c. None of the mentioned.

d. {A, H, BE, CH}

29. Let R(ABCDE), F = {D → C, CE → A, D → A, AE → D}. Which set are Key ?

Select one:

a. BCE

b. ACD

c. A

d. AD

e. CDE

30. Let R(ABCD) only store one tuple (1, 0, 1, 0); A → B, D → C hold on R. Which tuples are safe if we will insert into R.

Select one or more:

a. (1,0,0,0)
b. (1,1,1,0)
c. (0,0,1,0)
d. (0,1,1,0)
e. (0,1,0,1)

31. To check X is a key of R, we must compute ..... of X.
Select one:
a. X^+
b. Minimum cover of X.
c. Cover of X.
d. Closure of X and all the subset of X

32. Let R(ABCDE), F = {D → C, CE → A, D → A, AE → D}. Which set are Key ?
Select one:
a. A
b. AD
c. None of the mentioned.
d. DE
e. CE
f. ABE

33. Let R(ABC) with FD: A → B, B → C, A → C. Which of the functional dependencies is redundant? (dư thừa)
Select one:
a. B → C
b. None of the mentioned
C. A → C
d. A → B

34. Let R(BOISQDE), FDs: S → D, I → B, IS → Q, B → O. Which SET is the Key of R ?
Select one:
a. BO
b. E
C. IES
d. IBE
e. ES

35. Let R(ABCD), F = {AC → B, B → D}. Which Normal form of R?
Select one:
a. 2NF
b. 3NF
c. 4NF
d. 1NF

36. Let R(ABCD), F = {A → BC, D → AB}. Which of the decomposition below are converse information?
Select one or more:
a. R1(ABD); R2(CD)
b. R1(BC); R2(CD)
c. R1(AB); R2(AC)
d. R1(BD), R2(AC)
e. R1(ABC); R2(AD)

37. Consider F = {AB → CD, A → BE, BH → DK , H → BC}; {A → BE , H → C} |= AH → BD : True or False
→ Sai

38. Let X → Y. It is called _____ if Y is a subset of X.

Select one:

a. Not the special name.
b. Prime FD.
c. General FD.
d. Non Trivial FD.
e. Trivial FD.

39. Let R(ABCDE). Suppose we have attributes below are Super Key: (AB), (AD), (CE), (ABD), (A), (E). So which attributes below are Key ?

Select one:

a. A, E
b. A
c. CE
d. AB
e. None of the mentioned.
f. D
g. B

40. Let R(ABCDE), F = Empty. The Normal form of R is :

Select one:

a. 3NF
b. 1NF
C. 4NF
d. 2NF
e. BCNF

41. Let R(ABCD), F ={ AB → CD, CD → AB , B → C}. Which Normal form of R ?

Select one:

a. 1NF
b. 2NF
c. 3NF
d. 4NF
e. BCNF

42. Consider the following set of functional dependencies of the scheme (ABC),

F = {A → BC, B → C, A → B, AB →C}

The minimum cover for the set is

Select one:

a. {AB → C, A → B}
b. {A → BC, AB → C}
c. {AB → C, B → C}
d. {A → B, B → C}

43. Let R(ABCD), F = {A → B, C → D}. Which Normal form of R?

Select one:

a. 2NF
b. 4NF
c. 1NF
d. 3NF

44. Let R(ABCD), with F = {AB → CD, B → C, CD → AB}. What are the keys of R

Select one:

a. AB, BD, CD

b. AB, CD

c.AB, BC, CD

d. AB, CD, AD

45. Let X → YZ. What axiom is used for Inferences below: X → Y, X → Z

Select one:

a. Decomposition axiom.

b. Union axiom.

c. Augmentation axiom.

d. Pseudo Transitivity axiom.

e. Reflexivity axiom.

46. a) If all FDs in F1 can be inference from F2.

and

b) If drop any attribute in FDs in F2 then (a) False.

So F2 is called .....of F1.

Select one:

a. Both cover and minimum cover.

b. Cover.

c. Closure.

d. None of the mentioned.

e. Minimum cover.