

PGCET-2022

Seat No. _____

SUB: Electrical Engineering

Time: 1 Hour 30 minutes

Instructions:

1. Ensure that all pages are printed.
2. Use Black ball pen only
3. Change in option is not allowed
4. There is no negative marking
5. Use of non-programmable scientific calculator is allowed

1.	In a load duration curve for an integrated power system, the uppermost crest represents the energy contributed by which of the following?			
	A	Base Power station	B	Major thermal stations
	C	Peaking hydro or gas turbine stations	D	Non-conventional power stations
2.	A power station has maximum demand of 15000kW. The annual load factor is 50% and plant capacity factor is 40%. What is the reserve capacity of the plant?			
	A	1875kW	B	3750kW
	C	6000kW	D	7500kW
3.	The surge impedance of a 3-phase, 400 kV transmission line is 400Ω . The surge impedance loading (SIL) is			
	A	400MW	B	100MW
	C	1600MW	D	200MW
4.	Which one of the following statement is correct? Corona loss increases with			
	A	Decrease in conductor size and increase in supply frequency	B	Increase in both conductor size and supply frequency
	C	Decrease in both conductor size and supply frequency	D	Increase in conductor size and decrease in supply frequency
5.	If X is the inductive reactance/phase and R is the resistance/phase of a short transmission line, what is the power factor angle of the load for maximum voltage regulation?			
	A	$\cos^{-1}(X/R)$	B	$\tan^{-1}(X/R)$
	C	$\cos^{-1}(R/X)$	D	$\tan^{-1}(R/X)$
6.	The zero sequence current of a generator for line to ground fault is j2.4 p.u. Then the current through the neutral during the fault is			
	A	j2.4 p.u	B	j0.8 p.u
	C	j7.2 p.u	D	j0.24 p.u

7.	A fault occurring at the terminals of an unloaded synchronous generator operating at its rated voltage has resulted in the following values of currents and voltages; $I_{a0} = j2.37 \text{ p.u}$ $I_{a1} = (-j3.05 \text{ p.u})$ $I_{a2} = j0.68 \text{ p.u}$ $V_{a0} = V_{a1} = V_{a2} = 0.237 \text{ p.u}$ Which one of the following fault has occurred?			
	A	L-L fault	B	L-G fault
	C	L-L-G fault	D	L-L-L fault
8.	The positive, negative and zero sequence per unit impedances of two generators connected in parallel are $X_1 = 0.12 \text{ p.u}$, $X_2 = 0.096 \text{ p.u}$ and $X_0 = 0.036 \text{ p.u}$. For a L-G fault at generator terminals (with 1 pu voltage) the positive sequence current will be			
	A	7.936 p.u	B	11.936 p.u
	C	10.936 p.u	D	8.936 p.u
9.	Consider the following quantities: 1. Real power 2. Reactive power 3. Power factor 4. Input current 5. Bus voltage magnitude 6. Bus voltage phase-magnitude For the purpose of the load flow studies of a power system, each bus or node is associated with which one of the combination of the above four quantities?			
	A	1,3,4 and 5	B	1,2,3 and 4
	C	2,3,5 and 6	D	1,2,5 and 6
10.	The Y_{BUS} matrix of a 100-bus interconnected system is 90% sparse. Hence the number of transmission lines in the system must be			
	A	450	B	500
	C	900	D	1000
11.	For 800 MJ stored energy in the rotor at synchronous speed, what is the inertia constant H for a 50 Hz, four pole turbo-generator rated 100 MVA, 11 kV?			
	A	2.0 MJ/MVA	B	4.0 MJ/MVA
	C	6.0 MJ/MVA	D	8.0 MJ/MVA
12.	Equal -area criterion is employed to determine:			
	A	The steady-state stability	B	The transient stability
	C	The reactive power limit	D	The rating of a circuit breaker

13.	A relay is connected to a 400/5 A current transformer and set for 150%. The primary fault current of 2400A needs a plug setting multiplier of			
	A	2	B	4
	C	6	D	8
14.	Which relay is used to detect and protect internal faults of transformer?			
	A	Buchholz relay	B	Directional relay
	C	Thermal relay	D	Distance relay
15.	The incremental cost characteristics of two generators delivering a load of 200MW are as follows: $\frac{dF_1}{dP_1} = 2.0 + 0.01 P_1$ $\frac{dF_2}{dP_2} = 1.6 + 0.02 P_2$ For economic operation the generators P_1 and P_2 should be			
	A	120 MW and 80 MW	B	81 MW and 120 MW
	C	120 MW and 120 MW	D	80 MW and 80 MW
16.	The power transmission capability of bipolar lines is approximately			
	A	Half that of 3-phase single circuit line	B	Same as that of 3-phase single circuit line
	C	Twice that of 3-phase single circuit line	D	Thrice of that 3-phase single circuit line
17.	The direct axis reactance of X_d of a synchronous generator is given as 0.4 p.u based on the generator's name plate rating of 10kV, 75 MVA, The base of calculation is 11 kV, 100 MVA. What is the pu value of X_d on the new base?			
	A	0.279	B	0.578
	C	0.412	D	0.44
18.	A single phase transformer when supplied form 220V, 50 Hz has eddy current loss of 50W. If the transformer is connected to a voltage of 330V, 50 Hz, the eddy current loss will be			
	A	168.75 W	B	112.5 W
	C	75 W	D	50 W
19.	Two 10kV/440 V, 1-phase transformers of ratings 600 kVA and 350 kVA are connected in parallel to share a load of 800 kVA. The reactance of the transformer, referred to the secondary side are 0.0198Ω and 0.0304Ω respectively (resistance negligible). The load shared by the two transformers will be, respectively			
	A	484.5 kVA and 315.5 kVA	B	315.5 kVA and 484.5 kVA

	C	533 kVA and 267 kVA	D	267 kVA and 533 kVA
20.	What is the load at which maximum efficiency occurs in case of a 100 kVA transformer with iron loss of 1 kW and full-load copper loss of 2 kW?			
	A	100 kVA	B	70.7 kVA
	C	50.5 kVA	D	25.2 kVA
21.	A 4 kVA, 400 V/200 V single phase transformer has resistance of 0.02 pu and reactance of 0.06 pu. The resistance of reactance referred to high voltage side are:			
	A	0.2Ω and 0.6Ω	B	0.8Ω and 2.4Ω
	C	0.08Ω and 0.24Ω	D	1Ω and 3Ω
22.	A d.c series motor is accidentally connected to single-phase a.c supply. The torque produced will be			
	A	Of zero average value	B	Oscillating
	C	Steady and unidirectional	D	Pulsating and unidirectional
23.	Torque developed by the armature of a dc motor is proportional to which one of the following?			
	A	(Backemf) x (Armature current)	B	(Magnetic flux per pole) x (Armature current)
	C	(Back emf) x (Magnetic flux per pole)	D	(Back emf) / (Magnetic flux per pole)
24.	<p>Consider the following statements:</p> <p>The armature reaction mmf in a dc machine is</p> <ol style="list-style-type: none"> 1. Stationary with respect to the field poles 2. Rotating with respect to the field poles 3. Rotating with respect to the armature. <p>Which of these statements are correct?</p>			
	A	1,2 and 3	B	1 and 2 only
	C	1 and 3 only	D	2 and 3 only
25.	<p>Statement (I): The direct on-line (DOL) starter is used to start a small dc motor.</p> <p>Statement (II): DOL starter limits initial current drawn by the armature circuit.</p>			
	A	Both statement (I) and statement (II) are individually true and statement (II) is the correct explanation of statement (I).	B	Both statement (I) and statement (II) are individually true but statement (II) is not the correct explanation of statement (I).

	C	Statement (I) is true but statement (II) is false.	D	Statement (I) is false but statement (II) is true.
26.	A 6-pole, 3-phase alternator running at 1000rpm supplies to an 8-pole, 3-phase induction motor which has a rotor current of frequency 2 Hz. The speed at which the motor operates is			
	A	1000 rpm	B	960 rpm
	C	750 rpm	D	720 rpm
27	<p>The result of a 'Slip Test' for determining direct -axis (X_d) and quadrature-axis (X_q) reactance of a star-connected, salient-pole alternator are given below:</p> <p>Phase values: $V_{\max} = 108V$; $V_{\min} = 96V$, $I_{\max} = 12A$, $I_{\min} = 10A$. Hence the two reactances will be</p>			
	A	$X_d = 10.8$ ohms and $X_q = 8$ ohms	B	$X_d = 9$ ohms and $X_q = 9.6$ ohms
	C	$X_d = 9.6$ ohms and $X_q = 9$ ohms	D	$X_d = 9$ ohms and $X_q = 10.8$ ohms
28	Which one of the following is the primary reason for placing field on rotor in an alternator?			
	A	Small power in field circuit	B	Insulation of high voltage is made easy on stator than on rotor
	C	Large power in stator	D	Large current in the stator
29	<p>Which of the following conditions are to be satisfied for proper synchronization of alternators?</p> <ol style="list-style-type: none"> 1. Equal terminal voltage 2. Same frequency 3. Same phase sequence 4. Same kVA rating 5. Same phase displacement <p>Select the correct answer using the code given below:</p>			
	A	1,3 and 4	B	1,2,4 and 5
	C	2,3,4 and 5	D	1,2,3 and 5
30	When the rotor speed, in a synchronous machine, becomes more than the synchronous speed during hunting, the damper bars develop			
	A	Induction motor torque	B	Induction generator torque.
	C	Synchronous motor torque	D	dc motor torque

31	Consider the following statements: Skewing of rotor slots in a 3-phase induction motor (cage rotor) may 1. introduce additional leakage reactance 2. eliminate slot harmonics Which of these statements is/are correct?		
	A	1 only	B 2 only
	C	Both 1 and 2	D Neither 1 nor 2
32	The supply voltage of an induction motor is reduced by 10%. By what percentage, approximately will the maximum torque decrease?		
	A	5%	B 10%
	C	20%	D 40%
33	A single phase induction motor is running at N rpm. Its synchronous speed is N_s . If its slip with respect to forward field is s, what is the slip with respect to the backward field?		
	A	s	B -s
	C	(1 - s)	D (2 - s)
34	R – C snubber is used in parallel with the thyristor to		
	A	Reduce dv/dt across it	B Reduce di/dt through it
	C	Limit current through the thyristor	D Ensure its conduction after gate signal is removed
35	The total harmonic distortion (THD) of ac supply input current of rectifiers is maximum for		
	A	Single-phase diode rectifier with dc inductive filter	B 3-phase diode rectifier with dc inductive filter
	C	3-phase thyristor rectifier with inductive filter	D Single-phase diode rectifier with capacitive filter

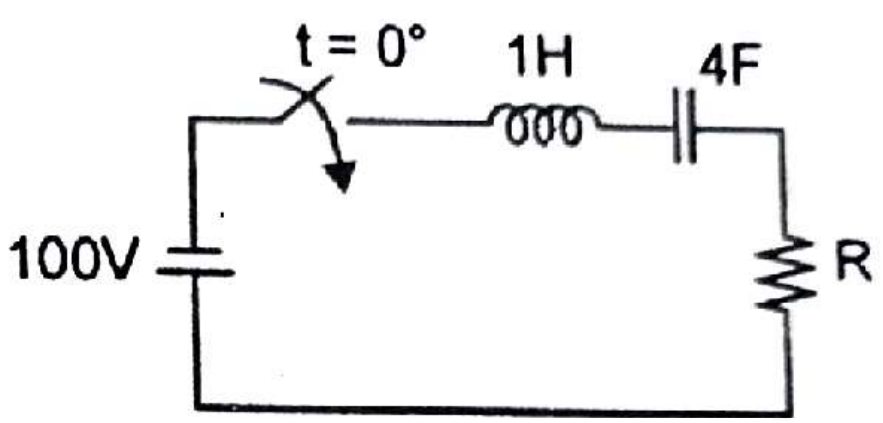
36	A convertor which can operate both in 3-pulse and 6-pulse modes is a			
	A	1-phase full converter	B	3-phase half-wave converter
	C	3-phase semi converter	D	3-phase full converter
37	In a 3- ϕ controller bridge rectifier, the maximum conduction of each thyristor is			
	A	60°	B	90°
	C	120°	D	150°
38	Which one of the following regulator provide output voltage polarity reversal without a transformer?			
	A	Buck regulator	B	Boost regulator
	C	Buck-Boost regulator	D	CUK regulator
39	A buck regulator has an input voltage of 12V and the required output voltage is 5V. What is the duty cycle of the regulator?			
	A	5/12	B	12/5
	C	5/2	D	6
40	In case of voltage source inverter, free-wheeling can be needed for the load of			
	A	Inductive nature	B	Capacitive nature
	C	Resistive nature	D	Back emf nature
41	For elimination of 5 th harmonics from the output of an inverter, what will be the position of pulse in a PWM inverter?			
	A	72°	B	36°
	C	60°	D	90°
42	A current source inverter is obtained by inserting a large			
	A	Inductance in series with dc supply	B	Capacitance in parallel with dc supply
	C	Inductance in parallel with dc supply	D	Capacitance in series with dc supply
43	For a 1-pase full-bridge inverter fed from 48V dc and connected to load resistance of 2.4 Ω , the rms value of fundamental component of output voltage is			
	A	20V	B	21.6V
	C	34.4V	D	43.2V
44	What is the region of operation of 3-phase inverter employing sinusoidal PWM when the peak-to-peak values of both the carrier and the modulating waves are made equal?			

	A	Linear modulation	B	Over modulation
	C	Boundary of linear modulation and over modulation	D	Six step operation
45	In a self-controlled synchronous motor fed from a variable frequency inverter			
	A	The rotor poles invariably have damper winding	B	There are stability problems
	C	The speed of the rotor decides stator frequency	D	The frequency of the stator decides the rotor speed
46	For low-speed high-power reversible operation, the most suitable drives are			
	A	Voltage source inverter fed a.c. drives	B	Current source inverter fed a.c. drives
	C	Dual converted fed d.c drives	D	Cycloconverter fed a.c drives
47	Match List-I (Type of device) with List-II (Characteristic/Application) and select the correct answer using the given below list:			
	List-I A. MOSFET B. GTO C. UJT D. TRIAC		List-II 1. Turn off by negative gate pulse 2. Bi-directional switching 3. High speed switching 4. Triggering circuit	
	A	A-3, B-1, C-4, D-2	B	A-3, B-1, C-2, D-4
	C	A-1, B-2, C-3, D-4	D	A-1, B-2, C-4, D-3
48	Which one of the following statement is not correct for a MOSFET?			
	A	Are easy to parallel for higher current	B	Leakage current is relatively high
	C	Have more linear characteristics	D	Overload and peak current handling capability are high
49	Match List-I with List-II and select the correct answer using the given below list:			
	List-I A. Mass B. Damper C. Spring D. Force		List-II 1. Capacitor 2. Voltage 3. Resistor 4. Inductor	
	A	A-2, B-1, C-3, D-4	B	A-4, B-1, C-3, D-2
	C	A-2, B-3, C-1, D-4	D	A-4, B-3, C-1, D-2
50	What is the open loop transfer function for the system, whose characteristics equation is $F(s) = s^3 + 3s^2 + (K+2)s + 5K = 0$?			

	A	$G(s)H(s) = 5K / s(s+1)(s+3)$	B	$G(s)H(s) = Ks / s(s+1)(s+2)$
	C	$G(s)H(s) = K(s+5) / s(s+1)(s+2)$	D	$G(s)H(s) = 5K / s(s+1)(s+2)$
51	<p>Consider the following statements in connection with the differential equation given below:</p> $4 \frac{d^2y}{dt^2} + 36y = 36x$ <ol style="list-style-type: none"> 1. The natural frequency of the response is 6 rad/s 2. The response is always oscillatory. 3. The percentage overshoot is 10% and damping ratio of the system is 0.6. 4. Both system time constant and settling time are infinite. <p>Which of the statements given above are correct?</p>			
	A	1 and 3	B	2 and 4
	C	1,2 and 3	D	2,3 and 4
52	<p>Consider the following equation:</p> $2s^4 + s^3 + 3s^2 + 5s + 10 = 0$ <p>How many roots does this equation have in the right half of s-plane?</p>			
	A	One	B	Two
	C	Three	D	Four
53	<p>Match List-I (type of plots) with list-II (functions) and select the correct answer using the codes given below:</p> <p>List-I</p> <ol style="list-style-type: none"> A. Bode plots B. Polar plots C. Nyquist plots D. Nichols plots <p>List-II</p> <ol style="list-style-type: none"> 1. Open loop response due to damped sinusoidal inputs as a function of complex frequency. 2. Open loop response due to undamped sinusoidal as a function of real frequency. 3. Closed loop response due to sinusoidal inputs as a function of real frequency. 4. Open loop magnitude and phase angle responses for undamped sinusoidal inputs plotted separately as a function of real frequency 			
	A	A-2, B-4, C-3, D-1	B	A-2, B-4, C-1, D-3
	C	A-4, B-2, C-3, D-1	D	A-4, B-2, C-1, D-3
54	<p>By adding a pole at the origin of s-plane, the Nyquist plot of a system will rotate by</p>			
	A	90° in anti-clockwise direction	B	90° in clockwise direction
	C	180° in anti-clockwise direction	D	180° in clockwise direction
55	<p>An op-amp has a differential gain of 10^3 and a CMRR of 100. The output voltage of the op-amp with inputs of 120 μV and 80 μV will be</p>			

	A	26 mV	B	41 mV
	C	100 mV	D	200 mV
56	What is the main source of distortion in a push-pull amplifier?			
	A	Fundamental component	B	Second harmonic
	C	Third harmonic	D	All even harmonics
57	The shunt type regulator is suitable for which of the following?			
	A	Low current, high voltage	B	Low current, low voltage
	C	High current, low voltage	D	High current, high voltage
58	In a p-n junction, to make the depletion region extend predominantly into p-region, the concentration of impurities in the p-region must be			
	A	Much less than the concentration of impurities in n-region	B	Much higher than the concentration of impurities in n-region
	C	Equal to the concentration of impurities in n-region	D	Zero
59	Which one of the following oscillators is used for generation of high frequencies?			
	A	R.C phase shift	B	Wien bridge
	C	L.C Oscillator	D	Blocking oscillator
60	A differential amplifier essentially consists of			
	A	Two input and two output terminals	B	Only resistors and transistors
	C	Two transistors	D	Two CE amplifiers having their emitters directly coupled to each other
61	A bulb is controlled by two switches A and B. The bulb glows only when either switch A or switch B is ON, its Boolean expression is			
	A	$\overline{A}\overline{B} + AB$	B	$\overline{A}\overline{B} + AB$
	C	$\overline{A}B + \overline{A}\overline{B}$	D	$A\overline{B} + A\overline{B}$
62	The function $F = AB\overline{C} + ABC + \overline{A}BC + \overline{A}\overline{B}\overline{C}$; can be reduced to which one of the following?			
	A	$F = A$	B	$F = AB$
	C	$F = ABC$	D	$F = B$

63	Match List-I with List-II and select the correct answer using the code given below list:			
	List-I (Octal)		List-II (Binary)	
	A. 75		1. 010110	
	B. 65		2. 110101	
	C. 37		3. 111101	
	D. 26		4. 011111	
	A	A-3, B-1, C-4, D-2	B	A-2, B-1, C-3, D-4
	C	A-3, B-2, C-4, D-1	D	A-4, B-2, C-3, D-1
64	The unit impulse noise of a system is given by $c(t) = 0.5e^{-t/2}$. Its transfer function is			
	A	$1/(s+2)$	B	$1/(1+2s)$
	C	$2/(1+2s)$	D	$2/(s+2)$
65	For a two-port symmetrical bilateral network, if $A=3$ and $B=1\Omega$, the value of parameter C will be			
	A	4 s	B	6 s
	C	8 s	D	16 s
66	The impulse response of an R-L circuit is a			
	A	Rising exponential function	B	Decaying exponential function
	C	Step function	D	Parabolic function
67	The quality factor of R-L-C circuit will increase			
	A	R decreases	B	R increases
	C	Voltage increases	D	Q always increases
68	Resonant frequency f_r of an R-L-C circuit is related to half power frequencies f_1 and f_2 as			
	A	$f_r = \frac{f_1 + f_2}{2}$	B	$f_r = \sqrt{f_1 f_2}$
	C	$f_r = f_2 - f_1$	D	$f_r = \sqrt{f_1} + \sqrt{f_2}$
69	For a dc voltage, an inductor			
	A	Is virtually a short-circuit	B	Is an open circuit
	C	Depends on polarity	D	Depends on voltage value

70	<p>In the given circuit, the value of R that will give critical damping is</p> 			
	A	1Ω	B	2Ω
	C	4Ω	D	10Ω
71	<p>In two-wattmeter method of power measurement, one of the wattmeters will show negative reading when the load <i>p</i>/angle is strictly</p>			
	A	Less than 30°	B	Less than 60°
	C	Greater than 30°	D	Greater than 60°
72	<p>Two coils having equal resistances but different inductances are connected in series. The time constant of the series combination is the</p>			
	A	Sum of the time constant of the individual coils	B	Average of the time constants of individual coils
	C	Geometric mean of the time constant of the individual coils	D	Product of the time constants of the individual coils
73	<p>The form factor for dc supply voltage is always</p>			
	A	Zero	B	Unity
	C	Infinity	D	Any value between 0 and 1
74	<p>Tick the correct statement</p>			
	A	Delta connection draws same current as star connection	B	Delta connection draws 3 times as much current as star connection
	C	Delta connection draws $\frac{1}{\sqrt{3}}$ times as much current as star connection	D	Delta connection draws $\frac{1}{3}$ times as much current as star connection
75	<p>A lamp rated at 10 watts, 50 volts is proposed to be used in 110 volts, system. The wattage and resistance of the resistor to be connected in series with the lamp should be</p>			

	A	15 watts, 350 ohms	B	10 watts, 250 ohms
	C	12 watts, 300 ohms	D	15 watts, 250 ohms
76	The dimension of power is			
	A	ML^2T^{-2}	B	ML^2T^{-3}
	C	M^2LT^{-3}	D	M^2LT^{-2}
77	Which one of the following types of instrument is an integrating instrument?			
	A	Power factor meter	B	Energy meter
	C	Wattmeter	D	Frequency meter
78	The deflecting torque of a moving iron instrument is proportional to			
	A	I	B	I^2
	C	$I^{1/2}$	D	$I^{3/2}$
79	The principle of operation of an LVDT is based on variation of			
	A	Self-inductance	B	Mutual inductance
	C	Reluctance	D	Permeance
80	In three-phase power measurement the power factor of load will be			
	A	$\cos \tan^{-1} \sqrt{3} \frac{W1 - W2}{W1 + W2}$	B	$\frac{(W1 + W2)}{W1 - W2}$
	C	$\sqrt{3} \frac{W1 - W2}{W1 + W2}$	D	$\tan^{-1} \frac{W1 - W2}{\sqrt{W1 + W2}}$
81.	Solution of differential equation $\frac{dy}{dx} - \frac{5}{x}y = x^5$ is given by			
	A	$y = x(x + c)$	B	$y = x^2(x + c)$
	C	$y = x^3(x + c)$	D	$y = x^5(x + c)$
82.	solution of differential equation $\frac{d^2y}{dx^2} - 10\frac{dy}{dx} + 21y = e^{5x}$ is given by			
	A	$y = c_1e^{7x} + c_2e^{3x} - \frac{1}{4}e^{5x}$	B	$y = c_1e^{-7x} + c_2e^{-3x} - \frac{1}{4}e^{5x}$
	C	$y = c_1e^{7x} + c_2e^{3x} - e^{5x}$	D	$y = c_1e^{-7x} + c_2e^{-3x} - e^{5x}$
83.	Laplace Transformation of $t \sin 3t$ is equal to			

	A	$\frac{16s}{(s^2 - 9)^2}$	B	$\frac{6s}{(s^2 + 9)^2}$
	C	$\frac{6s}{(s^2 + 9)}$	D	$\frac{1}{(s^2 + 9)^2}$
84.	Inverse Laplace Transformation of $\frac{1}{s^2(s^2-1)}$ is equal to			
	A	$tsint$	B	$sint + t$
	C	$sint - t$	D	$5sint - 1$
85.	$\lim_{x \rightarrow 0} \left(\frac{1}{x} - cotx \right)$ is equal to			
	A	2	B	0
	C	$\frac{1}{2}$	D	1
86.	If $U = \log \left(\frac{x^4 + y^4}{x^2 + y^2} \right)$ then $x \frac{\partial U}{\partial x} + y \frac{\partial U}{\partial y}$ is equal to			
	A	U	B	$3U$
	C	$2U$	D	2
87.	Vector Field $\vec{F} = 4yi + 4xj + 3k$ is			
	A	Solenoidal vector Field	B	Irrotational vector field
	C	Solenoidal and Irrotational vector Field	D	None of these
88.	What is the work done when force $\vec{F} = 2xye^z i + (x^2e^z)j + x^2ye^z k$ moves particle from origin to (1,1,1)? (\vec{F} is a conservative vector field)			
	A	$4e$	B	e
	C	$5e$	D	$2e$
89.	Which of the following is correct for the system $2x + 2y - 3z = 1, \quad 4x + 4y + z = 2, \quad 6x + 6y - z = 3$			
	A	System is inconsistency	B	Unique solution
	C	Infinitely many solutions	D	None of these
90.	If $A = \begin{bmatrix} 1 & 0 & 0 \\ 2 & 3 & 1 \\ 0 & 1 & 2 \end{bmatrix}$ then an Eigen values of A^2 is.			
	A	2, 4, 6	B	1, 4, 9
	C	1, 2, 3	D	$\frac{1}{2}, \frac{1}{3}, 1$

91.	What is the rank of the matrix A ?, $A = \begin{bmatrix} 2 & 4 & 6 \\ 4 & 6 & 8 \\ 6 & 8 & 10 \end{bmatrix}$			
	A	0	B	1
	C	3	D	2
92.	If $f(z) = \frac{z^2+1}{z^2-10z+24}$ which are the points where $f(z)$ fails to be analytic ?			
	A	6, 4		-6, -4
	C	1, 2		2, 3
93.	Value of $\int_c \frac{z^2}{z-2} dz$, is. where c is $ z = 3$			
	A	$5\pi i$	B	$8\pi i$
	C	πi	D	$20\pi i$
94.	Residue of $f(z) = \frac{z}{(z-1)(z-2)}$ at pole 2 is.			
	A	1	B	$\frac{1}{2}$
	C	2	D	0
95.	The Mean, Median and mode of 3, 5, 3, 2, 7 is.			
	A	Mean=3, Median=4, Mode= 5	B	Mean=4, Median=3, Mode= 3
	C	Mean=4, Median=3, Mode= 5	D	Mean=5, Median=2, Mode= 3
96.	In a bulb manufacturing company. It is found that there is a small chance 0.02 for any bulb to be defective. What is the Mean and Standard deviation of the binomial distribution of defective bulb in a total of 500 ?.			
	A	10, 5.5	B	10, 5
	C	10, 2.5	D	10, 3.13
97.	There are 5 yellow, 2 red and 3 white balls are in the box. Three balls are randomly selected from the box. What is the probability that the balls are 2 yellow and 1 red colour ?			
	A	0.71	B	0.17
	C	0.7	D	0.2

98.	Value of $\int_{-1}^1 e^x dx$ with $h = 0.5$ by Trapezoidal rule is .			
	A	0.289	B	0.239
	C	0.0293	D	2.399
99.	Using Newton- Raphson method what is the value of $\sqrt{27}$, correct upto two decimal places.			
	A	5.96	B	5.69
	C	5.196	D	5.396
100.	The area of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ is given by			
	A	ab	B	$2ab$
	C	πab	D	$2\pi ab$