Course Title	Elective Course (3) (Data Security)	Academic Year 2022/2023 First Semester Exam	Course Code	EEC4126
Year/ Level	Forth		Total Marks	(85) Marks
Date	17- 1- 2023	No. of Pages (4)	Allowed time	3 hrs

Question Number (1) (10 Points)

Choose the best answer to complete the sentences:

1. **.....is the assurance that the communicating entity is the one that it claims to be.**
   a. Entity authentication b. Message authentication
   c. Identification d. Access control
2. **.....is what those accessing the resource are allowed to do.**
   a. authentication b. Accountability
   c. Authorization d. Modification
3. **.....provides protection against denial by one of the entities involved in a communication of having participated in all or part of the communication.**
   a. Denial of Service b. Nonrepudiation
   c. Encryption d. Authentication
4. **Brute force attack is an example of.....**
   a. known plaintext attack b. ciphertext only attack
   c. chosen ciphertext attack d. chosen text attack
5. **PGP provides authentication using .....**
   a. radix - 64 b. digital signatures
   c. asymmetric block encryption d. symmetric block encryption
6. **An encryption scheme is ....., if the ciphertext generated by the scheme does not contain enough information to determine uniquely the corresponding plaintext.**
   a. unconditionally secure b. computationally secure
   c. insecure d. conditionally secure
7. **In....., plaintext is encrypted two letters at a time.**
   a. Caesar cipher b. Playfair
   c. Polyalphabetic cipher d. Homophonic cipher

8. **..... is easy to calculate in one direction and infeasible to calculate in the other direction unless certain additional information is known.**
   a. A one-way function b. An irreversible function
   c. A trap-door one-way function d. Unconditionally hard function
9. **A public-key certificate contains .....**
   a. user' private key and other information b. user' public key and other information
   c. encrypted symmetric key d. user's public and private keys
10. **Publicly available directory is a method for distributing.....**
    a. session key b. master key
    c. public key d. authentication key

Question Number (2) (40 Points: 10 for each item)

1. Define a stream cipher. Why is it not desirable to reuse a stream cipher key?
2. Decipher the following ciphertext, which was encrypted using a *Vigenere* cipher with key "ART": YFN GFM IKK IXA T
3. The problem illustrates a simple application of the chosen ciphertext attack on RSA. Bob intercepts a ciphertext C intended for Alice and encrypted with Alice's public key e. Bob wants to obtain the original message $M = C^d \bmod n$. Bob chooses a random value r less than n and computes

$$Z = r^e \bmod n$$
$$X = ZC \bmod n$$
$$t = r^{-1} \bmod n$$

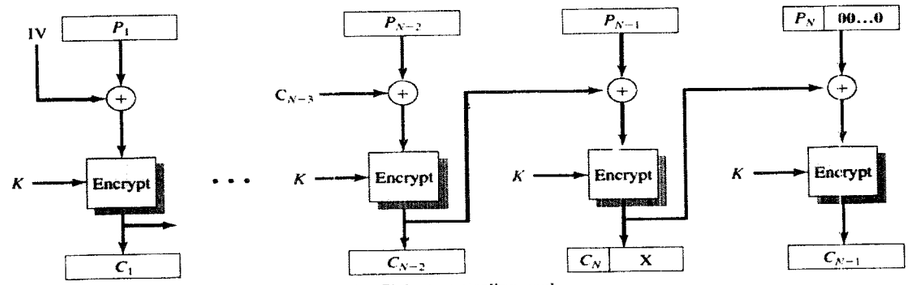
   Next, Bob gets Alice to authenticate (sign) X with her private key, thereby decrypting X.
   Alice returns $Y = X^d \bmod n$.
   Show how Bob can use the information now available to him to determine M.
4. The following protocol for communication between two parties, for example, user A wishing to send message M to user B: (messages exchanged are in the format (sender's name, text, receiver's name)."
   - A sends B the block: $(A, E(PU_b, M), B)$.
   - B acknowledges receipt by sending to A the block: $(B, E(PU_a, M), A)$.

   a. Discuss a possible attack on this protocol.
   b. How to modify this protocol to resist this attack?

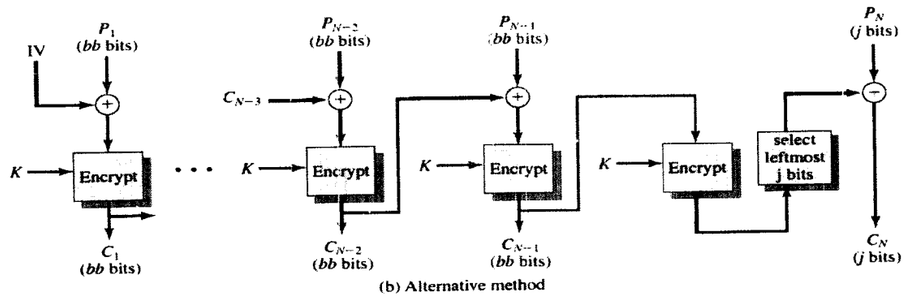
Question Number (3) (35 Points)

1. Padding could be used in any block cipher to make it handles plaintext of any length. The ciphertext is longer than the plaintext by at most the size of a single block. Padding is used to assure that the plaintext input is a multiple of the block length. Padding may not always be appropriate. For example, one might wish to store the encrypted data in the same memory buffer that originally contained the plaintext. In that case, the ciphertext must be the same length as the original plaintext. A mode for that purpose is the ciphertext stealing (CTS) mode. Figure (a) shows an implementation of this mode:
   a. Explain how it works.
   b. Describe how to decrypt C_{n-1} and C_n
   c. Figure (b) shows an alternative to CTS for producing ciphertext of equal length to the plaintext when the plaintext is not an integer multiple of the block size.
      i. Explain the algorithm.
      ii. Explain why CTS is preferable to this approach illustrated in Figure (b).

(7 point)



(a) Ciphertext stealing mode



(b) Alternative method

2. "Kerberos is a centralized, single sign-on, encrypted logins, network authentication protocol". Discuss with drawing. (8 point)
3. What is the most famous mechanism used to create secure and encrypted communication with web sites? Explain with drawing only its main protocols. (10 point)
4. What is the difference between end-to-end security and link security? Show with drawing how IPsec protocol can be used to achieve each one of them. (10 point)

End of questions.....

Best wishes of success

Examination Committee

Assist. Prof. / Roayat Ismail
Prof./Mohammed Nasr
Dr./Huissen Eltaibee

Tanta University

Department of Electronics and Communication Engineering
Total Marks: 90 Marks

Faculty of Engineering

Course Title: **Wave Propagation and Antennas (2)**	Course Code: EEC 3123	Year: 4th
Date: 12 Jan, 2023	**Allowed Time: 3 Hours**	**No. of pages: 3**

Question (2): 20 Marks

a) **What** is the meant by antenna arrays? **State** the advantages of the antenna arrays over the single element.

b) **Derive** the general expression of the array factor for the uniform linear array

c) **Consider** N=6 dipole elements separated by $d = \lambda/2$ with uniform feeding and progressive phase shift $\alpha = \pi$. If the dipoles are placed on Z-axis, and oriented towards Y-axis.

1. Determine the array type.
2. Plot only the array factor.
3. Determine the HPBW and the directivity of the array.
4. Determine the peak value of the first side lobe level.
5. If it is required to steer the main lobe towards $\theta_o = 60^\circ$, design the feeding network.

Question (3): 25 Marks

a) **What** is the main factor that affects the half power beamwidth of the binomial array?

a) **Explain** why the side lobes of the Tschebyscheff array are of the same level.

b) **Consider a** broadside Tschebyscheff array consisting of $N = 5$ antenna elements with side lobe level $SLL = -16dB$ and uniform element spacing $d = \lambda/2$. **Determine** the excitation coefficients of the array elements and **plot** the array factor. **State** the main disadvantage of the Tschebyscheff array.

Question (4): 25 Marks

a) **Prove** that the array factor of the planar antenna array is equivalent to the product of the array factors of two linear arrays in X and Y directions.

b) A (6×4) planar antenna array having progressive phase shifts of 0, and $-\pi/2$ in X-direction and Y-direction respectively. The elements spacing are $dx = dy = \lambda/2$. **Determine** the main lobe direction. **Determine** the array directivity. **Sketch** the total field in (x-y), (x-z), and (y-z) planes if the elements of the array are dipoles oriented in X-direction.

c) Consider 8 elements circular antenna array of radius a = 3λ, the array elements are monopoles oriented in Z-direction.

1. **Write** down the general equation of the array factor of the circular array using Bessel form.
2. **Determine** the angular separation ϕ_n of the n^{th} element.
3. **Plot** the total field pattern of the array considering broadside direction.

رَبِّ اشْرَحْ لِي صَدْرِي* وَيَسِّرْ لِي أَمْرِي

Dr. Samar Ibrahim Farghaly

Tanta University

Department of Electronics and Communication Engineering
Total Marks: 90 Marks

Faculty of Engineering

Course Title: **Wave Propagation and Antennas (2)** Course Code: EEC 3123 Year: 4th

Date: 12 Jan, 2023 **Allowed Time: 3 Hours** **No. of pages: 3**

Answer all the following questions: *Assume any missing data*

Question (1):20 Marks

1. **The directivity of the Hansen –Woodward array is less than the directivity of the end—fire array?**
   a) True b) False
2. **The uniform linear arrays have the smallest HPBW?**
   a) True b) False
3. **Chebyshave array has side lobe level smaller than Binomial array?**
   a) True b) False
4. **We can feeding the Chebyshave elements with the same excitation coefficients.**
   a) True b) False
5. **The directivity of Broadside array is double the End fire**
   a) True b) False
6. **Which of the following is false regarding Antenna array?**
   a) Directivity increases b) Directivity decreases
   c) Beam width decreases d) Gain increases
7. **What is the phase excitation difference for an end-fire array?**
   a) 0 b) π
   C) βd d) βd/2
8. **Find the overall length of the end-fire array with 10 elements and spacing λ/4.**
   a) 9λ/4 b) 7 λ/4
   c) 5λ/4 d) 10 λ/4
9. **What is the directivity of a linear broadside array in dB consisting 5 isotropic elements with element spacing λ/4?**
   a) 9.37 b) 6.53
   c) 2.45 d) 3.97
10. **The maximum possible spacing between antenna elements in broadside array to avoid appearance of the grating lobes is**
    a) 2 λ b) λ
    c) 3 λ/2 d) 3 λ

رَبِّ اشْرَحْ لِي صَدْرِي * وَيَسِّرْ لِي أَمْرِي

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Course Title: **Wave Propagation and Antennas (2)** Course Code: EEC 3123 Year: 4th

Date: 12 Jan, 2023 **Allowed Time: 3 Hours** **No. of pages: 3**

11. **The dynamic range ratio (DRR) is defines as:**
    a) The ratio between the maximum value of the excitation coefficients to the minimum value
    b) The ratio between the minimum value of the excitation coefficients to the maximum value
    a) The ratio between the maximum value of the first side lobe to the main lobe
    b) None of the above
12. **All Chebyshave polynomials, of any order, pass through the point**
    a) (-1, 1). b) (1, 1)
    c) (1, -1) d) (-1, -1)
13. **What happens to the beam-width of antenna if the frequency of operation is increased?**
    a) Beam-width will decrease b) Beam-width will increase
    c) Beam-width is independent of frequency d) Beam width may increase or decrease
14. **Which of the following array is used to synthesize pattern without side lobes?**
    a) Binomial array b) Linear array
    c) End-fire array d) Broadside array
15. **Which of the following array has large dynamic range ratio (DRR)?**
    a) Binomial array b) Linear array
    c) End-fire array d) Broadside array
16. **Which of the following array provides more symmetrical patterns with low S.L.L?**
    a) Binomial array b) Linear array
    c) Planner array d) Chebyshev array
17. **The main lobe direction in the circular array factor can be determine by**
    a) α_n b) φ_n
    c) γ_n d) radius (a)
18. **Zeros of the array factor of the uniform linear array occurs at:**
    a) $\psi = \frac{N\pi}{2}$ b) $\psi = \frac{2n\pi}{N}$
    c) $\psi = \frac{n\pi}{N}$ d) $\psi = \frac{n\pi}{2}$
19. **The array factor of the uniform linear array has even symmetry around**
    a) π b) 5π
    c) a and b d) 2π
20. **The array factor doesn't depend on**
    a) Type of Antenna element b) Number of antenna elements
    c) Interelement spacing d) Progressive phase shift

رَبِّ اشْرَحْ لِي صَدْرِي * وَيَسِّرْ لِي أَمْرِي

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Tanta University — Department: Electronics and Electrical Communication Eng. — Faculty of Engineering

Total Marks: 90 Marks

Course Title: Telecommunication Networks	**Course Code: EEC 4124**	**Year: 4th**
Date: 10 /1 /2023	**Allowed time: 3 hours**	**No. of Pages: (3)**

Remarks: (attempt to answer the following questions ... assume any missing data ... answers should be supported by equations and sketches)

Question (1)
Choose the correct answer

1) The holding time is defined as

a) The duration of occupancy of a traffic path by a call
b) The service time
c) The average call duration
d) All of the pervious

2) The calling rate is defined as

a) The number of times a route or traffic path is used per unit period
b) The call intensity per traffic path during the busy hour
c) The number of call requests during a measured time interval divided by that interval
d) All of the pervious

3) The Carried traffic is defined as

a) The volume of traffic actually carried by a switch
b) Offered traffic
c) The volume of traffic offered to a switch
d) All of the pervious

4) If there are 354 lines connected for service and 6 blocked calls during the busy hour, the GoS is

a) 1.66 %
b) 1.69 %
c) 1.72 %
d) None of the above

5) Supervisory signalling

a) Provides information on circuit condition and indicates whether a circuit is in use or idle.
b) informs the switch and interconnecting trunk circuits whether a calling party is "off hook" or "on hook"
c) a or b
d) a and b

6) Congestion involves

a) all circuits busy
b) overflow
c) a and b
d) None of the pervious

7) Call congestion refers to

a) fraction of an hour during which all trunks are busy simultaneously
b) number of calls that fail at first attempt
c) the ratio of the busy period to the total period of observation
d) None of the pervious

8) Performance measures that are affected by the routing algorithm

a) Throughput
c) data rate
b) Average delay
d) All of the pervious

Question (2)
Choose the correct answer

1) The most common measurement of efficiency is the grade of service
a) True
b) False

2) Erlang is 60 call-minutes
a) True
b) False

3) NEXT is interference that appears on another pair at the opposite or far end of the cable to the source of the interference
a) True
b) False

4) NEXT level is independent of the cable's length
a) True
b) False

5) A circuit switching is used to transmit only real time video calls, while packet switching is used to transmit only emails
a) True
b) False

6) In fixed routing, there is no difference between routing for datagram and virtual circuit
a) True
b) False

7) Dynamic routing does not react to network congestion
a) True
b) False

8) In circuit switching, resources need to be reserved during data transfer phase
a) True
b) False

9) The propagation delay affected if the packet length is increased
a) True
b) False

10) Datagram is an example of connectionless, while virtual circuit is connection-oriented
a) True
b) False

11) In infinite traffic sources, the probability of call arrival is constant and does not depend on the state of occupancy of the system
a) True
b) False

12) The offered traffic differs from carried traffic by the number of lost calls (True/False).
a) True
b) False

13) Concentration increases the number of switching paths within the exchange and the number of trunks connecting the local exchange to other exchange
a) True
b) False

14) The circuit switching is suitable for voice traffic and not efficient for data traffic
a) True
b) False

15) In fixed routing, route may change in response to a link or node failure
a) True
b) False

Question (3)

(a) Deduce an expression for the minimum number of crosspoints of a non-blocking three-stage switch.

(b) For a three-stage switch shown in Figure (1), an input line is busy 10% of the time.

i. Estimate the percent of time, p_1; that a line between the first and second stage is busy.

ii. Show how does this p_1; affect the blocking performance of the intermediate switch?

iii. What is the proportion of time, p_2; that a line between the second and third stage is busy?

iv. Show that full availability isn't sufficient condition for non-blocking case, Give an example.

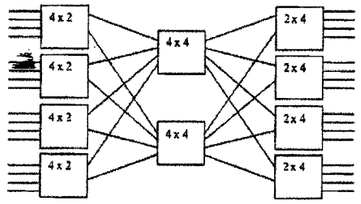

Figure 1

Question (4)

(a) Define the following terms: inter-arrival time, GoS, time congestion, and call congestion.

(b) Apply the following sentence for the loss system "Time congestion doesn't necessitate call congestion".

(c) Consider a single channel packet network works as a delay system. In a busy hour, 1800 packets are offered, each of 1.2 sec duration. Calculate

i. The probability that a packet is delayed.

ii. The average number of packets in the network.

iii. The average time spent in the network.

iv. The probability that there are more than 5 users in the system.

v. The average number of waiting packets.

(d) There are two trunk groups are used between two switching offices. The first group has 12 channels and the second group has 6 channels. If the first group; handling 64 call trials per hour with 10 minutes expected duration. What is the blocking probability of the first group? If the overflow traffic from the first group is offered to the second one; determine the blocking probability of the second group, and the probability that both groups are blocked simultaneously. Compare your result to the probability of one 18-channels trunk group. Comment clearly on your results. (Hint: use Erlang's table)

Best Wishes of Success

Dr. Heba A. El-Khobby

Erlang B Traffic Table

Maximum Offered Load Versus B and N
B is in %

N/B	0.01	0.05	0.1	0.5	1.0	2	5	10	15	20	30	40
1	.0001	.0005	.0010	.0050	.0101	.0204	.0526	.1111	.1765	.2500	.4286	.6667
2	.0142	.0321	.0458	.1054	.1526	.2235	.3813	.5954	.7962	1.000	1.449	2.000
3	.0868	.1517	.1938	.3490	.4555	.6022	.8994	1.271	1.603	1.930	2.633	3.480
4	.2347	.3624	.4393	.7012	.8694	1.092	1.525	2.045	2.501	2.945	3.891	5.021
5	.4520	.6486	.7621	1.132	1.361	1.657	2.219	2.881	3.454	4.010	5.189	6.596
6	.7282	.9957	1.146	1.622	1.909	2.276	2.960	3.758	4.445	5.109	6.514	8.191
7	1.054	1.392	1.579	2.158	2.501	2.935	3.738	4.666	5.461	6.230	7.856	9.800
8	1.422	1.830	2.051	2.730	3.128	3.627	4.543	5.597	6.498	7.369	9.213	11.42
9	1.826	2.302	2.558	3.333	3.783	4.345	5.370	6.546	7.551	8.522	10.58	13.05
10	2.260	2.803	3.092	3.961	4.461	5.084	6.216	7.511	8.616	9.685	11.95	14.68
11	2.722	3.329	3.651	4.610	5.160	5.842	7.076	8.487	9.691	10.86	13.33	16.31
12	3.207	3.878	4.231	5.279	5.876	6.615	7.950	9.474	10.78	12.04	14.72	17.95
13	3.713	4.447	4.831	5.964	6.607	7.402	8.835	10.47	11.87	13.22	16.11	19.60
14	4.239	5.032	5.446	6.663	7.352	8.200	9.730	11.47	12.97	14.41	17.50	21.24
15	4.781	5.634	6.077	7.376	8.108	9.010	10.63	12.48	14.07	15.61	18.90	22.89
16	5.339	6.250	6.722	8.100	8.875	9.828	11.54	13.50	15.18	16.81	20.30	24.54
17	5.911	6.878	7.378	8.834	9.652	10.66	12.46	14.52	16.29	18.01	21.70	26.19
18	6.496	7.519	8.046	9.578	10.44	11.49	13.39	15.55	17.41	19.22	23.10	27.84
19	7.093	8.170	8.724	10.33	11.23	12.33	14.32	16.58	18.53	20.42	24.51	29.50
20	7.701	8.831	9.412	11.09	12.03	13.18	15.25	17.61	19.65	21.64	25.92	31.15
21	8.319	9.501	10.11	11.86	12.84	14.04	16.19	18.65	20.77	22.85	27.33	32.81
22	8.946	10.18	10.81	12.64	13.65	14.90	17.13	19.69	21.90	24.06	28.74	34.46
23	9.583	10.87	11.52	13.42	14.47	15.76	18.08	20.74	23.03	25.28	30.15	36.12
24	10.23	11.56	12.24	14.20	15.30	16.63	19.03	21.78	24.16	26.50	31.56	37.78
25	10.88	12.26	12.97	15.00	16.13	17.51	19.99	22.83	25.30	27.72	32.97	39.44
26	11.54	12.97	13.70	15.80	16.96	18.38	20.94	23.89	26.43	28.94	34.39	41.10
27	12.21	13.69	14.44	16.60	17.80	19.27	21.90	24.94	27.57	30.16	35.80	42.76
28	12.88	14.41	15.18	17.41	18.64	20.15	22.87	26.00	28.71	31.39	37.21	44.41
29	13.56	15.13	15.93	18.22	19.49	21.04	23.83	27.05	29.85	32.61	38.63	46.07
30	14.25	15.86	16.68	19.03	20.34	21.93	24.80	28.11	31.00	33.84	40.05	47.74
31	14.94	16.60	17.44	19.85	21.19	22.83	25.77	29.17	32.14	35.07	41.46	49.40
32	15.63	17.34	18.21	20.68	22.05	23.73	26.75	30.24	33.28	36.30	42.88	51.06
33	16.34	18.09	18.97	21.51	22.91	24.63	27.72	31.30	34.43	37.52	44.30	52.72
34	17.04	18.84	19.74	22.34	23.77	25.53	28.70	32.37	35.58	38.75	45.72	54.38
35	17.75	19.59	20.52	23.17	24.64	26.44	29.68	33.43	36.72	39.99	47.14	56.04
36	18.47	20.35	21.30	24.01	25.51	27.34	30.66	34.50	37.87	41.22	48.56	57.70
37	19.19	21.11	22.08	24.85	26.38	28.25	31.64	35.57	39.02	42.45	49.98	59.37
38	19.91	21.87	22.86	25.69	27.25	29.17	32.62	36.64	40.17	43.68	51.40	61.03
39	20.64	22.64	23.65	26.53	28.13	30.08	33.61	37.72	41.32	44.91	52.82	62.69
40	21.37	23.41	24.44	27.38	29.01	31.00	34.60	38.79	42.48	46.15	54.24	64.35
41	22.11	24.19	25.24	28.23	29.89	31.92	35.58	39.86	43.63	47.38	55.66	66.02
42	22.85	24.97	26.04	29.09	30.77	32.84	36.57	40.94	44.78	48.62	57.08	67.68
43	23.59	25.75	26.84	29.94	31.66	33.76	37.57	42.01	45.94	49.85	58.50	69.34

Tanta University

Department of Electronics and Communication Engineering
Total Marks: 125 Marks

Faculty of Engineering

Course Title: **Satellite Communication Systems** Course Code: EEC 4122 Year: 4th
Date: 22/1/2023 **Allowed Time: 3 Hours** **No. of pages: 3**

Answer all the following questions: Assume any missing dat

Question.1: (30) Marks

1. In satellite communication modulation is used.
a) AM b) FM
c) PWM d) PAM

2. The main advantage of satellite communication is
a) Low cost b) Low distortion
c) High reliability d) High band width

3. Low-Earth-orbit (LEO) satellites have.....orbits
a) Equatorial b) polar
c) Inclined d) none of the above

4. Geostationary satellite are generally put in.....orbit and domestic satellite in .....orbit
a) Polar, inclined orbit b) Polar, equatorial
c) Equatorial, polar b) Inclined, polar

5. When is the speed of the satellite maximum in an elliptical orbit?
a) Retrograde b) Prograde
c) Perigee d) Apogee

6. The angle between the line from the earth station's antenna to the satellite and the line between the earth station's antenna and the earth's horizon is called as.....
a) Angle of inclination b) Angle of elevation
c) Apogee angle d) LOS angle

7. The transmitter-receiver combination in the satellite is known as a .....
a) Relay b) Repeater
c) Transponder d) Duplexer

8. Refers to the line joining the perigee and apogee through the center of the earth
a) Line of sight b) Line of nodes
c) Equatorial nelt d) Line of apsides

9. An orbit when the satellite rotates in a path above the equator.
a) Polar orbit b) Inclines orbit
c) Equatorial orbit d) Geosynchronous orbit

10. Ionosphere effects inversely proportional to frequency squared?
a) True b) False

11. For global communication, the number of satellites needed is
a) 1 b) 3
c) 10 d) 15

12. The time period taken by the satellite to complete one orbit is called _
a) Lapsed time b) Time period
c) Sidereal period d) Unit frequency

Tanta University

Department of Electronics and Communication Engineering
Total Marks: 125 Marks

Faculty of Engineering

Course Title: **Satellite Communication Systems** Course Code: EEC 4122 Year: 4th
Date: 22/1/2023 **Allowed Time: 3 Hours** **No. of pages: 3**

13. The term Eclipse is defined as
a) During equinox periods, the earth the sun & the satellite are in alignment with the result that earth' s shadow eclipses that satellite & the sunlight fails to reach the satellite solar cells.
b) During equinox periods, the earth the sun & the satellite are in alignment with the result that earth' s shadow eclipses that satellite & the sunlight success to reach the satellite solar cells.
c) a & b d) None of above

14. What is an EIRP?
a) It is a measure of radiated or transmitted power of an antenna. It can be completed from the antenna gain & the power fed to the antenna input.
b) It is a measure of radiated or transmitted power of an antenna. It can be completed from the antenna gain & the power fed from the antenna output.
c) Either a or b. d) None of above

15. What is a noise power spectral density?
a) $N_0 = P_N/B_N = KT_N\ joules$ b) $N_0 = KT_N/B_N$
c) $N_0 = B_N/P_N = KT_NB_0\ joules$ d) None of above

16. What is an Intermodulation noise?
(a) Intermodulation distortion in high power amplifier can result in signal products which appear as noise & in fact is referred to as Intermodulation noise.
(b) Intermodulation distortion in LNA can result in signal products which appear as noise & in fact is referred to as Intermodulation noise.
(c) Intermodulation distortion in LNA & HPA can result in signal products which appear as noise & in fact is referred to as Intermodulation noise.
(d) None of above

17. A typical signal strength received from a geosynchronous communication satellite is of the order of a few
a) Milliwatts b) kilowatts
c) Picowatts d) watts

18. Atmospheric drag has effect on
a) Geostationary satellites b) MEO
c) LEO satellites below about 1000 km. d) None of these

19. What is the use of the band pass filter in the receiver section?
a) Protects the receiver b) Increases antenna gain
c) Reduces noise d) To reduce it to an intermediate frequency

20. The three axes referred to the three-axis attitude stabilization are; except
a) Pitch b) Yaw
c) Roll d) Speed

Electronics and Electrical Communications Engineering Department

Total Marks: 40 Marks

Course Title: Project Management	**Allowed time: 2 Hours**
Year : 4th year	**Number of pages: 6**
Date :	

السؤال الأول:

أختر الإجابة الصحيحة: (30 درجات)

1) ..... هي علم وفن يحتاج إلى كفاءة عالية للممارسة العمل في جوّ من التفاهم والوعي والاحترام المتبادل .
   أ. الكفاءة
   ب. الإدارة
   ج. المشروع
   د. الخبرة
2) يعتبر المشروع نظامًا ..... يؤثر ويتأثر بالبيئة المحيطة .
   أ. مفتوحًا
   ب. مغلقًا
   ج. محدودًا
   د. جميع ما سبق
3) يتحقق الجانب ..... عن طريق الأبحاث والدراسات والتطبيقات .
   أ. العلمي
   ب. الفني
   ج. الكفاءة
   د. جميع ما سبق
4) التعامل مع العنصر البشري في بيئة تتفاعل مع العديد من المتغيرات يكون للتقدير والحكم الشخصي يعد هذا من الجانب ..... في العملية الادارية .
   أ. الفني
   ب. الخبرة
   ج. الكفاءة
   د. أ ، ب معًا

5) المشروع الناجح هو الذي ينتهي بعد تحقيقي متطلباته وفقا لـ ..... .

أ. الوقت المحدد

ب. التكلفة المحددة

ج. الجودة المطلوبة

د. جميع ما سبق

6) يعتبر ..... أحد التحديات التي تواجه المشاريع.

أ. الغاية

ب. التفرد

ج. فريق المشروع

د. لا شيء مما سبق

7) ..... هي علم وفن حل المشكلات ضمن الوقت المحدد مسبقا وباستخدام الموارد المتاحة.

أ. إدارة المشاريع

ب. التفرد

ج. الاعتمادية المتداخلة

د. الصراع

8) العوامل الخارجية التي تؤثر عل العملية الدراية.

أ. عوامل تقنية

ب. عوامل سياسية

ج. عوامل اجتماعية

د. جميع ما سبق

9) ..... هو أحد أهداف أي مشروع مهما اختلف طبيعته أو حجمه .

أ. الوقت

ب. التكلفة

ج. المواصفات

د. جميع ما سبق

10) ..... هي الوثيقة الرئيسية التي يتم من خلالها نقل متطلبات العميل إلى المشروع.

أ. مقترح المشروع

ب. خطة المشروع

ج. جدول المشروع

د. موازنة المشروع

11) ..... هي عقد الالتزام.

أ. مقترح المشروع

ب. خطة المشروع

ج. جدول المشروع

د. موازنة المشروع

12) ..... هو كل ما يتعلق بالجانب الزمني لإنجاز المشروع .

أ. مقترح المشروع

ب. خطة المشروع

ج. جدول المشروع

د. موازنة المشروع

13) ..... هو كل ما يتعلق بالجانب المالي للمشروع.

أ. مقترح المشروع

ب. خطة المشروع

ج. جدول المشروع

د. موازنة المشروع

14) ..... هو الفرق بين كمية المال في نهاية الفترة وكمية المال في بداية الفترة.

أ. معدل الفائدة

ب. الفائدة

ج. الفائدة المدفوعة

د. الفائدة المكتسبة

15) ..... قيمة أو مقدار المال في بداية الفترة.

أ. القيمة الابتدائية

ب. القيمة النهائية

ج. الأقساط السنوية

د. التدرج الحسابي

16) ..... قيمة أو مقدار المال في نهاية الفترة.

أ. القيمة الابتدائية

ب. القيمة النهائية

ج. الأقساط السنوية

د. التدرج الحسابي

17) ..... سلسلة من المبالغ المتتالية المتساوية في نهاية الفترة.

أ. القيمة الابتدائية

ب. القيمة النهائية

ج. الأقساط السنوية

د. التدرج الحسابي

18) ..... سلسلة من التدفقات النقدية التي تزيد أو تنقص بمقدار ثابت كل فترة.

أ. القيمة الابتدائية

ب. القيمة النهائية

ج. الأقساط السنوية

د. التدرج الحسابي

19) يرمز لعامل استهلاك الأموال بـ ..... .

أ. F/P

ب. F/A

ج. P/A

د. F(A/F ,i,n)

20) يرمز لعامل الفائدة للقيمة النهائية لدفعات متدفقة متساوية بـ ..... .

أ. F/P

ب. P/A

ج. A/F

د. A(F/A ,i,n)

21) يرمز لعامل استرداد رأس المال بـ ..... .

أ. p(A/P ,i,n)

ب. F/A

ج. P/A

د. A/F

22) خصائص مدير المشروع.

أ. عام ومعرفته متوسطة، ولكن في أ كثر من تخصص.

ب. يسهل الأمور لأصحاب المعرفة الفنية.

ج. يستخدم أسلوب النظامي

د. جميع ما سبق

23) ..... تحديد الأهداف والموارد الضرورية.

أ. التخطيط للمشروع

ب. تنظيم المشروع

ج. موازنة المشروع

د. توجيه المشروع

24) ..... توزيع المسئوليات والصلاحيات، تحديد العلاقة مع الهيكل التنظيمي للمنظمة الأم.

أ. التخطيط للمشروع

ب. تنظيم المشروع

ج. موازنة المشروع

د. توجيه المشروع

25)..... وهو توجيه فريق العمل عن طرق القيادة والتحفيز، من أجل أداء أفضل.

أ. التخطيط للمشروع

ب. تنظيم المشروع

ج. موازنة المشروع

د. توجيه المشروع

26)..... تحديد المعايير التي تستخدم لتقييم الأداء ، ثم القياس ، والحصول على التغذية العكسية.

أ. التخطيط للمشروع

ب. تنظيم المشروع

ج. الرقابة على المشروع

د. توجيه المشروع

27) مراحل إدارة المشروع

أ. مرحلة التسليم

ب. مرحلة التنفيذ

ج. مرحلة الفكرة أو المفهوم

د. جميع ما سبق

28)..... متخصص ويملك معرفة عميقة بالوظيفة التي يتولاها (مدير تسويق، مدير محاسبة ، .....)

أ. المدير الوظيفي ج. أ&ب

ب. مدير المشروع د.غير ذلك

29)المحددات الأخلاقية لمدير المشروع.

أ. الابتعاد عن التلاعب بالمناقصات.

ب. تعاطي الرشوة للحصول على المناقصات.

ج. تحويل فريق العمل إلى مجموعة غير منضبطة.

د. الاعتداء عن الموارد واللعب بها حتى تصبح ضمن الموازنة التقديرية.

30) ..... عرض مقدم من المقاول للمالك يطلب فيه تنفيذ العمل عند سعر معين طبقًا لمستندات العطاء

أ. العطاء ج.أمر اسناد مباشر

ب. المناقصات د. غير ذلك

السؤال الثاني: (10 درجات)

A. إذا قمت باستثمار 1000 دولار لمدة 5 سنوات بمعدل فائدة سنوية 9 %. ما هو مقدار المال الذي سوف تحصل عليه في نهاية الفترة.

B. في عام 2012 قام أحمد باستثمار مبلغ 150 مليون دولار لإنشاء مصنع لإنتاج التلفزيونات. بافتراض أن الفائدة 11 % سنويا.

ما هو المبلغ المكافئ المطلوب لكي يتم أنشاء المصنع في عام 2015؟

ما هو المبلغ المكافئ المطلوب لكي يتم انشاء المصنع في عام 2008؟

With Best Wishes

Dr. Salah Khamis