Group Code	COURSE
CS	**COMPUTER SCIENCE**

MAXIMUM MARKS	TOTAL DURATION	MAXIMUM TIME FOR ANSWERING
180	200 Minutes	180 Minutes

MENTION YOUR DIPLOMA CET NUMBER	BOOKLET VERSION CODE	SERIAL NUMBER
	A1	

213933

CS – A1

DOs:

1. This question booklet is issued to you by the invigilator after the **2ⁿᵈ bell i.e., after 9.50 am.**
2. Check whether the DCET Number has been entered and shaded in the respective circles on the OMR answer sheet.
3. The version code and serial number of this question booklet should be entered on the OMR answer sheet and the respective circles should also be shaded completely.
4. The Version Code and Serial Number of this question booklet should be entered on the Nominal Roll without any mistakes.
5. Compulsorily sign at the bottom portion of the OMR answer sheet in the space provided.

DON'Ts:

1. **THE TIMING AND MARKS PRINTED ON THE OMR ANSWER SHEET SHOULD NOT BE DAMAGED / MUTILATED / SPOILED.**
2. **The 3ʳᵈ bell rings at 10.00 am, till then;**
   - Do not remove the seal present on the right hand side of this question booklet.
   - Do not look inside this question booklet or start answering on the OMR answer sheet.

IMPORTANT INSTRUCTIONS TO CANDIDATES

1. In case of usage of signs and symbols in the questions, the regular textbook connotation should be considered unless stated otherwise.
2. This question booklet contains 180 (items) questions and each question will have one statement and four different options / responses & out of which you have to choose one correct answer.
3. After the 3rd Bell is rung at 10.00 am, remove the paper seal on the right hand side of this question booklet and check that this booklet does not have any unprinted or torn or missing pages or items etc., if so, get it replaced by a complete test booklet. Read each item and start answering on the OMR answer sheet.
4. Completely **darken / shade** the relevant circle with a **blue or black ink ballpoint pen** against the question number on the OMR answer sheet.

ಸರಿಯಾದ ಕ್ರಮ CORRECT METHOD	ತಪ್ಪು ಕ್ರಮಗಳು WRONG METHOD		
Ⓐ ● Ⓒ Ⓓ	⊗ Ⓑ Ⓒ Ⓓ	Ⓐ Ⓑ Ⓒ ⊘	Ⓐ ● ● Ⓓ
	◉ Ⓑ Ⓒ Ⓓ	Ⓐ ◉ Ⓒ Ⓓ	

5. Please note that even a minute unintended ink dot on the OMR answer sheet will also be recognized and recorded by the scanner. Therefore, avoid multiple markings of any kind on the OMR answer sheet.
6. Use the space provided on each page of the question booklet for Rough Work. Do not use the OMR answer sheet for the same.
7. **Last bell will ring at 1.00 pm,** stop marking on the OMR answer sheet.
8. Hand over the **OMR answer sheet** to the room invigilator as it is.
9. After separating the top sheet (Office copy), the invigilator will return the bottom sheet replica (candidate's copy) to you to carry home for self-evaluation.

PART - A

APPLIED SCIENCE

1. Which of the following is the supplementary unit of SI System?

    (A) Candela
    (B) Kelvin
    (C) Radian
    (D) Mole

2. The main scale of Slide Calipers is divided into millimeter, the length of Vernier is 19 mm and is divided into 20 equal parts. The least count is

    (A) 0.01 cm
    (B) 0.001 cm
    (C) 0.05 cm
    (D) 0.005 cm

3. Which one of the following is not a vector quantity?

    (A) Velocity
    (B) Acceleration
    (C) Speed
    (D) Force

4. The magnitude of resultant of two forces $\vec{P}$ and $\vec{Q}$ acting in the same line and in opposite direction is

    (A) $P + Q$
    (B) $P - Q$
    (C) $\dfrac{P}{Q}$
    (D) $\dfrac{Q}{P}$

5. Two forces 3N and 5N are acting at a point making an angle of 60°. The magnitude of the resultant is

    (A) 15 N
    (B) 2 N
    (C) 7 N
    (D) 8 N

6. Torque produces

    (A) rotational motion
    (B) linear motion
    (C) both rotational and linear motion
    (D) neither rotational nor linear motion

Space For Rough Work

7. Which one of the following is not related to couple?

(A) Kicking of football

(B) Opening and closing of tap

(C) Rotation of steering wheel

(D) Pedalling of bicycle

8. Within elastic limit, stress is

(A) independent of strain

(B) zero

(C) directly proportional to strain

(D) inversely proportional to strain

9. The length of a wire increases by 1% on suspending a load of 2 N from it. The tensile strain in the wire is

(A) 0.01

(B) 0.5

(C) 2

(D) 1

10. Pressure at any point inside a liquid

(A) remains zero

(B) increases with depth

(C) decreases with depth

(D) independent of depth

11. The pressure at the bottom of a swimming pool 20m wide and the water 2m deep (given density of water 1000 Kg/m^3 and g = 10 m/s^2) is

(A) 2×10^3 Pa

(B) 40×10^3 Pa

(C) 10×10^3 Pa

(D) 20×10^3 Pa

12. In the case of liquids, as the temperature increases, the surface tension generally

(A) remains constant

(B) decreases

(C) increases

(D) zero

Space For Rough Work

13. The property of a liquid to oppose the relative motion between different layers is called

(A) density
(B) elasticity
(C) viscosity
(D) capillarity

14. An expression for coefficient of viscosity is (if F = viscous force; A = Area, V = difference in Velocity, x = distance between two layers)

(A) $\eta = -\dfrac{FA}{xV}$
(B) $\eta = -\dfrac{FV}{Ax}$
(C) $\eta = -\dfrac{Fx}{AV}$
(D) $\eta = -\dfrac{FxA}{V}$

15. The expression that represents Charle's law is

(A) PV = constant
(B) VT = constant
(C) $\dfrac{P}{V}$ = constant
(D) $\dfrac{V}{T}$ = constant

16. The pressure of a gas at 27°C is one atmospheric pressure. Keeping the volume constant, if the temperature is raised to 60°C, then its pressure will be

(A) 1.11 atmospheric pressure
(B) 1.5 atmospheric pressure
(C) 2.2 atmospheric pressure
(D) 2 atmospheric pressure

17. Hot water at 80°C will exchange heat with surroundings maintained at 25°C till the temperature of water becomes

(A) 80°C
(B) 50°C
(C) 55°C
(D) 25°C

18. Radiator in automobiles works on the principle of

(A) Conduction
(B) Convection
(C) Radiation
(D) Evaporation

Space For Rough Work

19. In the expression $C_p - C_v = R$, notation R represents

(A) Resultant force

(B) Planck's constant

(C) Universal gas constant

(D) Resonance

20. Physical quantity that represents the energy of the mechanical wave is

(A) Wave length

(B) Frequency

(C) Amplitude

(D) Wave period

21. Which one of the following is not an example of simple harmonic motion?

(A) Swinging of cradle

(B) Oscillations of simple pendulum

(C) Vibrations of tuning fork

(D) Motion of hands of clock

22. In the equation for velocity of sound in air, which of the following options does not hold good according to Laplace?

(A) Poor conductivity of air

(B) Rapid pressure changes

(C) Maintaining constant temperature

(D) Rise and fall of temperature

23. Distance between two consecutive nodes in a stationary wave is equal to

(A) Wavelength of individual wave

(B) Difference of wavelengths of two waves

(C) Sum of wavelengths of two waves

(D) Half of wavelength of individual wave

24. When the tension on the sonometer wire is increased by 15 N, its frequency is doubled. The original tension is

(A) Zero

(B) 5 N

(C) 10 N

(D) 15 N

Space For Rough Work

25. Two identical waves superpose on one another, then the beat frequency is

   (A) Zero (B) One

   (C) Ten (D) Infinity

26. Damage to the suspension bridge by marching military troops is due to

   (A) Reverberation (B) Resonance

   (C) Beats (D) Noise

27. A tuning fork produces waves in a medium. The parameter that changes with temperature of the medium is

   (A) Wavelength (B) Frequency

   (C) Amplitude (D) Period

28. The electromagnetic radiation used to detect the artificial gems from the original gems is

   (A) Microwave (B) Radio wave

   (C) Ultraviolet ray (UV ray) (D) X-ray

29. During excitation of an atom from ground state to excited state, the number of photons absorbed by the single atom is

   (A) 2 (B) 1

   (C) 3 (D) 0

30. In Nano-technology, the manipulation of atom is done in the range of

   (A) 1 nano meter – 100 nano meter (B) 1 micro meter – 100 micro meter

   (C) 1 pico meter – 100 pico meter (D) 1 millimeter – 100 millimeter

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Space For Rough Work

31. Live telecast of a programme can be viewed by

   (A) Manual communication

   (B) X-ray communication

   (C) Landline communication

   (D) Satellite communication

32. Optical Fibre is used in

   (A) Endoscopy

   (B) Biometric Machine

   (C) Simple Microscope

   (D) Simple Telescope

33. Acetic acid is an example for

   (A) Strong Electrolyte

   (B) Neutral Solution

   (C) Weak Electrolyte

   (D) Non-Electrolyte

34. The process of coating tin over iron and steel is known as

   (A) Alloying

   (B) Galvanizing

   (C) Tinning

   (D) Refining

35. The batteries which are recharged and reused are called

   (A) Primary Battery

   (B) Secondary Battery

   (C) Fuel Cell

   (D) Alkaline Battery

Space For Rough Work

36. PAFC is a type of

(A) Primary Cell

(B) Secondary Cell

(C) Solar Cell

(D) Fuel Cell

37. The easily fusible material which is formed when Flux reacts with gangue is

(A) Slag

(B) Alloy

(C) Polymer

(D) Mineral

38. Which of the below given polymers is obtained by condensation polymerization?

(A) Poly ethene

(B) Nylon

(C) PVC

(D) Poly propane

39. Which of the following is not a composite material?

(A) Fibreglass

(B) Concrete

(C) Ceramic

(D) Bronze

40. The pH value of Lemon juice is about

(A) 2.4

(B) 8.2

(C) 10.2

(D) 14

Space For Rough Work

ENGINEERING MATHEMATICS

41. The value of $\begin{vmatrix} \cos 50° & \sin 10° \\ \sin 50° & \cos 10° \end{vmatrix}$ is

(A) $\dfrac{1}{\sqrt{2}}$

(B) $\dfrac{\sqrt{3}}{2}$

(C) $\dfrac{-1}{2}$

(D) $\dfrac{1}{2}$

42. The values of x & y from the simultaneous equations $3x + 4y = 7$ and $7x - y = 6$ are.

(A) $x = 1, y = 1$

(B) $x = -1, y = -1$

(C) $x = 1, y = -1$

(D) $x = -1, y = 1$

43. If $\begin{vmatrix} x & 3 \\ 3 & x \end{vmatrix} = 0$ then the value of x is

(A) ± 1

(B) ± 3

(C) ± 9

(D) $\pm \sqrt{6}$

44. If $A = \begin{bmatrix} -1 & 3 \\ 4 & -5 \end{bmatrix}$, then $2A^T$ is

(A) $\begin{bmatrix} -2 & 6 \\ 8 & -10 \end{bmatrix}$

(B) $\begin{bmatrix} -1 & 4 \\ 3 & -5 \end{bmatrix}$

(C) $\begin{bmatrix} -2 & 8 \\ 6 & 8 \end{bmatrix}$

(D) $\begin{bmatrix} -2 & 8 \\ 6 & -10 \end{bmatrix}$

Space For Rough Work

45. If A is a given square Matrix then

(A) $\text{adj A} = \dfrac{A^{-1}}{|A|}$

(B) $\text{adj A} = \dfrac{|A|}{|A^{-1}|}$

(C) $\text{adj A} = |A| . A^{-1}$

(D) $AA^{-1} = \text{adj A} . |A|$

46. The characteristic Equation of the Matrix $A = \begin{bmatrix} -5 & 6 \\ -2 & 1 \end{bmatrix}$ is

(A) $\lambda^2 - 6\lambda + 12 = 0$

(B) $\lambda^2 - 4\lambda + 17 = 0$

(C) $\lambda^2 + 4\lambda + 7 = 0$

(D) $\lambda^2 - 4\lambda + 7 = 0$

47. The unit vector in the direction of $\vec{a} = 3i + 4j - 2k$ is

(A) $\hat{a} = \dfrac{3i + 4j - 2k}{\sqrt{26}}$

(B) $\hat{a} = \dfrac{3i + 4j - 2k}{\sqrt{29}}$

(C) $\hat{a} = i + j - 2k$

(D) $\hat{a} = \dfrac{3i + 4j - 2K}{\sqrt{21}}$

48. If $\vec{a} = i + \lambda j$ and $\vec{b} = 2j + 3k$ and $\vec{a} . \vec{b} = 0$ then 'λ' is Equal to

(A) $\dfrac{-2}{3}$

(B) $\dfrac{2}{3}$

(C) $\dfrac{3}{2}$

(D) 0

49. Area of the triangle whose adjacent sides are $\vec{a} = 2i - j + 2k$ and $\vec{b} = 3i - j$ is

(A) $\sqrt{41}$ sq.units

(B) $\dfrac{\sqrt{41}}{2}$ sq.units

(C) $\dfrac{3}{2}$ sq. units

(D) $\dfrac{\sqrt{65}}{2}$ sq.units

Space For Rough Work

50. The number of possible outcomes in the sample space when two dice of different colours are rolled is

(A) 36
(B) 6
(C) 9
(D) 12

51. Sin θ is positive and tan θ is negative when θ is in

(A) I quadrant
(B) II quadrant
(C) III quadrant
(D) IV quadrant

52. The value of

$$\frac{\tan (\pi - \alpha)}{\tan (-\alpha)} + \frac{\cos (\pi/2 - \alpha)}{\sin (2\pi - \alpha)} + \frac{\operatorname{cosec} \left(\dfrac{3\pi}{2} + \alpha\right)}{\sec (\pi + \alpha)} \quad \text{is}$$

(A) -1
(B) 2
(C) -2
(D) 1

53. The value of sin (105°) is

(A) $\dfrac{\sqrt{3} + 1}{2\sqrt{2}}$
(B) $\dfrac{\sqrt{3} - 1}{2\sqrt{2}}$

(C) $\dfrac{1 - \sqrt{3}}{2\sqrt{2}}$
(D) $\dfrac{\sqrt{3}}{2\sqrt{2}}$

54. The value of $\dfrac{1 - \cos A + \sin A}{1 + \cos A + \sin A}$ is

(A) $\tan A$
(B) $\tan \left(A/2\right)$

(C) $\cot \left(A/2\right)$
(D) $\cot A$

55. If sin A = $\dfrac{1}{3}$, then the value of sin 3A is

(A) $\dfrac{-3}{27}$
(B) 1

(C) $\dfrac{-4}{27}$
(D) $\dfrac{23}{27}$

Space For Rough Work

56. The value of 2 cos 3A. sin 2A is

(A) sin 5A + sin A

(B) cos 5A + cos A

(C) sin 5A − sin A

(D) cos 5A − cos A

57. The polar form of 1 + i is

(A) $\sqrt{2}\left[\cos\dfrac{\pi}{4} + i\,\sin\dfrac{\pi}{4}\right]$

(B) $\sqrt{2}\left[\cos\dfrac{\pi}{4} - i\,\sin\dfrac{\pi}{4}\right]$

(C) $\sqrt{2}\left[\sin\dfrac{\pi}{4} + i\,\cos\dfrac{\pi}{4}\right]$

(D) $\sqrt{2}\left[-\cos\dfrac{\pi}{4} - i\,\sin\dfrac{\pi}{4}\right]$

58. $\displaystyle\lim_{x \to -3} \dfrac{x^2 - 5x + 6}{x^2 - 3x} =$

(A) $\dfrac{-5}{3}$

(B) $\dfrac{1}{3}$

(C) $\dfrac{-1}{3}$

(D) $\dfrac{5}{3}$

59. $\displaystyle\lim_{x \to a} \dfrac{\sqrt{x^3} - \sqrt{a^3}}{x - a} =$

(A) $\dfrac{3}{2}\sqrt{a}$

(B) $\dfrac{3}{2\sqrt{a}}$

(C) $\sqrt{a}$

(D) $\dfrac{1}{\sqrt{a}}$

60. $\displaystyle\lim_{\theta \to 0} \dfrac{\cos 3\theta - \cos \theta}{\theta \sin 2\theta} =$

(A) $\tan 2\theta$

(B) 2

(C) −2

(D) 1

Space For Rough Work

61. Equation of the straight line passing through the point (1, 3) and having slope -2 is

(A) $2x - y + 5 = 0$

(B) $x + 2y + 5 = 0$

(C) $x - 2y - 5 = 0$

(D) $2x + y - 5 = 0$

62. Equation of the straight line passing through the origin and perpendicular to the line $5x - 4y - 1 = 0$ is

(A) $5x - 4y = 0$

(B) $4x + 5y = 0$

(C) $5x - 4y + 1 = 0$

(D) $4x + 5y + 1 = 0$

63. If $y = \dfrac{x^2 - 5}{x^2 + 3}$, then $\dfrac{dy}{dx} =$

(A) $\dfrac{4x^3 - 4x}{(x^2 + 3)^2}$

(B) $\dfrac{16x}{(x^2 + 3)^2}$

(C) $\dfrac{4x}{(x^2 + 3)^2}$

(D) $\dfrac{-16x}{(x^2 + 3)^2}$

64. If $y = \sin^{-1}(\cos x)$, then $\dfrac{dy}{dx} =$

(A) $\dfrac{1}{\sqrt{1 - x^2}}$

(B) $\dfrac{-\sin x}{\sqrt{1 - x^2}}$

(C) 1

(D) -1

65. If $y = \sqrt{y \log x}$, then $\dfrac{dy}{dx} =$

(A) $\dfrac{1}{x(2y - 1)}$

(B) $\dfrac{1}{x}$

(C) $\dfrac{1}{x(1 - 2y)}$

(D) $\dfrac{1}{xy}$

Space For Rough Work

66. If $x = a \cos^2\theta$ and $y = b \sin^3\theta$, then $\dfrac{dy}{dx} =$

(A) $-\dfrac{3b}{2a} \sin\theta$

(B) $-\dfrac{3b}{2a}$

(C) $\dfrac{2a}{b} \cos\theta$

(D) $\dfrac{-2a}{3b\sin\theta}$

67. If $y = x^y$, then $\dfrac{dy}{dx} =$

(A) $\dfrac{y^2}{x(1-\log x)}$

(B) $\dfrac{y^2}{x(1+\log y)}$

(C) $\dfrac{y^2}{x(1 - y \log x)}$

(D) $\dfrac{y^2}{x(1+\log x)}$

68. If $y = \sin^2 x$, then $\dfrac{d^2y}{dx^2} =$

(A) $2 \cos 2x$

(B) $2 \sin 2x$

(C) $2 \sin x \cos x$

(D) $2x \sin x$

69. The Equation of tangent to the curve $y = \sin x$ at the point $(\pi, 0)$ is

(A) $x + y + 1 = 0$

(B) $x - y - 1 = 0$

(C) $x + y - \pi = 0$.

(D) $x - y + \pi = 0$.

70. The rate of change of radius of the sphere is 9cm/s. Then the rate of change of volume of the sphere when the radius is 2 cm is equal to

(A) 144π cm^3/s

(B) 9π cm^3/s

(C) 56π cm^3/s

(D) 64π cm^3/s

Space For Rough Work

71. $\int \dfrac{1}{1 + \cos x}\, dx =$

(A) $\tan x + \sec x + c$

(B) $\tan x - \sec x + c$

(C) $-\cot x + \operatorname{cosec} x + c$

(D) $\cot x - \operatorname{cosec} x + c$

72. $\int \left(\sqrt{x} + \cot x \right) dx =$

(A) $\dfrac{2}{3} x^{3/2} + \log \sin x + c$

(B) $\dfrac{3}{2} x^{2/3} + \log \sec x + c$

(C) $\dfrac{2}{3} x^{3/2} - \log \sin x + c$

(D) $\dfrac{3}{2} x^{2/3} - \log \sec x + c$

73. $\int \dfrac{e^{\log x}}{x}\, dx =$

(A) $e^x + c$

(B) $\log (e^x) + c$

(C) $x \log e^x + c$

(D) $e^{\log x} + c$

74. $\int \log x \cdot dx =$

(A) $x \log x + x + c$

(B) $x \log x - x + c$

(C) $x + \log x + c$

(D) $x - \log x + c$

75. $\int \dfrac{x}{\sqrt{1 + x^2}}\, dx =$

(A) $\sqrt{1 + x^2} + c$

(B) $\sqrt{1 - x^2} + c$

(C) $\dfrac{1}{\sqrt{1 + x^2}} + c$

(D) $\dfrac{1}{\sqrt{1 - x^2}} + c$

Space For Rough Work

76. $\int\limits_{-2}^{1} (x + 1)(x - 1)\, dx =$

(A) 0

(B) 1

(C) − 1

(D) − 2

77. The area bounded by the curve $y = \sin^2 x$, the x–axis and the ordinates $x = 0$ and $x = \pi/2$ is

(A) $\dfrac{\pi}{4}$ sq. units

(B) $\dfrac{\pi}{2}$ sq. units

(C) $\dfrac{\pi}{3}$ sq. units

(D) $\dfrac{\pi}{6}$ sq. units

78. The order and degree of a differential equation $4\left(\dfrac{dy}{dx}\right)^3 + 8\,xy + \left(\dfrac{d^2 y}{dx^2}\right)^2 - 7 = 0$ respectively are

(A) 1 and 3

(B) 2 and 2

(C) 2 and 3

(D) 2 and 1

79. The differential equation formed from the equation $y^2 = 4ax$ by eliminating arbitrary constant is

(A) $2x\dfrac{dy}{dx} - y = 0$

(B) $2x\dfrac{dy}{dx} + y = 0$

(C) $y.\dfrac{dy}{dx} - 2x = 0$

(D) $y\dfrac{dy}{dx} + 2x = 0$

80. For the differential equation $\dfrac{dy}{dx} + (\tan x).\, y = \cos x$, the integrating factor is

(A) log x

(B) cot x

(C) cosec x

(D) sec x

Space For Rough Work

PART – C
COMPUTER SCIENCE

81. Octal number 567 in decimal form is

(A) 375

(B) 2900

(C) 101110111

(D) 456

82. Universal gates are

(A) NAND and NOT

(B) NAND and NOR

(C) NAND and AND

(D) NAND and OR

83. _____ has only one data input line, several selection lines and several output lines

(A) Demultiplexer

(B) Multiplexer

(C) Encoder

(D) Decoder

84. Demultiplex takes

(A) One input & routes it to one of the several output lines

(B) Several inputs & routes it onto one output line

(C) One input & output after converting to different code

(D) One input and decodes before outputing

85. Basic computer architecture was developed by

(A) Charles Babbage

(B) Blaise Pascal

(C) Gordon Moore

(D) John von Neumann

86. All special purpose computers must have

(A) A set of instructions built into machine

(B) Faster processor

(C) More memory

(D) None of the above

Space For Rough Work

87. Assembly Language is a

(A) High-level language

(B) Medium-level language

(C) Low-level language

(D) None of the above

88. Which is not pointing device?

(A) Track ball

(B) Joy stick

(C) Mouse

(D) Digitizer

89. Data in ROM is

(A) Stored permanently

(B) Non-volatile

(C) Non-modifiable

(D) All of the above

90. Which of the following has the largest memory storage capacity?

(A) CD

(B) DVD RW

(C) DVD ROM

(D) Blu-Ray

91. When CPU scheduler allocates CPU to each process in the ready queue for a specific time interval, then it is _____ scheduling

(A) Round-robin

(B) Priority

(C) First come first serve

(D) shortest job first

92. Under _____ scheduling, once the CPU has been allocated to a process, the process keeps the CPU until it terminates or switches to waiting state

(A) Pre-emptive

(B) Non-pre-emptive

(C) Both A & B

(D) None of the above

93. Interprocess communication is

(A) Communication within the process

(B) Communication between two processes

(C) Communication between two threads of same process

(D) None of the above

Space For Rough Work

94. Concurrent access of shared data is

(A) data consistency

(B) data insecurity

(C) data inconsistency

(D) data bounding

95. Which of the following is not a deadlock handing method?

(A) prevention

(B) avoidance

(C) detection & recovery

(D) manual allocation

96. The process of swapping in and out of memory is done by

(A) CPU manager

(B) Hard-disk manager

(C) Memory manager

(D) user

97. Process divided into number of segments and loaded into memory at runtime, not mandatorily contiguous, is called

(A) Virtual memory segmentation

(B) Logical segmentation

(C) Simple segmentation

(D) Base segmentation

98. Fixed size blocks of logical memory are called

(A) frames

(B) pages

(C) segments

(D) tables

99. An unsafe state implies

(A) Existence of deadlock

(B) Some sequence of events might lead to deadlock

(C) All processes must be aborted

(D) None of the above

100. A page fault occurs

(A) when page is in memory

(B) when page is not in memory

(C) when process is in blocked state

(D) when process is in waiting state

Space For Rough Work

101. The quantity which does not change during execution is called

    (A) constant

    (B) variable

    (C) dynamic

    (D) enumerated

102. Which of the following is not a valid data type?

    (A) float

    (B) char

    (C) real

    (D) int

103. Find the output of the following code

```
main( )
{
    int x = 100;
    { int x = 0;
      printf( "%d", x);
    }
}
```

    (A) 100

    (B) 0

    (C) undefined

    (D) compilation error

104. The keyword 'break' cannot be directly used within

    (A) while

    (B) for

    (C) switch

    (D) if-else

105. What is the output of this code?

```
void main( )
{
    double  k = 0;
    for (K = 0.0; K < 3.0; K++)
    printf("Hello");
}
```

    (A) runtime error

    (B) Hello is printed infinite times

    (C) Hello is printed 3 times

    (D) Hello is printed 2 times

Space For Rough Work

106. What is the output of the following code?

```
void main( )
{
    int   a = 2;
    switch (a)
{
    case 1 : printf ("First case\n")
    default :
            printf("Default\n");
    case 2 : printf("Second case\n");
    case 3 : printf("Third case\n");
}
    printf("Exit switch\n");
}
```

(A)   Second case

(B)   Second case
      Third case
      Default
      Exit switch

(C)   Second case
      Third case
      Exit switch

(D)   First case
      Second case

107. A variable known to main() function and all other functions is

(A)   reference variable

(B)   Global variable

(C)   local variable

(D)   pointer variable

108. Which function definition will run correctly?

(A)   int sum (int a, int b)
      return(a + b);

(B)   int sum (int a, int b)
          { return (a + b);}

(C)   int sum (a, b)
      {return (a +b);}

(D)   void sum (int a, int b)
      return (a + b);

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109. The process of copying actual parameter value to formal parameter is

(A) call by value

(B) call by reference

(C) call by address

(D) none of the above

110. Array elements are stored in _____ memory location

(A) sequential

(B) random

(C) A or B

(D) none of the above

111. What is the index number of the last element of an array with 30 elements?

(A) 30

(B) 29

(C) 0

(D) machine dependent

112. The library function used to reverse a string is

(A) strstr( )

(B) strrev( )

(C) revstr( )

(D) strreveese( )

113. # include is called

(A) inclusion directive

(B) file include directive

(C) preprocessor directive

(D) predefined directive

114. Which of the following is itself a collection of different datatypes?

(A) string

(B) structure

(C) array

(D) pointer

115. Number of bytes in memory taken by the below structure depends on _____

struct sample
{
    int x;
    char a;
};

(A) integer size

(B) integer size + character size

(C) character size

(D) multiple word size

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116. Interpret the declaration.

int x = 4;

const int *ptr = &x;

(A)   The value of x cannot be changed

(B)   The pointer ptr cannot point to other variable

(C)   both ptr value and the value of x cannot be changed

(D)   none of the above

117. If a variable is a pointer to a structure, then which operator is used to access data members of structure through pointer variables?

(A)   .

(B)   &

(C)   →

(D)   *

118. What is the output of the following code?

```
Int main( )
{
    int i = 10;
    void *p = & i;
    printf ("%d\n", *(int *)p);
    return 0;
}
```

(A)   garbage value

(B)   10

(C)   compilation error

(D)   none of the above

119. Which type of files cannot be opened using fopen()?

(A)   .txt

(B)   .bin

(C)   .c

(D)   none of the above

120. Which of the following is true about FILE *fp?

(A)   FILE is a keyword in c for representing files and fp is a variable of FILE type

(B)   FILE is a stream

(C)   FILE is a buffered stream

(D)   FILE is a structure and fp is a pointer to the structure of FILE type

---

Space For Rough Work

121. Identify non-primitive data type in the following:

(A) Boolean

(B) Character

(C) Integer

(D) Array

122. _____ is not an application of stack

(A) Recursion

(B) Stack machine

(C) Simulation

(D) Expression evaluation

123. Process of inserting an element in a stack is called

(A) Create

(B) PUSH

(C) Evaluation

(D) POP

124. The postfix form of the expression (A + B) * (C * D – E) * F/G is

(A) AB + CD * E – FG/**.

(B) AB + CD * E – F **G/.

(C) AB + CD * E – *F * G/.

(D) AB + CDE * – *F * G/.

125. Data structure in which elements are inserted at the rear end and deleted from the front end is a _____

(A) Queue

(B) Circular queue

(C) Dequeue

(D) Priority queue

126. A node of a singly linked list consists of _____ fields

(A) 1

(B) 2

(C) 3

(D) 4

127. Which of the following is an application of Queue?

(A) CPU scheduling

(B) Print spooling

(C) Breadth First Search

(D) All of the above

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128. Which of these is an application of linked list?

(A) To implement file systems
(B) For separate chaining in hash tables
(C) To implement trees
(D) All of the above

129. If the elements "S", "R", "Q" and "P" are placed in the queue by inserting "S" first and are deleted one at a time, in what order will they be removed?

(A) PQRS
(B) QRPS
(C) SRQP
(D) RQSP

130. The incorrect statement of a doubly linked list is

(A) Allows traversal in both directions
(B) While adding or removing a node it requires changing more links than singly linked list
(C) Each node has two pointers
(D) None of the above

131. The information stored in the DBMS catalogue is called _____

(A) Data
(B) Meta-Data
(C) Data-model
(D) Schema

132. The capacity to change the schema at one level without having to change the schema at next higher level is called _____

(A) Data Dependence
(B) Data Independence
(C) Logical Independence
(D) Physical Independence

133. The total number of attributes in a relation is called its _____

(A) Degree
(B) Cardinality
(C) Rows
(D) Columns

134. The two ways in which entities can participate in a relationship is

(A) Active and passive
(B) Total and partial
(C) Simple and Complex
(D) All of the above

Space For Rough Work

135. In the _____ normal form, a composite attribute is converted to simple attributes

(A) First

(B) Second

(C) Third

(D) Fourth

136. The SQL command used to modify existing data in a database table is

(A) MODIFY

(B) UPDATE

(C) CHANGE

(D) NEW

137. A number of employees working for a department is an instance of

(A) 1 : 1

(B) 1 : n

(C) n : 1

(D) m : n

138. SELECT name
FROM STAFF
WHERE Salary IS NOT NULL;
Selects

(A) Tuples with NULL value

(B) Tuples with no NULL values

(C) Tuples with any salary

(D) All of the above

139. A transaction is delimited by statements of the form

(A) Begin transaction and end transaction

(B) Start transaction and stop transaction

(C) Get transaction & post transaction

(D) Read transaction and write transaction

140. The same DBMS software is used from multiple sites in _____ distributed database systems

(A) Distributed

(B) Centralized

(C) Heterogeneous

(D) Homogeneous

141. API stands for

(A) Application Programming Interface

(B) Application Process Interface

(C) Application Procedure Interface

(D) Application Processor Interface

Space For Rough Work

142. The keyword used to prevent class inheritance is

(A) abstract

(B) super

(C) final

(D) finally

143. Deriving a class from derived class is

(A) Single Inheritance

(B) Simple Inheritance

(C) Multiple Inheritance

(D) Multilevel Inheritance

144. If same variable name is used in superclass and subclass then keyword used for accessing superclass variable is

(A) super

(B) upper

(C) first

(D) this

145. Packages in Java are defined using keyword

(A) import

(B) pack

(C) packed

(D) package

146. An interface by default contains _____ type of methods

(A) static

(B) final

(C) abstract

(D) private

147. _____ method of thread class is overridden to start the thread

(A) init( )

(B) start( )

(C) yield( )

(D) run( )

148. Exceptions are

(A) syntax error

(B) compilation error

(C) runtime error

(D) logical error

Space For Rough Work

149. A character can be extracted from a string using _____ method

(A) getchar( )   (B) getcharAt( )

(C) charAt( )   (D) getAt( )

150. A variable declared inside a class is

(A) instance variable   (B) local variable

(C) global variable   (D) default variable

151. Protected members can be accessed

(A) within the class only

(B) within the package only

(C) within the package and outside the package through inheritance

(D) within the package and other package

152. _____ method must be static

(A) main( )   (B) delete( )

(C) run( )   (D) finalize( )

153. A thread which is alive and eligible to run is in _____ state

(A) Runnable   (B) Running

(C) Blocked   (D) Sleeping

154. Keyword not used in exception handling is

(A) try   (B) catch

(C) finally   (D) thrown

155. Writing multiple same name functions in same class is

(A) function overriding   (B) function overloading

(C) Inheritance   (D) Interfacing

156. The complexity of merge sort algorithm is

(A) O(n)   (B) O(log n)

(C) $O(n^2)$ (D) O(n log n)

Space For Rough Work

157. The time complexity of linear search is

(A) O(1)

(B) O(log n)

(C) O(n)

(D) O(n log n)

158. Knapsack problem is an example of

(A) Greedy algorithm

(B) Dynamic programming

(C) Divide and conquer

(D) Decrease and conquer

159. The relationship between number of back edges and number of cycles in DFS is

(A) Both are equal

(B) Back edges are half of cycles

(C) Back edges are on quarter of cycles

(D) There is no relationship between number of edges and cycles

160. DFS is equivalent to which of the traversal in binary trees?

(A) Pre-order Traversal

(B) Post-order Traversal

(C) In-order Traversal

(D) Level-order Traversal

161. _____ topology is one in which all nodes are individually connected to a central hub

(A) Ring

(B) Bus

(C) Star

(D) Mesh

162. Bits to electromagnetic signals change takes place at _____ layer

(A) Transport

(B) Network

(C) DataLink

(D) Physical

163. _____ can be implemented through software also

(A) Firewall

(B) Gateway

(C) Modem

(D) Router

164. _____ is a reliable communication protocol

(A) UDP

(B) TCP

(C) IP

(D) None of the above

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165. TCP/IP address classes are used for

    (A) Host addresses   (B) Multicast groups

    (C) Experimental purposes   (D) All of the above

166. If sender data is exactly equal to receiver data, it is called _____

    (A) Message Authentication   (B) Message Integrity

    (C) Message encryption   (D) Message confidentiality

167. _____ is not the purpose of digital signature

    (A) Authentication   (B) Non repudiation

    (C) Confidentiality   (D) None of the above

168. If GPT = 43 then CSE = _____

    (A) 34   (B) 32

    (C) 30   (D) None of the above

169. RSA is a _____ algorithm

    (A) Private key   (B) Public key

    (C) Protected key   (D) Hidden key

170. _____ is not a Security threat

    (A) Spam   (B) Worm

    (C) Cracker   (D) Adware

171. In PHP, identify valid variable name/s among the following:

    (i) $8gpt   (ii) $_gpt

    (iii) $This   (iv) $govt

    (A) only (ii)   (B) (i) and (iii)

    (C) (ii) and (iv)   (D) (ii), (iii) and (iv)

172. _____ function is used to find files in PHP

    (A) file( )   (B) glop( )

    (C) file-find( )   (D) glob-find( )

Space For Rough Work

173. In PHP, the function is-array( ) returns _____
- (A) Character value
- (B) String value
- (C) Integer value
- (D) None of the above

174. _____ returns ASCII value of a character in PHP
- (A) ord( )
- (B) asc( )
- (C) chr( )
- (D) ascii( )

175. In PHP, replacing string from left hand side is called as _____
- (A) Dicing
- (B) Poping
- (C) Deciphering
- (D) None of the above

176. In XML parameter entities appear in _____ file
- (A) dtd
- (B) XSL
- (C) XML
- (D) None of the above

177. _____ attribute is used to define a new name space in XML
- (A) Xmlns
- (B) XmlNamespace
- (C) XmlNS
- (D) None of the above

178. Cols attribute in HTML is used with _____
- (A) < ol >
- (B) < td >
- (C) < textarea >
- (D) < th >

179. _____ tag is used to underline text in a web page
- (A) < UL >
- (B) < U >
- (C) < PRE >
- (D) < ULine >

180. To choose the type of font in HTML _____ attribute is used
- (A) character
- (B) string
- (C) type
- (D) none of the above

_____

Space For Rough Work

A1