1. Configuration of an UART in serial communication has
   a. clock signal　　　b. baud rate, stop bit, data length　　　c. both　　　d. none

2. Deadlock happens when two processes waiting for the resources used by each other; in this condition
   a. both processes know that they are waiting for each other
   b. one process knows that other is waiting
   c. both a and b
   d. none

3. Physical memory location in running program is resolved by
   a. linker　　　b. compiler　　　c. loader　　　d. none

4. Task switching is switching between
   a. processes　　　b. threads　　　c. concurrent part in same program　　　d. all

5. In 2-pass compiler
   a. identifier can be used without its declaration
   b. identifier should be declared before its first use
   c. both
   d. none

6. The difference between functional/ordinary SDLC and object-oriented SDLC is
   a. in functional SDLC, the development time is more than design time
   b. in object oriented SDLC, design time is more than development time.
   c. both
   d. none

7. Which of the following is not a bus-interface for a microprocessor?
   a. ISA　　　b. AGP　　　c. PCI　　　d. ICE

8. Which of the following statements is true for structure?
   a. a structure can contain a pointer to itself.
   b. structure can be compared
   c. both
   d. none

9. Which is not defined as codd's rule of RDBMS?
   a. comprehensive data sub-language rule　　　b. view updates
   c. physical data dependency　　　d. integrity dependency

10. Encryption means
    a. text to cipher　　　b. cipher to text　　　c. both　　　d. none

11. In micro-processor, over clocking will result in
    a. overheating　　　b. malfunctioning　　　c. both　　　d. none

12. Cache is
    a. ROM　　　b. RAM　　　c. PROM　　　d. EPROM

13. Unix os implements two types of pipes, one is formatted and the other is
    a. low level pipes　　　b. high level pipes　　　c. middle level pipes　　　d. none

14. Which of the following remains in memory temporarily?
    a. Resident portion of COMMAND.COM　　　b. Transient portion of COMMAND.COM
    c. API　　　d. Disk BIOS

15. If the time quantum is too large, Round Robin scheduling degenerates to
    a. Shortest Job First Scheduling　　　b. Multi-level Queue Scheduling
    c. FCFS　　　d. None of the above

16. Transponders are used for which of the following purposes?
    a. Uplinking　　　b. Downlinking　　　c. Both (a) and (b)　　　d. None of the above

17. The format specifier "-%d" is used for which purpose in C?
    a. Left justifying a string　　　b. Right justifying a string
    c. Removing a string from the console　　　d. Used for the scope specification of a char[] variable

18. Virtual functions allow you to
    a. Create an array of type pointer-to-base-class that can hold pointers to derived　classes
    b. Create functions that have no body
    c. Group objects of different classes so they can all be accessed by the same function code
    d. Use the same function call to execute member functions to objects from different classes

19. A sorting algorithm which can prove to be a best time algorithm in one case
    and a worst time algorithm in worst case is
    a.　Quick Sort　　　b.　Heap Sort　　　c. Merge Sort　　　d.　Insert Sort

20. Banker's algorithm for resource allocation deals with
    a. Deadlock prevention　　　b. Deadlock avoidance　　　c. Deadlock recovery　　　d. None of these

21. Which of the following communications lines is best suited to interactive processing applications?
    a. Narrowband channels　　　b. Simplex channels　　　c. Full-duplex channels　　　d. Mixedband channels

22. What is the main function of a data link content monitor?
    a. To detect problems in protocols
    b. To determine the type of transmission used in a data link
    c. To determine the type of switching used in a data link
    d. To determine the flow of data

23. Which of the following memories has the shortest access time?
    a. Cache memory　　　b. Magnetic bubble memory　　　c. Magnetic core memory　　　d. RAM

24. In which of the following page replacement policies, Balady's anomaly occurs?
    a. FIFO　　　b. LRU　　　c. LFU　　　d. NRU

25. After execution of CMP, a instruction in Intel 8085 microprocessor
    a. ZF is set and CY is reset.　　　b. ZF is set CY is unchanged
    c. ZF is reset, CY is set　　　d. ZF is reset, CY is unchanged

26. In a certain society, there are two marriage groups, red and brown. No marriage is permitted within a group. On marriage, males become part of their wives groups; women remain in their own group. Children belong to the same group as their parents. Widowers and divorced males revert to the group of their birth. Marriage to more than one person at the same time and marriage to a direct descendant are forbidden
    A male born into the brown group may have
    a. An uncle in either group　　　b. A brown daughter
    c. A brown son　　　d. A son-in-law born into red group

27. A parallel plate air-filled capacitor has plate area of 10^{-4} m^2 and plate separation of 10^{-3} m. It is connected to a 0.5 V, 3.6 GHz source. The magnitude of the displacement current is ($e_0 = 1/36p \times 10^{-9}$ F/m)
    a. 10 mA　　　b. 100 mA　　　c. 10 A　　　d. 1.59 mA

28. The phase velocity of an electromagnetic wave propagating in a hollow metallic rectangular waveguide in the TE$_{10}$ mode is
    a. equal to its group velocity　　　b. less than the velocity of light in free space
    c. equal to the velocity of light in free space　　　d. greater than the velocity of light in free space

29. Noise with uniform power spectral density of N_0W/Hz is passed through a filter $H(w) = 2 \exp(-jwt_4)$ followed by an ideal low pass filter of bandwidth BHz. The output noise power in Watts is
    a. $2N_0B$　　　b. $4N_0B$　　　c. eN_0B　　　d. $16 N_0B$

30. The cascade amplifier is a multi-stage configuration of
    a. CC-CB　　　b. CE-CB　　　c. CB-CC　　　d. CE-CC

Section-I
GROUP – "B"

1. For a cantilever beam with uniformly varying load, shape of bending moment curve is
   a. parabolic   b. hyperbolic   c. straight line   d. cubic.

2. For 1st order lever, mechanical advantage is
   a. <1   b. >1   c. =1   d. none

3. The negative resistance characteristic is exhibited by
   a. Diode   b. Triode   c. Tetrode   d. Pentode

4. Thermal efficiency of IC engines will be
   a. 20-25%   b. 30-35%   c. 60-75%   d. 45-55%.

5. When a mass is supported by a spring of constant k, which is cut in 4 equal pieces and connected in parallel way, the equivalent spring constant is

   a) k/4   b) 16k   c) 64k   d) o.4k.

6. Mass production of bolts and rivets is by
   a. hot extrusion   b. forging   c. cold heading   d. cold peening

7. Mercury doesn't stick to glass tube because
   a. cohesive force>adhesive force   b .cohesive force<adhesive force
   c. cohesive force= adhesive force   d. none of the above

8. Euler's formula is used for column of length
   a. >80   b. <80   c. >90   d. >110

9. If a body weighing 40 kg floats in water with 40% of volume immersed, the sp. gravity of the body is
   a. 1   b. 0.16   c. 0.25   d. none

10. If center distance of an involutes mating gear changes then the pressure angle
    a. increases   b. decreases   c. remains unaltered   d. neither of them

11. Normalising is
    a. heated above critical temp and cooled in air
    b. heated above critical temp and quenched in oil
    c. heated below critical temp and cooled in air
    d. none of these.

12. The best suited material for permanent magnet is
    a. Alnico   b. silicon   c. copper   d. mild steel

13. Hooke's joint is used for
    a. parallel and intersecting shafts   b. non-parallel non-intersecting
    c. non-parallel and intersecting   d. parallel and non-intersecting

14. Which of the following is a loose running fit?
    a. h6f6   b. h6e6   c. h6d6   d. none of these

15. Specific speed in a turbo machine depends on
    a. geometric shape   b. size   c. head   d. all of these

16. Unit of surface roughness is
    a. micron   b. PPM   c. mm2   d. meter

17. Mohr's circle is used to find
    a. principle stress   b. resultant of ANS   c principal strain   d. none

18. Which one in the following has less carbon content?
    a. tool steel   b. spring steel   c. carbunising steel   d. forging steel

19. Spheroidising is a process of
    a. annealing   b. normalising   c. tempering   d. case hardening

20. What type of thread is used in lead screw of a lathe
    a. acme thread   b. V   c. square   d. buttress

21. Wear allowance of a go nogo end plug gauge is given for
    a. go end   b. nogo end   c. both   d. none

22. Herring bone gears are used when it is required that a/an
    a. axial thrust is transmitted   b. radial thrust is transmitted
    c. torque is transmitted.   d. None of the above

23. In ball bearings, cage is used to
    a. maintain the ball position   b) maintain parallelism between inner and outer race
    c. both   d. none

24. Distance of ozone layer from surface of earth
    a. 0 to 100 km   b. 20 to 50 km   c. 50 to 100 km   d. 10 to 15 km

25. An elevator is moving up with an acceleration of 4.9 m/sec2 with a body weighing 15 kg is attached with spring balance. What is the value in the spring balance?
    a. 10   b. 15   c. 20   d. 30

26. At same heat input and max pressure
    a. efficiency of Otto cycle is more than diesel   b. efficiency of dual cycle is more than diesel
    c. efficiency of diesel cycle is more than Otto   d. all the above

27. Bending stress is (if y is the distance from the neutral axis)
    a. inversely proportional to y   b. proportional to y
    c. independent of y   d. none of the above

28. Which of the following is a wrong statement?
    a. Plaster of Paris is made from dolomite, bauxite and limestone.
    b. Highest temperature is represented by red colour.
    c. In ball bearing, grease lubrication acts as boundary layer lubrication.
    d. Diesel is always the most efficient fuel for automobiles.

29. Fahrenheit and centigrade are equal at
    a. -40   b. 0   c. 32   d. 100

30. Melting point of ice changes with
    a. increase with pressure   b. increase with pressure ratio   c. Both   d. none

Section-I
GROUP – "C"

1. For 1 cu m of first class Brick Work (metric brick), the no. of bricks required will be
   (a) 400   (b) 450   (c) 500   (d) 550

2. Where ordinary Portland cement is used, removal of properties under slabs spanning up to 4.5m may be done (according to BIS 456-1978) after expiry of
   (a) 5 days (b) 7 days   (c) 10 days   (d) 15 days

3. In the calculation of carpet area, the area of corridor and passage of a building will be
   (a) included   (b) excluded   (c) 40% included (d) 80% included

4. For earthwork the unit of lead for a distance of 500m is
   (a) 30m   (b) 50m (c) 60m (d) 100m

5. For 2 coats white washing on a coat of primer to new plaster, the quality of unslaked lime in kg required per sqm area will be
   (a) 20   (b) 25   (c) 30   (d) 35

6. Surveyor companies used to measure the
   (a) QB   (b) WCB   (c) FB   (d) BB

7. Width of Gauge for a railway track (B.G.) in metre is
   (a) 1.625   (b) 1.676   (c) 1.675   (d) 1.673

8. Mach number is the ratio of

   (a) inertia and gravity force (b) inertia & elastic force
   (c) viscous & inertia force   (d) none of the these

9. The bearing of is line AB of an equilateral triangle ABC (anti clockwise) is 60°, the bearing of line CA is
   (a) 90°   (b) 180 °   (c) 60°   (d) 240°

10. Toughness of Aggregate is determined by
    (a) impact value test   (b) crushing value test
    (c) abrasion test   (d) shape test

11. The city Chandigarh was planned by Architect
    (a) Frank Lloyd Wright   (b) Le-Carbousier
    (c) Bruce Allospp   (d) J.N.L. Durand

12. If the floor to floor height of a building is 3.6mts, numbers of tread will be (height of one riser is 15cm)
    (a) 24   (b) 23   (c) 25   (d) 22

13. If the plot area is 3000 m^2 and F.S.I. is 1.5, then built-up area will be
    (a) 250m^2 (b) 3000 m^2 (c) 2000 m^2 (d) 4500 m^2

14. Which is not the principle of planning?
    (a) roominess   (b) aspect   (c) unity   (d) circulation

15. Airports are classified under
    (a) residential zone   (b) industrial zone
    (c) agricultural zone   (d) none of these

16. Order of color (Descending) in road traffic signal is
    (a) Red, Green, Yellow   (b) Green, Yellow, Red
    (c) Yellow, Green, Red   (d) Red, Yellow, Green

17. School Ahead sign is
    (a) Warning sign   (b) Informatory sign
    (c) Regulatory sign   (d) Control sign

18. Pyramids were designed in :
    (a) Mughal Architecture   (b) Egyptian Architecture
    (c) Roman Architecture   (d) Greek Architecture

19. Aggregate impact value < 10% categorized under
    (a) strong   (b) week for road surfacing
    (c) exceptionally strong   (d) satisfactorily for road surfacing

20. The degree of precision required in survey work mainly depends on the
    (a) purpose of survey   (b) area to be surveyed
    (c) source of error   (d) nature of field

21. The first railway line between Mumbai and Thane was opened in the year
    (a) 1844   (b) 1853   (c) 1854   (d) 1855

22. Trim command in Auto-CAD is the command of
    (a) Draw   (b) Format   (c) Modify   (d) Help

23. Which of the following is unit of Kinematic Viscosity in SI System
    (a) m^2/sec (b) N-sec/m^2 (c) Stokes   (d) Poise

24. A Clinometer is used for measuring the
    (a) slope   (b) distance   (c) level   (d) none of these

25. Least count of a Prismatic Compass is

    (a) 30 min (b) 15 min   (c) 45 min   (d) 1 min

26. The minimum grade of concrete recommended by IS 450-2000
    (a) M15 (b) M20 (c) M25 (d) M30

27. The first sky scraper building in Mumbai was
    (a) World Trade Centre, Coloba   (b) Kalpataru Heights, Agripada
    (c) Usha Kiran, Tardeo   (d) Fortune Tower, J.J.Road

28. The Water collected at Bhandup Treatment Plant comes from
    (a) Vaitarna Dam (b) Tansa Dam (c) Bhatsa Dam   (d) Badlapur Dam

29. Sand stone is
    (a) sedimentary rock (b) metamorphic rock (c) igneous rock (d) volcanic rock

30. The maximum Bearing Capacity of soil is that of
    (a) black cotton soil   (b) loose fire sandy soil   (c) hard rock   (d) soft clay soil

GROUP - D

Q.1. Non-circatrical alopecia is seen in

A. Alopecia aerate

B. Autoimmune in etiology

C. Pseudopalade

D. DLE

Ans: A

Q.2. Direct immunofluorescence is positivie in

A. Atopic dermatitis

B. SLE

C. Pemphigus

D. Secondary syphilis

Ans: C

Q.3. Shortest acting non depolarizing muscle relaxant

A. Mevacurium

B. Vercuronium