Group: Electrical, Electronics & Computer

Booklet Series B

Read carefully INSTRUCTIONS FOR THE CANDIDATES given on the front page and answer the following questions:

1	The electron affinity of chlorine is 349 kJ/mol. What is the correct equation for the formation of chloride?	
	A. $Cl(s) + e^- \rightarrow Cl^-(s) + 349\ kJ$	C. $Cl(s) + 349\ kJ + e^- \rightarrow Cl^-(s)$
	B. $Cl(g) + e^- \rightarrow Cl^-(g) + 349\ kJ$	D. $Cl(g) + 349\ kJ + e^- \rightarrow Cl^-(g)$
2	Which set of elements has the strongest tendency to form positive ions in their gaseous state?	
	A. Li, Na, K	C. F, Cl, Br
	B. Be, Mg, Ca	D. O, S, Se
3	Out of these diatomic molecules C_2, N_2, O_2, F_2 which has maximum bond order	
	A. C_2	C. N_2
	B. O_2	D. F_2
4	Which of the following ions would have the smallest ionic radius?	
	A. O^{2-}	C. Cl^-
	B. Mg^{2+}	D. Al^{3+}
5	The geometry and type of hybrid orbital present around the central atom in PCl_3	
	A. Linear, *sp*	C. Tetrahedral, sp^3
	B. Trigonal planar, sp^2	D. Pyramidal, sp^3
6	Which statement does not explain why elements in a group are placed together?	
	A. They have the same number of valence electrons	C. They tend to have the same electronegativities
	B. They tend to have similar oxidation number	D. They tend to have the same chemical reactivity
7	What is the empirical formula for a compound that contains 17.32% hydrogen and 82.68% carbon	
	A. C_5H	C. CH_4
	B. C_2H_5	D. C_2H_6
8	Uncertainty in position of a particle of 20 g in space is 10^{-4} m. Hence, uncertainty in velocity ($m\ s^{-1}$) is (Planck's constant, $h = 6.6 \times 10^{-34}$ J s)	
	A. 2.6×10^{-29}	C. 3.0×10^{-34}
	B. 2.2×10^{-34}	D. 3.5×10^{-25}
9	The number of radial nodes of 4s and 2p orbitals are respectively:	
	A. 3, 0	C. 0, 3
	B. 2, 0	D. 2, 1
10	The values of four quantum numbers of valence electron of an element are n=4, l=0, m=0 and s=+1/2. The element is :	
	A. V	C. Na
	B. K	D. Sc
11	What is the oxidation number of phosphorus in KH_2PO_4?	
	A. –VI	C. +V
	B. II	D. +VI
12	Which one of the following is not a form of chemical bonding?	
	A. Covalent bonding	C. Ionic bonding
	B. Hydrogen bonding	D. Metallic bonding

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13	According to the Bohr model of the atom	
	A. Electrons in orbit around nuclei lose energy so slowly	C. Quantum theory is not applicable to the ultra-structure of an atom.
	B. Electrons around a nucleus can have only certain particular energies and can only occupy certain specific orbits at particular distances from the nucleus	D. None of these.
14	Calculate the molarity of NaOH in solution prepared by dissolving its 2g in water of 250 mL of the solution	
	A. 0.2 mol L^{-1}	C. 0.1 mol L^{-1}
	B. 0.4 mol L^{-1}	D. 0.02 mol L^{-1}
15	The wave function Ψ (*psi*)	
	A. Represents the particle function associated with a wave	C. A large value of psi squared indicates the strong possibility of the particle's presence
	B. It is not related to quantum theory and de Broglie waves	D. A small value of psi squared indicates the strong possibility of the particle's presence
16	The angle between centripetal acceleration and tangential acceleration is?	
	A. 0^0	C. 90^0
	B. 45^0	D. 180^0.
17	A particle having position vector of a particle in S.I units is $\vec{r} = 4t^2\hat{i} + 3t^2\hat{j} + 2t\hat{k}$, the acceleration of the particle will be :	
	A. 4 m $/s^2$	C. 5 m $/s^2$
	B. 10 m $/s^2$	D. None of these
18	A mortar shell is fired with the velocity of 10 m/s at an angle of 45°, Calculate range of shell	
	A. 9 m	C. 11.2 m
	B. 10.2 m	D. 11.2 cm
19	A rock is released from the top of a very high cliff, approximately how far does the rock travel in the first 7 seconds of its free-fall? (Assume no air friction.)	
	A. 120.05 m	C. 240.1 m
	B. 60.2 m	D. None of these
20	If 'I' is the moment of inertia and 'E' is the kinetic energy of rotation of a body, then its angular momentum will be	
	A. $\sqrt{(EI)}$	C. EI
	B. 2EI	D. $\sqrt{(2EI)}$
21	A circular thin disc of mass 4 kg has a diameter 0.4 m. Calculate the moment of inertia about an axis passing through the edge and perpendicular to the plane of the disc (In kgm^2)	
	A. 0.24	C. 0.16
	B. 0.96	D. None of these
22	A round disc of moment of inertia I_2 about its axis perpendicular to its plane and passing through its centre is placed over another disc of moment of inertia I_1 rotating with an angular velocity 'ω' about the same axis. The final angular velocity of the combination of discs is:	
	A. $I_2\omega/(I_1 + I_2)$	C. ω
	B. $I_1\omega/(I_1 + I_2)$	D. $(I_1 + I_2)\omega/I_1$
23	A particle moves with constant angular momentum, what is true out of the following:	
	A. Torque will be non zero but constant.	C. Linear momentum and displacement are parallel to each other

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	B. Torque will be zero.	D. None of these
24	If the pressure of an ideal gas is decreased by 10%, isothermally, then its volume will	
	A. Increase by 11.1%	C. Increases by 9%
	B. Increase by 10.1%	D. None of these
25	Translational kinetic energy for one mole of the gas, is equal	
	A. 3/2 RT	C. 3/2 kT
	B. ½ RT	D. ½ kT
26	For the propagation of electro-magnetic waves, Electric and magnetic field	
	A. Oscillate parallel to each other and perpendicular to the direction of light	C. Oscillate parallel to each other and also to the direction of light
	B. Oscillate perpendicular to each other and also to the direction of light	D. None of these
27	What is not must for the propagation of Electromagnetic waves	
	A. medium	C. electric field
	B. magnetic field	D. a charge
28	The work function of Na is greater than that of K. If both the surfaces are irradiated with yellow light, then the K.E. of the emitted photoelectrons in the Na surface as compared to the K.E. of the photoelectrons in the K surface will be	
	A. Less	C. More
	B. Same	D. Cannot be determined
29	The Half Life of a radioactive substance is 6 hours. After how much time will one eighth of the radioactivity in a sample remain?	
	A. 12	C. 15
	B. 18	D. 24
30	The Radioactive Decay Law is expressed by	
	A. a linear function	C. a quadratic function
	B. a sinusoidal function	D. an exponential function
31	If a+b=1, then $\sum_{r=0}^{n} C(n,r)a^r b^{n-r}$ is equal to	
	A. [illegible]	C. 0
	B. n	D. None of these
32	Let S(K) = 1+3+5+.....+(2K-1) = $3+K^2$. Then which of the following is true?	
	A. S(K) does not imply S(K+1)	C. S(1) is correct
	B. S(K) imply S(K+1)	D. Principle of mathematical Induction can be used to prove the formula
33	Let α and β are the roots of equation $x^2-x+1=0$, then $\alpha^{2009} + \beta^{2009}$ =	
	A. -1	C. 1
	B. 2	D. -2
34	If a>0, b>0, c>0, then (a+b)(b+c)(c+a) is greater than	
	A. 2(a+b+c)	C. 3(a+b+c)
	B. 6abc	D. 8abc
35	Total number of four digit odd numbers that can be formed using 0,1,2,3,5,7 are	
	A. 216	C. 400
	B. 375	D. 720
36	$\tan 9^\circ + \tan 81^\circ + \tan 27^\circ + \tan 63^\circ$ =	

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	A. $4\sqrt{3}$	C. $\sqrt{5}/4$
	B. 4	D. None of these
37	In a triangle ABC, cosA + 2cosB + cosC = 2, then a,b,c are in	
	A. H.P.	C. A.P.
	B. G.P.	D. None of these
38	A flagstaff 10m high stands at the centre of an equilateral triangle, which is horizontal. At the top of the flagstaff each side subtends an angle of 60°. The length of each side of triangle is	
	A. $6\sqrt{3}$	C. $5\sqrt{6}$
	B. $4\sqrt{6}$	D. $6\sqrt{5}$
39	The equation of $\sin^6 x + \cos^6 x = a$ has a real solution in x if	
	A. $0.5 \leq a \leq 1$	C. $-1 \leq a \leq 1$
	B. $0.25 \leq a \leq 1$	D. $0 \leq a \leq 0.5$
40	If $\sec 2\theta = \tan\phi + \cot\phi$, then a value of $\theta+\phi$ is	
	A. $\pi/2$	C. $\pi/3$
	B. $\pi/4$	D. Π
41	If C is the reflection of A(2,4) in x-axis and B is the reflection of C in y-axis, then |AB| is	
	A. 20	C. $4\sqrt{5}$
	B. $2\sqrt{5}$	D. 4
42	The circles $x^2 + y^2 = 9$ and $x^2 + (y-5)^2 = 16$	
	A. Touch each other internally	C. Do not intersect
	B. Touch each other externally	D. Cut orthogonally
43	The axis of the parabola, $9y^2 - 16x - 12y - 57 = 0$	
	A. $3y = 2$	C. $y = 0$
	B. $16x + 61 = 0$	D. None of these
44	The eccentricity of an ellipse, with its centre at the origin is 0.5. If one of the directrices is x=4, then the equation of an ellipse is	
	A. $4x^2 + 3y^2 = 12$	C. $3x^2 + 4y^2 = 1$
	B. $3x^2 + 4y^2 = 12$	D. $4x^2 + 3y^2 = 11$
45	The locus of the equation, $(x^2+y^2)(x^2+y^2+x+y) = 0$ is	
	A. A straight line	C. A circle with centre at origin
	B. A circle through the origin	D. None of these
46	If $\sin^{-1} x + \sin^{-1}(1-x) + \cos^{-1} x = 0$ then x is equal to	
	A. 0	C. 2
	B. 1	D. None of these
47	Matrices A and B will be inverse of each other only if	
	A. AB = BA	C. AB = 0 , BA = I
	B. AB = BA = 0	D. None of these
48	A simplex in two dimension is	
	A. triangle	C. both triangle and rectangle
	B. rectangle	D. none of these

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49	$\frac{d^2x}{dy^2}$ equal to	
	A. $-\left(\frac{d^2y}{dx^2}\right)^{-1}\left(\frac{dy}{dx}\right)^{-3}$	C. $-\left(\frac{d^2y}{dx^2}\right)\left(\frac{dy}{dx}\right)^{-3}$
	B. $\left(\frac{d^2y}{dx^2}\right)\left(\frac{dy}{dx}\right)^{-2}$	D. $\left(\frac{d^2y}{dx^2}\right)^{-1}$
50	$\int_0^{\pi/2} \sin^2 x\, dx$ equal to	
	A. $\frac{\pi}{4}$	C. $\frac{\pi}{6}$
	B. $\frac{\pi}{2}$	D. $\frac{\pi}{3}$
51	Amla (gooseberries) is the richest source of which vitamin?	
	A. Vitamin A	C. Vitamin C
	B. Vitamin B	D. Vitamin D
52	Which of the following elements is a metal?	
	A. S	C. Cl
	B. Se	D. Ga
53	Indian Constitution was amended for the first time in ---	
	A. 1950	C. 1951
	B. 1952	D. 1953
54	Which of the following states has the largest representation in the Lok Sabha?	
	A. Bihar	C. Madhya Pradesh
	B. Maharashtra	D. Uttar Pradesh
55	Which one of the following statements regarding Ashokan stone pillars is incorrect?	
	A. These are highly polished	C. These are monolithic
	B. The shaft of pillars is tapering in shape	D. These are parts of architectural structures
56	The river most mentioned in early Vedic literature is —	
	A. Sindhu	C. Sarasvati
	B. Sutudri	D. Ganga
57	10 cats caught 10 rats in 10 seconds. How many cats are required to catch 100 rats in 100 seconds?	
	A. 100	C. 10
	B. 20	D. 50
58	Choose the correct alternative to fill in the blank space that will continue the same pattern. 4, 9, 13, 22, 35, _?_	
	A. 57	C. 63
	B. 60	D. 75
59	Which of the following was a recommendation of Hunter's Commission?	
	A. Women's education	C. Gradual withdrawal of state support from higher education
	B. New regulation for the organized senates system	D. Introduction of civic education at college and university level
60	Choose the correct meaning of the phrase/idiom- Smell a rat	
	A. To act unfairly	C. To have reason for suspect

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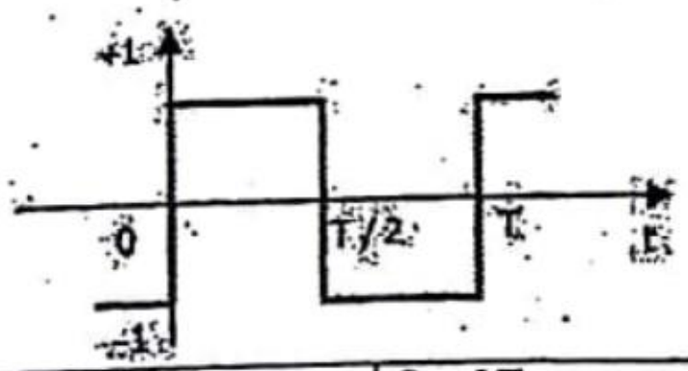
	B. To talk boastfully	D. To discourage
61	Where was the final match of Cricket World Cup 2015 held?	
	A. Melbourne	C. Sydney
	B. Wellington	D. Auckland
62	Who is the Chief Minister of Gujarat?	
	A. Narendra Modi	C. Shri Santosh Kumar Gangwar
	B. Anandiben Patel	D. K. Chandrashekar Rao
63	What is meaning of underlined idiom in the following sentence? I am afraid he is burning the candle at both ends and ruining his life.	
	A. Becoming overgenerous	C. Wasting his money
	B. Overtaxing his energies	D. Losing his objectives
64	What is meaning of underlined idiom in the following sentence? In the organised society of today no individual or nation can plough a lonely furrow.	
	A. Remain unaffected	C. Do without the help of others
	B. Survive in isolation	D. Remain non-aligned
65	_____ Ganga is a sacred river.	
	A. The	C. An
	B. A	D. None
66	Gandhi Ji _____ on charkha every day.	
	A. was spinning	C. had spun
	B. spins	D: spun
67	This is _____ best player I have ever met.	
	A. a	C. Both (A) and (B)
	B. the	D. None of these
68	My brother _____ football in the same club to which I am associated.	
	A. play	C. played
	B. plays	D. Is playing
69	John says, "I shall go there". Indirect narration form of this sentence is -	
	A. John said that he went there.	C. John says that he went there.
	B. John says that he will go there.	D. John said that I will go there.
70	Robert will say to me, "I am your classmate". Indirect narration form of this sentence is -	
	A. Robert will tell me that he is my classmate.	C. Robert will tell me that he will be my classmate.
	B. Robert will tell me that he was my classmate.	D. Robert said me that he is my classmate.
71	The second harmonic component of the periodic waveform given in the figure has an amplitude of 	
	A. 0.	C. 2/T.
	B. 1.	D. √5.
72	LVDT is a	
	A. capacitive transducer.	C. Inductive transducer.
	B. resistive transducer.	D. None of these.

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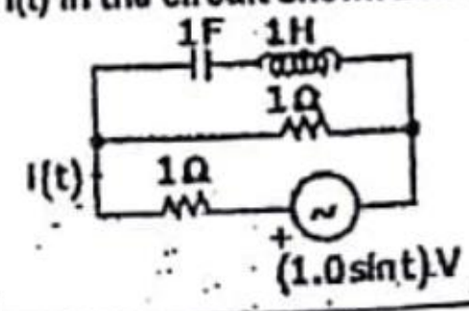
73	For the operation of enhancement-only N channel MOSFET, value of gate voltage has to be	
	A. zero	C. high positive
	B. low positive	D. high negative
74	For standard TTL logic circuits, the values of V_{OL} and V_{OH} are	
	A. 0.8 V and 2.0 V.	C. 0.4 V and 2 V.
	B. 0 V and 5 V.	D. 0.4 V and 2.4 V.
75	In an induction type of meter, maximum torque is produced when the phase angle, between two fluxes is	
	A. 0°.	C. 60°.
	B. 45°.	D. 90°.
76	The r.m.s. value of the current i(t) in the circuit shown below is 	
	A. 1/2.	C. 1.
	B. $1/\sqrt{2}$.	D. $\sqrt{2}$.
77	Piezoelectric crystals are used for the measurement of	
	A. temperature.	C. sound.
	B. velocity.	D. none of these.
78	Current base part of a transistor behaves like	
	A. constant current source.	C. a resistance.
	B. forward biased diode.	D. none of these.
79	In a dynamometer type wattmeter, the fixed coil is	
	A. voltage coil.	C. current coil.
	B. current or voltage coil.	D. none of the above.
80	For routine chest radiography you would expect to get the best contrast characteristics by using	
	A. 35 kV.	C. 95 kV.
	B. 65 kV.	D. 125 kV.
81	Given two coupled inductors L_1 and L_2, their mutual inductance M satisfies	
	A. $M = \sqrt{L_1^2 + L_2^2}$	C. $M > \sqrt{L_1 L_2}$
	B. $M > \frac{(L_1 + L_2)}{2}$	D. $M \leq \sqrt{L_1 L_2}$
82	The ionization vacuum gauge, in construction, is similar to a	
	A. Vaccum diode.	C. Thyratron.
	B. Vaccum triode.	D. None of these.
83	A crystal diode is used as	
	A. an amplifier.	C. an oscillator.
	B. a rectifier.	D. a voltage regulator.
84	The bridge method commonly used for finding mutual inductance is	
	A. Heaviside Campbell bridge.	C. De Sauty bridge.
	B. Schering bridge.	D. Wien bridge.
85	A series R-L-C circuit has R=50 Ω; L= 100 μH and C=1μF. The lower half power frequency of the circuit is	
	A. 30.55 kHz.	C. 51.92 kHz.
	B. 3.055 kHz.	D. 1.92 kHz.
86	The input and output displacements are of opposite phase in	
	A. simple lever.	C. compound gear trains.
	B. compound lever.	D. None of these.

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87 A diode whose terminal characteristics are related as $i_D = I_s\left(\frac{V}{V_T}\right)$, where I_s is the reverse saturation current and V_T is the thermal voltage (= 25 mV), is biased at $I_D = 2$ mA. Its dynamic resistance is

A. 25 ohms.
C. 50 ohms.
B. 12.5 ohms.
D. 100 ohms.

88 The simplified form of the Boolean expression $Y = (\overline{A}.BC + D)(\overline{A}.D + \overline{B}.\overline{C})$ can be written as

A. $\overline{A}.D + \overline{B}.\overline{C}.D$
C. $(\overline{A} + D)(\overline{B}.C + \overline{D})$
B. $AD + B.\overline{C}.D$
D. $A.\overline{D} + BC.\overline{D}$

89 If the distance of screen from a CRT to centre of deflection plates is 15 cm, the length of deflection plates of is 2 cm, the distance between plates is 1 cm and the accelerating voltage is 500 V, the deflection sensitivity is

A. 33.2 V / cm.
C. 66.4 V / cm.
B. 0.03 V / cm.
D. 0.015 V / cm.

90 Diagnostic ECG recording requires a band width of

A. 0.05 to 100 Hz.
C. 5 to 40 Hz.
B. 50 to 60 Hz.
D. 5 to 100 Hz.

91 When using dc signal conditioning system, with a carrier of 3 kHz, the frequency should be limited to

A. 1 kHz.
C. 600Hz.
B. 5 kHz.
D. 2 MHz.

92 An $X-Y$ flip flop, whose Characteristic Table is given below is to be implemented using a $J-K$ flip flop

X	Y	Q_{n+1}
0	0	1
0	1	Q_n
1	0	$\overline{Q}_n$
1	1	0

This can be done by making

A. $J = X, K = \overline{Y}$.
C. $J = Y, K = \overline{X}$.
B. $J = \overline{X}, K = Y$.
D. $J = \overline{Y}, K = X$.

93 The advantage of Varley loop tests over Murray loop tests is

A. they can be used for localizing of short circuit faults.
C. the loop resistance can be experimentally determined.
B. they can be used for localizing of earth faults.
D. their accuracy is higher.

94 The stroboscopic method of speed measurement has the advantage that

A. the method is simple and straight forward
C. a stationary image can be observed.
B. the multiples of angular speed can be measured.
D. there is no need of any physical contact between the instrument and the rotating shaft.

95 In the circuit shown below what is the output voltage (V_{out}) in Volts if a silicon transistor Q and an ideal op-amp are used?

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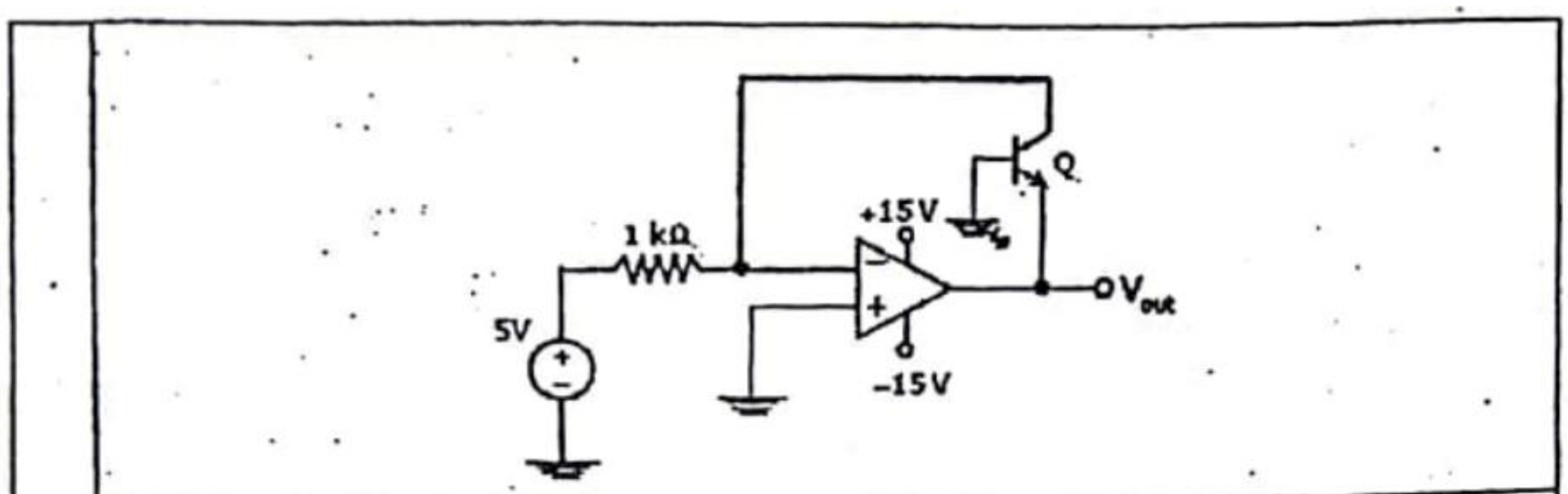

	A.	-15	C. 0.7
	B.	-0.7	D. 15
96	Consider different activities related to email. m1: Send an email from a mail client to a mail server m2: Download an email from mailbox server to a mail client m3: Checking email in a web browser. Which is the application level protocol used in each activity?		
	A.	m1:HTTP m2:SMTP m3:POP	C. m1: SMTP m2: POP m3: HTTP
	B.	m1:SMTP m2:FTP m3:HTTP	D. m1: POP m2: SMTP m3:HTTP
97	Which of the following is NOT desired in a good Software Requirement Specifications (SRS) document?		
	A.	Functional Requirements	C: Goals of Implementation
	B.	Non Functional Requirements	D. Algorithms for Software Implementation
98	Consider the following table of arrival time and burst time for three processes P0, P1 and P2. Process — Arrival time — Burst Time P0 — 0 ms — 9 ms P1 — 1 ms — 4ms P2 — 2 ms — 9ms The pre-emptive shortest job first scheduling algorithm is used. Scheduling is carried out only at arrival or completion of processes. What is the average waiting time for the three processes?		
	A.	5.0 ms	C. 6.33 ms
	B.	4.33 ms	D. 7.33 ms
99	What is the return value of the function foo when it is called as foo (513, 2)?		
	A.	9	C. 5
	B.	8	D. 2
100	In the IPv4 addressing format, the number of networks allowed under Class C addresses is		
	A.	214	C. 221
	B.	27	D. 224
101	Register renaming is done in pipelined processors		
	A.	as an alternative to register allocation at compile time	C. to handle certain kinds of hazards
	B.	as an alternative to register allocation at compile time	D. as part of address translation
102	The amount of ROM needed to implement a 4 bit multiplier is		
	A.	64 bits	C. 1 Kbits
	B.	128 bits	D. 2 Kbits
103	Which of the following statements are TRUE about an SQL query?		

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	P : An SQL query can contain a HAVING clause even if it does not have a GROUP BY clause Q : An SQL query can contain a HAVING clause only if it has GROUP BY clause R : All attributes used in the GROUP BY clause must appear in the SELECT clause S : Not all attributes used in the GROUP BY clause need to appear in the SELECT clause	
	A. P and R	C. Q and R
	B. P and S	D. Q and S
104	The protocol data unit (PDU) for the application layer in the Internet stack is	
	A. Segment	C. Message
	B. Datagram	D. Frame
105	A process executes the code fork (); fork (); fork (); The total number of child processes created is	
	A. 3	C. 7
	B. 4	D. 8
106	Which of the following statements is/are TRUE for undirected graphs? P: Number of odd degree vertices is even. Q: Sum of degrees of all vertices is even.	
	A. P only	C. Both P and Q
	B. Q only	D. Neither P nor Q
107	Which of the following is TRUE?	
	A. Every relation is 3NF is also in BCNF	C. Every relation in BCNF is also in 3NF
	B. A relation R is in 3NF if every non-prime attribute of R is fully functionally dependent on every key of R	D. No relation can be in both BCNF and 3NF
108	The transport layer protocols used for real time multimedia, file transfer, DNS and email, respectively are	
	A. TCP, UDP, UDP and TCP	C. UDP, TCP, UDP and TCP
	B. UDP, TCP, TCP and UDP	D. TCP, UDP, TCP and UDP
109	One of the purposes of using intermediate code in compilers is to	
	A. make parsing and semantic analysis simpler.	C. increase the chances of reusing the machine-independent code optimizer in other compliers.
	B. improve error recovery and error reporting	D. improve the register allocation.
110	A prime attribute of a relation scheme R is an attribute that appears	
	A. in all candidate keys of R.	C. in a foreign keys of R.
	B. in some candidate key of R.	D. only in the primary key of R.
111	In the following pairs of OSI protocol layer/sub-layer and its functionality, the INCORRECT pair is	
	A. Network layer and Routing	C. Transport layer and End-to-end process communication
	B. Data Link Layer and Bit synchronization	D. Medium Access Control sub-layer and Channel sharing
112	Which data structure in a compiler is used for managing information about variables and their attributes?	
	A. Abstract syntax tree	C. Semantic stack

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	B. Symbol table	D. Parse table
113	Which one of the following is not a client server application?	
	A. Internet chat	C. E-mail
	B. Web browsing	D. Ping
114	Which of the following concurrency control protocols ensure both conflict serializability and freedom from deadlock? I. 2-phase locking II. Time-stamp ordering	
	A. I only	C. Both I and II
	B. II only	D. Neither I nor II
115	A system uses 3 page frames for storing process pages in main memory. It uses the Least Recently Used (LRU) page replacement policy. Assume that all the page frames are initially empty. What is the total number of page faults that will occur while processing the page reference string given below? 4, 7, 6, 1, 7, 6, 1, 2, 7, 2	
	A. 5	C. 7
	B. 6	D. 9
116	Which of the following shows the Operator overloading feature in C++	
	A. Polymorphism	C. Message passing
	B. Inheritance	D. Both A and B
117	Interrupts which are initiated by an instruction are	
	A. Internal	C. Hardware
	B. External	D. Software
118	The ascending order or a data Hierarchy is	
	A. bit - bytes - fields - record - file – database	C. bytes - bit- field - record - file – database
	B. bit - bytes - record - field - file – database	D. bytes -bit - record - field - file – database
119	Which technique was introduced because a single job could not keep both the CPU and the I/O devices busy?	
	A. Time-sharing	C. Preemptive scheduling
	B. SPOOLing	D. Multiprogramming
120	The approach to software testing is to design test cases to	
	A. break the software	C. analyze the design of sub-processes in the software
	B. understand the software	D. analyze the output of the software Read
121	Which of the following pulse code modulation system is Analog	
	A. PCM	C. Differential PCM
	B. PWM	D. Delta
122	The biggest disadvantages of PCM is	
	A. Its ability to analog Signals	C. The High Error rate which is quantizing noise introduces
	B. Its incompatibility with TDM	D. The Large Bandwidths that are required for It
123	Indicate which of the following systems is digital	
	A. Pulse Position Modulation	C. Pulse Code Modulation
	B. Pulse Width Modulation	D. Pulse Frequency Modulation
124	The Image frequency of a super heterodyne receiver	
	A. Is created within the receiver itself	C. Is due to insufficient adjacent channel rejection
	B. Is not rejected by the IF tuned circuits	D. Is independent of the frequency to which

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		the receiver is tuned
125	An FM signal with a modulation index m_f is passed through a frequency tripler. The wave is of the output of the tripler will have modulation index of	
	A. $m_f/3$	C. m_f
	B. $3m_f$	D. $9\,m_f$
126	The modulation index of an AM wave is changed from 0 to 1. The transmitted power is	
	A. Unchanged	C. Halved
	B. doubled	D. Increased by 50 percentage
127	Amplitude Modulation is used for broadcasting because	
	A. It is more noise immune than other modulation systems	C. Compared with other systems it requires less transmitting power
	B. It use avoid receiver complexity	D. No other modulation system can provide the necessary bandwidth for high fidelity
128	In a communications system, noise is most likely to affect the signal	
	A. At the transmitter	C. In the channel
	B. In the information source	D. At the destination
129	Which one of the following is equivalent to AND-OR realization?	
	A. NAND-NOR Realization	C. NOR-NOR Realization
	B. NOR-NAND Realization	D. NAND-NAND Realization
130	The minimum NOR gates required to implement $A(A+\overline{B})(A+\overline{B}+C)$ is equal to	
	A. 0	C. 3
	B. 4	D. 7
131	A+BC is equivalent to	
	A. (A+B)(A+C)	C. A+B
	B. A+C	D. None
132	To implement y=ABCD using only two input NAND gates, minimum number of requirement of gate is	
	A. 3	C. 4
	B. 5	D. 6
133	If input signal to a full wave rectifier is 50 Hz sinusoidal signal then the lowest ripple frequency in output is	
	A. 25 Hz	C. 50Hz
	B. 100 Hz	D. 125 Hz
134	IC 741 and IC 555 are	
	A. Both OPAMP ICs	C. OPAMP IC and Regulator IC respectively
	B. PLL IC and Timer IC respectively	D. OPAMP IC and Timer IC respectively
135	Ideal value of CMRR of an op-amp is	
	A. 20 dB	C. 200dB
	B. 2000dB	D. Infinite
136	The IC 74LS08 is a	
	A. Quad 2 input AND	C. Single 8 input NAND
	B. Quad 2 input OR	D. Quad 2 input EX-OR
137	The method used for regulation in an SMPS is	
	A. PPM	C. PWM
	B. PCM	D. PAM
138	The transformer is actually a	
	A. voltage generator	C. power source
	B. amplifier	D. none of these
139	Heat sinks are used for	
	A. Heating the ICs	C. Sinking transistors in water
	B. Increasing weight	D. Dissipating heat
140	Simple Diode is	
	A. Active Device	C. Passive Device

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	B. Active and Passive Both	D. .None of these
141	Transistor is	
	A. Active Device	C. Passive Device
	B. Active and Passive Both	D. None of these
142	All Intrinsic semiconductor are insulator at	
	A. 300° K	C. 0° K
	B. Room Temperature	D. Very High Temperature
143	Transistor has lowest output impedance in	
	A. CB	C. CC
	B. CE	D. CC+CE
144	In a bipolar transistor, base is	
	A. Thin and lightly doped	C. Thin and heavily doped
	B. Thick and lightly doped	D. Thick and heavily doped
145	Ebers model of a transistor represents two diodes connected	
	A. In Series	C. In parallel
	B. Back to back	D. None of these
146	JFET has main drawback of	
	A. Having low input impedance	C. Having high input impendence
	B. Being Noisy	D. Having small gain bandwidth product
147	The MOSFET switch in its on state may be considered equivalent to	
	A. Resistor	C. Inductor
	B. Capacitor	D. Battery
148	Avalanche breakdown primarily depends on the phenomenon of	
	A. Ionization	C. Doping
	B. Collision	D. Recombination
149	The most heavily doped region in a transistor is	
	A. Base	C. Collector
	B. Emitter	D. Both Emitter and Collector
150	Which of the following diode show the negative resistance region?	
	A. P-N Junction Diode	C. Zener Diode
	B. Tunnel Diode	D. PIN diode

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