	TANTA UNIVERSITY FACULTY OF COMPUTERS AND INFORMATICS
	EXAMINATION FOR (LEVEL I)
	COURSE TITLE: ENGLISH / COURSE CODE:

I-A-Read the following passage and answer the questions:

Almost everyone knows about the Internet. More than a billion people around the world are now online. The Internet is a powerful tool for information and communication. The basic concept of the Internet was first thought of in the early 1960s. It began as a military research network, designed to be decentralized or spread out over many locations. If one location was attacked, the military could communicate from another location. The first small network went online in 1969. It connected four universities in the United States. This network was very successful from the beginning. Scientists could now share information about their research. In 1972, email was invented and quickly became the most popular application. By the end of that year, the network connected many universities and government research centers. The general public became aware of the network in the late 70s. A new version allowed anyone to get online. People from all over the world joined online groups to talk about thousands of different subjects. The term Internet was used for the first time in 1982. New technology had created a common language for the network computers. The Internet was now recognized as an international network. This was also at the time when privacy and security started becoming important issues. Hackers and viruses began to emerge. In 1990, the original military network went offline, and a year later the World Wide Web was born. The World Wide Web is in fact a browser for the Internet -a kind of software program that allows users to access and navigate within information on the net. With the introduction of the World Wide Web, the development of the Internet accelerated at a rapid pace. The first computer code of the web was created in 1991 allowing programmers to combine words, pictures, and sounds on web pages.

In the early nineties, the first search engine, Gopher, and the first web browser, Mosaic, were developed, allowing easier and simpler access to the Net. Traffic on the Internet started growing at an annual rate of approximately 340,000 percent. At the end of the 1990S, Internet was born. Internet uses fiber optic cables to link together a consortium of hundreds of big-speed networks around the world. Instead of connecting to the Internet solely through telephone lines, people could now connect in a wide variety of ways, including via satellite. These new methods have more data carrying capacity, or bandwidth, than telephone lines. This made the Internet faster and able to convey much more information. People could soon watch TV shows and movies outline. In the future, people will not need a computer to access the Internet. The browser will become a platform for the Web. Information will no longer need to be stored in a computer hard drive. Instead, it will be stored in places around , the world. People can retrieve it through cell phones, music players, and other portable devices, This is called 'cloud computing," because it seems as if information floats down from the sky. A 2008 study said that the Internet will continue to grow. By 2020, a low-cost global network will allow people even in remote areas to have Internet access. English "ill remain the primal)' Nellanguage, but other languages, especially Mandarin, will increase. Also, a segment of society will refuse to use the Net and live without modem technology.

Decide if the following statements are True or False:

1.The first small network went online in 1969.
2.Gopher was the first Internet search browser.
3.The Intenet allowed people to watch TV online.
4.By 2020, English will no longer be the primary language of the Internet .
5-Mosaic is an Internet-based technology.
6.The first computer virus probably appeared in the late 70S.
7. The first small network was of no value for scientists .
8. In the future, people will no longer need computers to access the Internet.
9. People could now connect to the internet via satellite only.
10. Information must be stored in a computer hard drive.

B-Read the following passage and answer the questions

1-The legend of the mysterious Bermuda Triangle is one of the strangest of all sea stories. The Bermuda Triangle is a section of the Atlantic Ocean off the southeastern coast of Florida. A line drawn from Florida to Bermuda, then to Puerto Rico and back to Florida, forms a rough triangle. Within this triangle, or very near it, more than fifty ships and airplanes have vanished or disappeared.

2-The legend began in 1945, when five American Navy bombers vanished while flying over the area. They were flying during the day, under clear weather conditions. The commander of the five planes was talking to his base by radio. He announced that they seemed to be lost. After that, the planes were never heard from again. A search plane was sent out to find the five. It too disappeared.

3-In 1948, an airliner flying toward Miami vanished over the Triangle. A few months later, another plane disappeared. In 1950, still another airplane flew into the Triangle, never to be seen again. A ship named The Sandra sailed into the triangle and vanished. In 1953, another ship, sailing north of the Triangle, sent out distress signals that were suddenly cut off. Ships and planes were sent to search for the ship, but they never found it.

4- There have been many explanations for these mysterious happenings. Some people believe that there is a strange force at work in this part of the ocean. Some suggest there may be some kinds of 'hole' in the triangle that ships and planes go through into another world. Others think that UFO's steal the planes, ships, and their crews, and take them away.

5- Some people don't believe that there is anything extraordinary about the Bermuda Triangle. Thousands of ships and airplanes have passed through the Triangle without encountering trouble. The Triangle isn't the only place where ships and planes have vanished. Many ships have vanished all over the world's oceans. Many reasons exist for such things happening, such as sudden storms or seaquakes. These are just some of the dangers of going to sea. The Bermuda Triangle just happens to be a part of the sea where there have been many disasters. Whatever the reasons for these strange happenings, the legend of the Bermuda Triangle remains the strangest of all sea tales.

Decide if the following statements are True or False:

11. Paragraph 1 is mainly talking about why Bermuda Triangle is mysterious.
12.The underlined word "bombers" in paragraph 2 probably means ships.
13.According to Paragraph 2, the total number of the American airplanes that disappeared in 1945 in Bermuda Triangle was six.
14.The underlined pronoun " it" in paragraph 2 refers to the search plane.
15.Paragraph 3 is mainly talking about how ships and airplanes disappear in Bermuda Triangle
16. The main idea of Paragraph 4 is giving explanations why ships and airplanes disappear in Bermuda Triangle.
17.In the last paragraph, we see some people who don't think that Bermuda Triangle is an extraordinary place.
18. The legend of the Bermuda Triangle is rarely considered strange among sea tales.

C-Read the following sentences and decide if they are grammatically True or False:

19- Yachting attracts many of the world's most famous and wealthy people.
20- That species of butterfly are commonly seen in many parts of North and South America.
21- Some people suffer from doing too hard work.
22- I liked the restaurant but the food wasn't enough.

23-"uncapable" is the negative form of "capable".

24- Big Joe saw the police car coming up behind, so he turns into the next alley.

25- If the trained seal won't eat its dinner, throw it into the lion's cage.

II-A- Read the following passage and answer the questions:

Have you ever thought of studying abroad? Four students who studied abroad relate their experiences ...

A. Divya Singh from Cardiff went to Chile

I went to a talk given by a couple of older students who had been on an exchange programme the previous year, and it occurred to me that if I could persuade my mum, this would be just the sort of break from normal school routine that I needed. I filled in my application while holding out little hope of being selected. However I was, and was soon immersed in a totally different educational culture, which helped me to appreciate many aspects of my school back home. Another great advantage of my year abroad was that I picked up Spanish much more quickly than in classes back home and, because my teachers were pretty demanding, I even feel confident writing it now. As a result, I'm considering doing Spanish and Latin American studies at university and perhaps after that going into the diplomatic service.

B .Bruce Brown from Sydney went to England.

Although my parents had insisted that I went, I knew what a sacrifice they were making to pay for my year abroad, so I was determined to make the most of the opportunity. My host family was really welcoming, but what I found hard to get used to were the seemingly endless days of grey drizzle and the fact that it got dark so early in winter. Even so, I took every chance to get out and meet people, make friends and get a real, in-depth experience of English life. At the same time, I was keen to make an impact at school and get good grades, although I found the schoolwork quite challenging and not really the highlight of my stay. Even so, I learned far more than I expected, made a lot of friends and came away with the impression that the British are a lot more interesting than I had been given to expect by people back home.

C.Nelson Grace from Boston went to New Zealand

I lived on a farm on South Island, where my host family had a vast flock of about 3,000 sheep. Being a city boy, the experience of farming life was totally novel, but I loved it and took every opportunity to go out and help with the work of the farm. I also got involved in lots of sporting activities with my school, including sailing, rugby and skiing – all firsts for me. I found New Zealanders so enthusiastic about everything that I used to get up with a buzz of excitement and, unlike back home, I actually looked forward to going into school every day. I also think I matured a lot during my year abroad. I'm not so dependent now on my family or my teachers to make me study, and I've learned to get on with all sorts of different people, even if they're not my type. I've also learned a bit about the value of money!

D. Carmen Echevarria from Bilbao went to Scotland

After four years in a state secondary school in Bilbao, it was a huge shock to find myself in a private all-girls school in the Highlands of Scotland, where everyone wore uniforms. Studying there was a complete revelation to me: gone were the hours spent in the evenings memorising huge numbers of useless facts for tests the next day which I would forget as soon as the test was over. Instead, we spent a lot of time discussing issues, solving problems and writing creatively. I missed my friends back home, but really appreciated learning to think in new ways and seeing that education could be so creative. I missed not sharing my classes with boys, but on the other hand, we probably concentrated harder and may have felt more relaxed about the opinions we expressed.

For questions 1–10, choose the students A–D.

Which person

was surprised by the different approach to education? 1/.....

enjoyed cooperating with their host family? 2/.....
believes they are more adult as a result of the exchange? 3/.....
feels the exchange has helped to equip them for the future? 4/.....
felt a responsibility to take as much advantage as possible of exchange? 5/.....
had a different attitude to attending school while abroad? 6/.....
wanted a change from their normal school life? 7/.....
had not expected to be able to do an exchange? 8/.....
had mixed feelings about the type of school? 9/.....
changed their opinion of people as a result of the exchange? 10/.....

B-Choose the correct letter (a), (b) , or (c) in each of the followings:

11 A-I love jogging , I hate sweating.
B- I love jogging, but I hate sweating.
C- I love jogging but, I hate sweating

12- The winner and new champion ..... to give up the microphone at the news conference.
a- refuses b- refuse c- refusing

13- There ..... good reasons for missing this law class: death and jury duty.
A-are b- is c- have

14- The jungle, with its poisonous plants, wild animals, and biting insects, ... Herman long for the sidewalks of Topeka.
A-make b- makes c- have made

15-Each of the young women in the Family Life class decided not to marry after ..... read that couples today have 2:3 children.
a-her b-she c- they

16- Colonel Shelly led Jim and Terry to the campsite .....
a-himself b-hisself c-themselves

17- The police academy trains.....dogs to fetch things on command.
a-their b-its c-theirs

18-a-At Liz's recent wedding, the photographer used an instant camera. Because her marriages break up so fast.
b- At Liz's recent wedding, the photographer used an instant camera because her marriage break up so fast.
c-At Liz's recent wedding, the photographer used an instant camera, her marriages break up so fast.

19- She's an ..... teacher and that's what makes her lessons so enjoyable.
a-interest b-interesting c-interested

20- Which is the best revision of the following sentence?
They awarded we losers a gag prize.
(a) They awarded them losers a gag prize. (b) They awarded yours losers a gag prize.
(c) They awarded they losers a gag prize. (d) They awarded us losers a gag prize.

21-a- Mary Lou decided not to eat the alphabet soup the letters spelled out "botulism."
b-Mary Lou decided not to eat the alphabet soup , for the letters spelled out "botulism."
c- Mary Lou decided not to eat the alphabet soup , the letters spelled out "botulism."

22- In the lecture, the professor mentioned.....to Africa to collect a rare species of butterfly.
a- to travel b- traveling c-travelled

23- A- Max gave a wonderful performance in the school concert although his headache.
B- Max gave a wonderful performance in the school concert despite his headache.
C- Max gave a wonderful performance in the school concert despite of his headache.

Good luck

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24-A- I can hardly wait until Jim Bob gets his jaw out of traction.
B- I can't hardly wait until Jim Bob gets his jaw out of traction.
C- I can't never wait until Jim Bob gets his jaw out of traction.

25-A- Neither have a dime left by the second of the month.
B- Neither has a dime left by the second of the month.
C- Neither own a dime left by the second of the month.

26-She's just found .....as an ambulance driver.
a- a work b-a job c- work

27-A- Heavy fines and jail sentences have made few difference in preventing antelope poaching.
B- Heavy fines and jail sentences have made little difference in preventing antelope poaching.
C- Heavy fines and jail sentences have made many difference in preventing antelope poaching.

28-A-They spent millions on the film. However, not many people were interested in going to see it.
B- They spent millions on the film. Although, not many people were interested in going to see it.
C- They spent millions on the film. Despite not many people were interested in going to see it.

29-A- Public transport are still the best way to get around the city.
B- Public transport is still the best way to get around the city.
C- Public transports are still the best way to get around the city.

30-A- It's not a sport too difficult, so I think you can learn it quite quickly.
B- It's not a very difficult sport, so I think you can learn it quite quickly.
C- It's not a too many difficult sport, so I think you can learn it quite quickly.

31-A- When you play chess, you have to think more hardly than when you're gaming.
B- When you play chess, you have to think harder than when you're gaming.
C- When you play chess, you have to think hardlier than when you're gaming.

32-A- The gift is from Annette and I.
B- The gift is from Annette and me.
C- The gift is from Annette and mine.

33-A- To help you do your shopping quickly, Mr. Scrooge, here are a list of gifts under a dollar.
B- To help you do your shopping quickly, Mr. Scrooge, here a list of gifts under a dollar.
C- To help you do your shopping quickly, Mr. Scrooge, here is a list of gifts under a dollar.

34-A- The action of the new senator haven't been consistent with her campaign promises.
B- The action of the new senator hasn't been consistent with her campaign promises.
C- The action of the new senator are consistent with her campaign promises.

35-A- Sam confessed to eating all the cookies.
B- Sam confessed to eat all the cookies.
C- Sam confessed to eaten all the cookies.

End of Test.

Dr. Waleed Samir

Level: 1
Course Title: Discrete Mathematics
Course Code: MA 112
Time: 2 Hours
Date: 9- 1 - 2024

Arab republic of Egypt
Ministry of Higher Education
Tanta University
Faculty of Computers and Information Science

Model: (2)

Final Exam – 1st Term 2023/2024	Total Assessment Marks: 50/60

Part 1: Choose the correct answer among the choices (only one answer for each question)

1. If G is a graph with 10 edges and 6 vertices then a possible set of the degrees of the vertices is

a. 4,5,1,3,4,3 b. 4,5,3,2,2,3 c. 4,5,4,5,2 ,3 d. None of the above

2. What is ∑deg(v) of the graph represented by the given adjacency matrix?

a. 16 b. 15 c. 14 d. 12

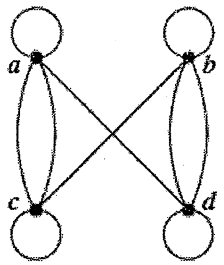
$$\begin{vmatrix} 0 & 0 & 1 & 1 & 1 \\ 0 & 0 & 1 & 0 & 1 \\ 1 & 1 & 0 & 1 & 1 \\ 1 & 0 & 1 & 0 & 1 \\ 1 & 1 & 1 & 1 & 0 \end{vmatrix}$$

3. How many vertices and how many edges does the complete *bipartite graph* $K_{3,5}$?

a. Number of vertices is 8 and number of edges is 15
b. Number of vertices is 15 and number of edges is 8
c. Number of vertices is 5 and number of edges is 15
d. Number of vertices is 15 and number of edges is 3

4. The shown graph can be represented by the following adjacency matrix :

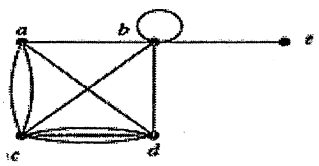
a. $\begin{bmatrix} 1 & 0 & 2 & 1 \\ 0 & 1 & 1 & 2 \\ 2 & 1 & 1 & 0 \\ 1 & 2 & 0 & 1 \end{bmatrix}$ b. $\begin{bmatrix} 0 & 0 & 2 & 1 \\ 0 & 0 & 1 & 2 \\ 2 & 1 & 0 & 0 \\ 1 & 2 & 0 & 0 \end{bmatrix}$ c. $\begin{bmatrix} 1 & 0 & 2 & 1 \\ 0 & 1 & 1 & 2 \\ 2 & 1 & 1 & 0 \\ 1 & 0 & 0 & 1 \end{bmatrix}$ d. None of the above



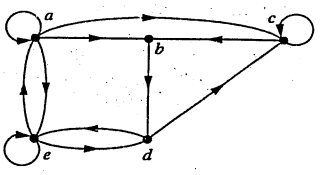
5. The degree of the vertex *b* in the next graph is

a. 4 b- 6

c- 8 d- None of the above



6. The in-degree of the vertex *c* (deg- (c)) and the out-degree of the vertex c (deg+ (c)) respectively in the next graph is:



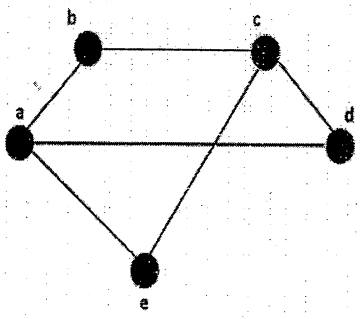
a. 3, 2 b. 2, 3 c. 3, 3 d. None of the above

7. Let be $A=\begin{bmatrix}1&1&1&0&0\\0&0&0&1&1\\0&1&0&1&0\\1&0&1&0&1\end{bmatrix}$ the incidence matrix of a graph *G*, then the adjacency matrix of *G is:*

a. $\begin{bmatrix}0&1&1&2\\1&0&1&0\\1&2&0&0\\1&0&0&0\end{bmatrix}$ b. $\begin{bmatrix}0&0&1&2\\0&0&1&1\\1&1&0&0\\2&1&0&0\end{bmatrix}$ c. $\begin{bmatrix}0&1&1&0\\1&0&0&1\\1&0&0&1\\0&1&1&0\end{bmatrix}$ d. None of the above

8. The graph of Figure 3 is bipartite, i.e. its vertex set V is partitioned into V1 and V2. What are V1 and V2?

a. V1 = {a, d, e} and V2 = {b, c}
b. V1 = {a, b, d} and V2 = {e, c}
c. V1 = {a, b, c} and V2 = {d, e}
d. V1 = {a, c} and V2 = {b, d, e}



9. A rooted *m*-ary tree of height *h* is called balanced if all leaves are at

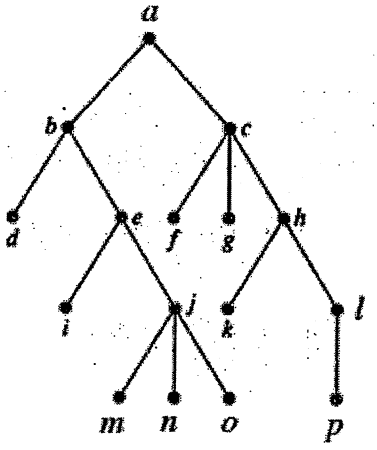
a. level h-1
b- level h
c- levels h–1 or h–2
d- both a and b

10. In the shown graph, which vertices are ancestors of *n* ?

a. e, f, j, k, b
b. I, j, k, l
c. f, g, h, c, a
d. j, e, b, a

11. In the shown graph, which vertices are descendants of *C* ?

a. c, h, k, l, p
b. d, e, f, g, h
c. f, g, h, c, a
d. f, g, h, k, l, p



12. Every full binary tree with 17 vertices has ..... leaves.

a. 15 b. 16 c. 8 d. 9

13. The following statement $\neg$ [(p $\wedge \neg$q) $\rightarrow$ (p $\vee$ q)] is:

a. A tautology. b. A contradiction.

c. A contingency. d. Neither a tautology nor a contradiction.

14. Which of the following statements is true if the domain of x and y are all integers?

a. $\forall x \forall y$ (x+y = x-y) b. $\forall y \exists x$ (x+y = x-y)

c. $\exists x \forall y$ (x+y = x-y) d. $\forall x \exists y$ (x+y = x-y)

15. The proposition $(p \rightarrow q) \vee (p \rightarrow r)$ is logically equivalent to:

a. $\neg$ q $\rightarrow \neg$ p $\vee$ r b. $\neg$ (p $\wedge \neg$ q) $\vee$ r c. $p \rightarrow (q \vee r)$ d. p $\rightarrow$ (q $\wedge$ r)

16. In this statement: $\exists x$ (P(x) $\wedge$ Q(x)) $\vee$ (R(y)), the variables x and y are:

a. both x and y are bound b. x is free and y is bound

c. x is bound and y is free d. both x and y are free

17. The <u>contrapositive</u> of the statement "if $x > y$ then x = 3y" is:

a. if x = 3y then x > y b. if $x \neq 3y$ then $x \leq y$

c. if $x \neq 3y$ then $x > y$ d. if x = 3y then $x \leq y$

18. The following statement [(p $\rightarrow$ q) $\leftrightarrow$ ($\neg$ p $\vee$ q)] is:

a. A tautology. b. A contradiction.

c. A contingency. d. Neither a tautology nor a contradiction.

19. What rule of inference is used in this argument: " *Aly is a Mathematical Major student". Therefore, Aly is either a Mathematical major or a computer science major.*"

a. Modus ponens b. Modus tollens c. Addition d. Resolution

20. What is the <u>negation</u> of the statement "If Ahmed has money then he will buy a car".

a. If Ahmed does not have money then he will not buy a car

b. If Ahmed will buy a car then he has money

c. Ahmed has money and he will buy a car

d. Ahmed has money or he will not buy a car

21. The <u>negation</u> of the following statement (P $\wedge$ q) $\rightarrow$ r is :

a. $\neg$ q $\rightarrow \neg$ r b. $\neg$ (p $\wedge \neg$ q) $\vee$ r c. $\neg$ p $\vee$ r d. P $\wedge$ q $\wedge \neg$ r

22. The proposition $\neg p \rightarrow (q \rightarrow r)$ is logically equivalent to:

a. $\neg q \rightarrow (\neg p \vee r)$ *b.* $(p \rightarrow \neg q) \vee r$ *c.* $q \rightarrow (p \vee r)$ *d.* $p \rightarrow (q \vee r)$

23. Let Q(x) be the statement "x+1 > 2x" If the domain consists of all integer which is true

a. $\forall x$ Q(x) b. $\forall x \neg$Q(x) c. $\exists x \neg$ Q(x) d. None of the above.

24. List the members of the set S = {x | x is an integer number such that $x^2 = 2$}

a. S= {0, 1} b. S= {0, 1, -1} c. S= {1, -1} d. S = ϕ

25. Let A and B be sets such that A = {1, a, {3, t}, {1, 2, 3}} and B = {3, t}, then:

a. $B \in A$ b. $B \notin A$ c. $B \supseteq A$ d. $B \subset A$

26. Let P(S) = {ϕ, {0}, {4}, {6}, {0, 4}, {0, 6}, {4, 6}, {0, 4, 6}} then the cardinality of S *"denoted* by |S|" is:

a. 8 b. 3 c. 2 d. 7

27. Let A= {2, 3, 4, 7} and B= {1, 2, 3} and C = {3, 4, 7} are three sets, then:

a. $|B - A| = |C - B|$ b. $|C - A| = |B - C|$

c. $|A - B| = |A - C|$ d. $|C - B| = |A - B|$

28. If A - B = { 1 , 5 , 7, 8}, B - A = {2, 10}, and A ∩ B = {3 , 6, 9}, then A⊕B is:

a. {1, 2, 5, 7, 8, 10} b. {1, 3, 5, 6 , 7, 8 }

c. {2, 3, 5, 6 , 7, 8, 9} d. None of the above

29. If S = {a, b, c}, Then the *power set of S* denoted by *P(S) is*:

a. P(S) = { {a}, {b}, {c}, { a, b, c } } b. P(S) = { ∅, {a}, {b}, {c}, { a, b, c } }

c. P(S) = { ∅, {a}, {b}, {c}, {a, b} , {a, c} , {b, c}, { a, b, c } } d. None of the above

30. To prove the formula P(n) by Mathematical Induction, the proof consists of two parts: the Basis step, and the Inductive step, where:

a. We must show that for all positive integers k, P(k) is true.
b. We must show that P(1) is true, and for all positive integers k, if P(k) is true, then P(k + 1) is true.
c. We must show that P(1) is true, and P(k) is true for a positive integer k >1.
d. We must show that P(1) is true, and for all positive integers k, P(k + 1) is true.

31. The coefficient of $x^2 y^3$ in the expansion of $(2x-3y)^5$ is:

a. -1080 b. -720 c. 360 d. 1080

32. How many strings of length <u>four</u> cab be formed of lowercase English letters <u>start</u> with letter x?

a. 677 b. 676 c. 17576 d. 17570

33. If | A | = 2, and | B | = 4 where A, B are sets, then | A X B | =.....

a. 6 b. 8 c. 9 d. 12

34. How many edges are there in a graph with 5 vertices each of degree 6 ?

a. 13 b. 15 c. 18 d. 21

35. Let *R* = {(*x, x*), (*y, x*), (*z, y*), (*w, z*)} be a relation on *A* = {*x, y, z, w*} then ($R^2 = R \circ R$) is:

a. {(*x, x*), (*y, x*), (*z, y*), (*w, z*)} b. {(*x, x*), (*y, x*), (*z, x*), (*w, y*)}

c. {(*x, x*), (*y, y*), (*z, x*), (*w, z*)} d. {(*x, x*), (*y, y*), (*z, y*), (*w, z*)}

36. Let R be a relation on a set A={1,2,3,4} such that R = {(2, 1), (3 , 1) , (3 , 2), (4, 1) , (4, 2), (4, 3)}, then R is:

a. reflexive b- symmetric c- equivalence d- Transitive

37. The relation R = {(a, b) | a = b + 2} defined on the set of all integer numbers is:

a. Symmetric b. Antisymmetric c. Transitive d. None of the above

38. The relation R = {(x, y) | x y ≥ 1} defined on the set of all positive integer numbers is:

a. Irreflexive b. Antisymmetric c. equivalence d. None of the above

39. How many ways are there to select 5 players from a 10-member tennis team to make a trip to a match at another school?

a. 250 b. 252 c. 50 d. None of the above

40. Let *R* be a relation on a set {1, 2, 3, 4} defined as follows:
***a R b* if and only if *a* + *b* is an odd number, then *R* =**

a. {(1,2), (1,4), (2,3), (3,4)} b. {(1,2), (2,1), (1,4), (4,1), (2,3), (3,2), (3,4),(4,3)}

c. {((2,1), (4,1), (3,2), (4,3)} d. None of the above

With best wishes
Dr. Moustafa El-Ashry