

The sample placement question paper for the recruitment issued by National Mineral Development Corporation is as given below.

### **NMDC Placement Paper**

1. The propagation of light through an optical fiber goes by the principle

- (1) Refraction
- (2) Total internal reflection
- (3) Interference
- (4) Diffraction

2. A block of weight 200 N is pulled along a rough horizontal surface at a constant speed by a force of 100 N acting at an angle of  $30^\circ$ . The coefficient of friction between the block and the surface

- (1) 0.58
- (2) 0.75
- (3) 0.45
- (4) 0.65

3. A boy wants to climb down a rope. The rope can withstand a maximum tension equal to two thirds the weight of the boy. If  $g$  is the acceleration due to gravity, the minimum acceleration with which the boy should climb down the rope is

- (1)  $g/3$
- (2)  $2g/3$
- (3)  $3g/2$
- (4)  $g$

4. The standard data rate of PCM in digital speech transmission is

- (1) 8Kbps
- (2) 16Kbps
- (3) 32Kbps
- (4) 64Kbps

5. Two sounds of wavelengths 5 m and 6 m, travelling in a medium produce 10 beats per second. The speed of sound in the medium is

- (1) 300 m/s
- (2) 320 m/s
- (3) 350 m/s
- (4) 1200 m/s

6. Teflon is

- (1) Phenol formaldehyde
- (2) An inorganic polymer
- (3) Poly tetrafluoroethylene
- (4) A monomer

7. The lightest particle is

- (1) Positron
- (2) Neutron
- (3) Proton
- (4)  $\alpha$ -particle

8. The Fastest ADC is

- (1) Successive Approximation type
- (2) Counter type

- (3) Flash type
- (4) Dual Slope type

9. The size of internal RAM in 8051 microcontroller is

- (1) 1 Mbytes
- (2) 1 Kbytes
- (3) 512 bytes
- (4) 128 bytes

10. The size of instruction queue in 8086 microprocessor is ----- bytes.

- (1) 3
- (2) 4
- (3) 5
- (4) 6

11. The 80386 is a ----- bit microprocessor.

- (1) 8
- (2) 16
- (3) 32
- (4) 64

12. The combination of primary colours Blue and Red yields

- (1) Yellow
- (2) Cyan
- (3) Magenta
- (4) White

13. The domain name given for nonprofit professional organizations is

- (1) .com
- (2) .edu
- (3) .org
- (4) .gov

14. The threshold voltage for a silicon diode is

- (1) 0.1
- (2) 0.3
- (3) 0.7
- (4) 1.1

15. The diode that exhibits negative resistance characteristics is

- (1) Zener diode
- (2) Tunnel diode
- (3) Varactor diode
- (4) PN junction diode

16. The number of diodes in center tapped and bridge rectifiers respectively are

- (1) 2, 2
- (2) 4, 2
- (3) 4, 4
- (4) 2, 4

17. At Pinch-Off, the drain current is

- (1) Zero
- (2) Maximum

- (3) Constant
- (4) Infinity

18. Astable multivibrator has stable states.

- (1) 0
- (2) 1
- (3) 2
- (4) 4

19. Which of the following is energy storing device?

- (1) Inductor
- (2) Capacitor
- (3) Both Inductor and Capacitor
- (4) Resistor

20. For a parallel resonant circuit, selectivity is defined as reciprocal of

- (1) Q-factor
- (2) Bandwidth
- (3) Resonant frequency
- (4) Power