



HAL MT previous year sample questions for ECE

General Awareness

In general awareness they will ask most of the questions from recent issues, concentrate on politics, history life science more.....

1. Who among the following was an illiterate?
 - a. **Akbar**
 - b. Shahjahan
 - c. Jahangir
 - d. Aurangzeb
2. During the Mughal rule, the copper coin was known as
 - a. Rupee
 - b. **Dam**
 - c. Tanka
 - d. Shamsi
3. What was the first cotton mill in india established?
 - a. **Mumbai**
 - b. Ahmedabad
 - c. Surat
 - d. Coimbatore
4. In which of the following years was the first Railway line between Bombay and Thane Laid?
 - a. **1853**
 - b. 1854
 - c. 1856
 - d. 1858
5. Who is the exponent of the theory of economic drain of india during british rule?

- a. M.N. Roy
 - b. Dadabhai Naoroji**
 - c. Jai prakash narayan
 - d. Ram Manohar Lohiya
6. When was the all india Womens conference founded
- a. 1926
 - b. 1927**
 - c. 1924
 - d. 1925
7. "India war of Independence 1857" is written by?
- a. S.N.Sen
 - b. R.C.Majumdar
 - c. V.D.Savarkar**
 - d. S.B.Chaudhari
8. "India wins Freedom" is the autobiography of
- a. Abul Kalam azad**
 - b. Muhammad Ali
 - c. Gandhi
 - d. Zakir Hussain
9. Which of the slogan is attributed to Subash Chandra bose
- a. Jai hind**
 - b. Vande mataram
 - c. Inqilab Zindabad
 - d. Jai Jawan Jai Kisan
10. Quit india movement began on
- a. 9th august 1942**
 - b. 10th august 1942
 - c. 15th august 1942
 - d. 16th august 1942
11. Who is known as Nightingale of India
- a. Vijaya laxmi pandit
 - b. Lata mangeshkar
 - c. Sarojini naidu**
 - d. Noor Jahan
12. Who among the following started the news paper "Bande Matram"
- a. Banrindra Kumar Ghosh
 - b. Bipin Chandra pal**
 - c. Devendra Nath Tagore

- d. Surendra Nath Bannerjee
13. The "Taka" is the currency of
- a. Srilanka
 - b. Bhutan
 - c. **Bangladesh**
 - d. Cambodia
14. Which of the following is not a team sport
- a. **Wrestling**
 - b. Kho-kho
 - c. Kabadi
 - d. Hockey
15. A multimedia PC may not have
- a. LCD display
 - b. Speaker
 - c. DVD drive
 - d. **Digital Camera**
16. Water harvesting deals with
- a. Recycling of sewage
 - b. Drip irrigation
 - c. **Collection of rain water**
 - d. Irrigation using water turbines
17. Which river connects the great lakes of north America to the atlantic ocean
- a. St.Lawrence river
 - b. Colorado river
 - c. **Amazon river**
 - d. Mackenzie river
18. Which of the following planets is smaller than the earth
- a. Saturn
 - b. Venus
 - c. Uranus
 - d. **Neptune**
19. The early vedic Aryans did not know the use of which of the following metals
- a. **Iron**
 - b. Bronze
 - c. Copper
 - d. Gold
20. Which movie was made based on Dinosaurs
- a. Triassic park
 - b. **Jurassic park**
 - c. Cretaceous park
 - d. Dinosaur park

21. Which of the following Articles of Indian constitution Guarantees freedom to press
 - a. Article 16
 - b. Article 19
 - c. Article 22
 - d. Article 31
22. Lucknow is popular for which fruit
 - a. Mango
 - b. Orange
 - c. Water melon
 - d. Apple
23. The vacancy of the office of the president of india must be filled up within
 - a. 90 days
 - b. **6 months**
 - c. 1 year
 - d. None
24. Who is the chairman of the rajya sabha
 - a. President
 - b. **Vice president**
 - c. Prime minister
 - d. Speaker
25. Who was the first woman become the prime minister of a country
 - a. Golda meir
 - b. Magaret Thatcher
 - c. Indira Gandhi
 - d. **Sirimavo Bhandhrnaike**
26. The speakers vote in the lok sabha is called
 - a. **Casting vote**
 - b. Sound vote
 - c. Direct vote
 - d. Indirect vote
27. Who had estimated National income first
 - a. **Dadabhai naoroji**
 - b. R.C.Dutt
 - c. V.K.R.V.rao
 - d. D.R.Gadgil
28. The planning commission of india is
 - a. A statutory body
 - b. **A non statutory body**
 - c. A constitutional body
 - d. None

29. Which state in India is estimated to have largest coal reserves in india
 - a. Bihar
 - b. Jharkhand**
 - c. Madhya Pradesh
 - d. Orissa
30. Who discovered solar systems
 - a. Copernicus**
 - b. Kepler
 - c. Aryabhata
 - d. Newton
31. The world largest river
 - a. Nile**
 - b. Ganges
 - c. Amazon
 - d. Mississippi
32. The leading coffee producing state in india
 - a. Tamil nadu
 - b. Kerala
 - c. Karnataka**
 - d. Andhra Pradesh
33. The filament of bulb is of
 - a. Mercury
 - b. Copper
 - c. Tugesten**
 - d. None
34. Total number of bones found in human
 - a. 212
 - b. 213
 - c. 206**
 - d. 200
35. Saliva secreted from mouth digest
 - a. Protein
 - b. Startch**
 - c. Fat
 - d. Vitamin
36. Chemical formula of salt
37. President of india
38. Election commission of india
39. Scientist names and their inventions
40. President, chief ministers, names ,popular names,rivers,

English and reasoning

1. Fill in the blank: when I was small I often.....with the other children in our block
 - a. Did play
 - b. Was playing
 - c. Played
 - d. Play
2. Sometimes we like to go for.....picnic on.....beach
 - a. A,an
 - b. An ,a
 - c. A,the
 - d. An,the
3. Please be.....when talking about others
 - a. Discrete
 - b. Discreet
 - c. Complement
 - d. Vile
4. Synonym of "frightened"
 - a. Tensed
 - b. Alerted
 - c. Scared
 - d. Anxious
5. Antonym of "serial"
 - a. Random
 - b. Order
 - c. List
 - d. Abstract
6. Find the next term in the series BMO,EOQ,HQS
 - a. KSU
 - b. LMN
 - c. SOV
 - d. SOW
7. Choose the appropriate verb that can be formed from the noun "Beauty"
 - a. Beautification
 - b. Beautify
 - c. Beautified
 - d. Beauties
8. If MINERAL is written as QRSTUVW and SOUND is written as ABCSD,then how will READER be written in the same code

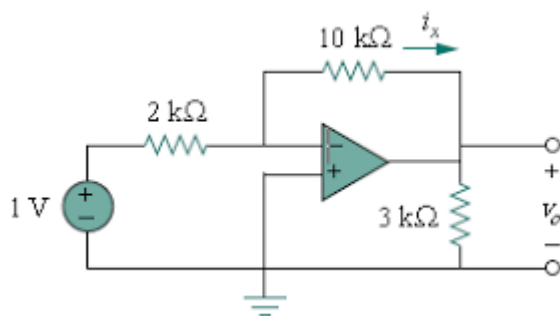
- a. SBF EFS
 - b. UTVD TU
 - c. TUDV UT
 - d. QDZCDQ
9. SRQ, ONM, KJI, GFE,?
- a. IJK
 - b. CBA
 - c. TVU
 - d. ABC
10. 4, 8, 24, 96,
- a. 576
 - b. 192
 - c. 384
 - d. 480
11. Find odd one from the options
- a. 376821
 - b. 318951
 - c. 319446
 - d. 372164
12. 17:26::65:.....
- a. 101
 - b. 50
 - c. 82
 - d. 92
13. P is Q's brother. R is Q's mother. S is R's father. T is S's mother. how is P related to T?
- a. Grandmother
 - b. Grand-daughter
 - c. Great grandson
 - d. Grandson
14. A man starts from point and walks 2 Km towards north, turns towards his right and walks 2km, turns right again and walks. what is the direction he is facing now?
- a. West
 - b. South
 - c. South-east
 - d. North

Electronics Technical Section

Concentrate more on analog circuits, digital circuits, communication, Emtl, control systems, network theory.....

1. The following wave does not exist in wave guide
 - a. TM wave
 - b. TE wave
 - c. **TEM wave**
 - d. TE and TM wave
2. The frequencies in ultra high frequency range are propagated by means of
 - a. Ground wave
 - b. **Space wave**
 - c. Sky wave
 - d. Surface wave
3. The gain G of an antenna of effective area A is given by
 - a. $G=4\pi\lambda/A^2$
 - b. $G=4\pi A/\lambda$
 - c. **$G=4\pi A/\lambda^2$**
 - d. None
4. Which of the following has least wavelength
 - a. **X-rays**
 - b. UV rays
 - c. Infrared
 - d. UHF
5. An antenna that is circularly polarized is
 - a. **Helical**
 - b. Yagi uda
 - c. Parabolic
 - d. Circular loop
6. In series resonance circuit the voltage source is
 - a. **Low resistance**
 - b. High resistance
 - c. Zero resistance
 - d. None
7. Norton theorems results in
 - a. **A current source with an impedance in parallel**
 - b. A voltage source with an impedance series
 - c. A voltage source alone
 - d. A current source alone

8. The number of link branches in a graph of 6 nodes and 9 branches
 - a. 6
 - b. 5
 - c. **4**
 - d. 3
9. How many hardware interrupts are there in 8085 microprocessor
 - a. 4
 - b. **5**
 - c. 3
 - d. 6
10. Which of the following flipflop is used as latch
 - a. JK flip flop
 - b. D flip flop
 - c. **RS flip flop**
 - d. T flip flop
11. The number of flip flops required to build a mod-19 counter is
 - a. 4
 - b. **5**
 - c. 6
 - d. 7
12. For 10 bit A/D converter the quantization error is
 - a. 1
 - b. 0.2
 - c. 2
 - d. **0.1**
13. 2's complement of -7
 - a. **11001**
 - b. 11000
 - c. 10111
 - d. 00111
- 14.



The output voltage V_o of the above circuit is

- a. -6V
- b. -5V
- c. -1.2V
- d. -0.2V

15. The ideal OP-AMP has the following characteristics.

- a) $R_i = \infty, A = \infty, R_o = 0$
- b) $R_i = 0, A = \infty, R_o = 0$
- c) $R_i = \infty, A = \infty, R_o = \infty$
- d) $R_i = 0, A = \infty, R_o = \infty$

16. You can find the zener diode in

- a. The mixer in a superheterodyne receiver
- b. The PLL in a circuit for detecting FM
- c. The product detector in a receiver for SSB
- d. The voltage regulator in a power supply
- e. The AF oscillator in an AFSK transmitter

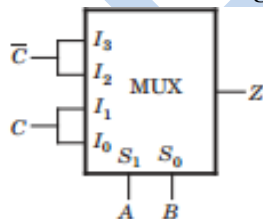
17. A 2 port network using Z parameter representation is said to be reciprocal if

- a. $Z_{11} = Z_{22}$
- b. $Z_{12} = Z_{21}$
- c. $Z_{12} = -Z_{21}$
- d. $Z_{11} - 2Z_{22} = 0$

18. Which of the following oscillator will be used for generating 1-mhz?

- a. **Colpits oscillator**
- b. Wein bridge oscillator
- c. Phase shift oscillator
- d. All of the above

19. The MUX shown in fig. multiplexer. The output Z is



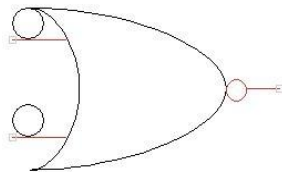
- (A) A xor C
- (B) A and C
- (C) B xor C
- (D) B and C

20. Which amplifier will be preferred for highest gain

- a. Darlington's pair

- b. Cascode amplifier
 - c. **Cascade amplifier**
 - d. None
21. Which of the following amplifier provide wider bandwidth
- a. **Cascode**
 - b. Cascade
 - c. CE
 - d. CC
22. Power diode is generally made from
- a. Silcon
 - b. Germanium
 - c. Both
 - d. None
23. Which transistor mode gives inverted output
- a. **CE**
 - b. CB
 - c. CC
 - d. None
24. Which coupling gives higher gain in case of amplifier
- a. Capacitor
 - b. Inductor
 - c. Transformer
 - d. None
25. Represent 10 in BCD form
- a. 10100
 - b. 1100
 - c. 01011
 - d. None
26. Which PNP device has aterminal for synchronizing purpose
- a. SCS
 - b. Triac
 - c. Diac
 - d. SUS
27. Multivibrator produce
- a. Sine wave
 - b. Square wave
 - c. Triangular wave
 - d. None
28. Free electrons exist in which band
- a. **Conduction**

- b. Valence
 - c. Both
 - d. None
29. Which is used as data selector
- a. Encoder
 - b. Decoder
 - c. Multiplexer
 - d. De multiplexer
30. When both junctions of npn are reversed biased then the transistor is in which mode
- a. Active
 - b. Saturation
 - c. **Cut-off**
 - d. None
31. Which of the following is not a semiconductor
- a. **Diamond**
 - b. Germanium
 - c. Silicon
 - d. Gallium arsenide
32. In a full wave rectifier the current flows in each of the diodes for
- a. One fourth cycle of the input signal
 - b. The complete cycle of the input signal
 - c. Less than half the cycle of the input signal
 - d. **Half cycle of the input signal**
33. An intrinsic semiconductor at the absolute zero temperature
- a. Behaves like an metallic conductor
 - b. Has a large number of holes
 - c. Has a large number of electrons
 - d. **Behaves like an insulator**
34. The negative logic NOR gate shown in the given figure is equivalent to a positive logic of



- a. Ex-or gate
 - b. OR gate
 - c. **AND gate**
 - d. NAND gate
35. The number of comparators in a 4 bit flash ADC is
- a. 16

- b. 4
 - c. 5
 - d. 15**
36. A ring counter consisting of five flip flops will have
- a. Infinite states
 - b. 5 states
 - c. 10 states
 - d. 32 states
37. In a series RLC circuit $R=100\Omega$, $L=1H$, $C=1\mu F$. # dB bandwidth of the circuit is
- a. 159.0 Hz
 - b. 50.0Hz
 - c. 100.5Hz
 - d. 15.9Hz**
38. The character impedance of a lossless transmission line is given by
- a. $1/\sqrt{LC}$
 - b. \sqrt{LC}
 - c. $\sqrt{L/C}$**
 - d. $\sqrt{C/L}$
39. Quantization noise occur in
- a. PWD
 - b. PCM**
 - c. TDM
 - d. FDM
40. The VSB signal is produced from the DSB signal by employing
- a. High frequency modulation
 - b. Simple filter**
 - c. Balanced modulator
 - d. Ring modulator
41. Which interrupt has highest priority
- a. INTR
 - b. TRAP**
 - c. RST7.5
 - d. RST6.5
42. For a type one system the steady state error due to step input is equal to
- a. Infinite
 - b. Zero
 - c. 0.25
 - d. 0.5
43. Peak overshoot of a step input response of an under damped second order system is explicitly indicative of

- a. Settling time
 - b. Rise time
 - c. Natural frequency
 - d. Damping ratio**
44. A system with gain margin close to unity or phase margin close to zero is
- a. Highly stable
 - b. Oscillatory
 - c. Relatively stable
 - d. Unstable
45. A mod-2 counter followed by a mod-5 counter is
- a. Same as a mod-5 counter followed by mod-2 counter
 - b. A decade counter
 - c. Mod-7 counter
 - d. Mod-6 counter
46. The silicon controlled rectifier can be turned off
- a. By a negative gate pulse
 - b. By forced commutation
 - c. With the off switch
 - d. When the break over voltage is exceeded
47. In a photodiode light is focused to fall on
- a. P-region only
 - b. N-region only
 - c. Full p and n region
 - d. Junction region only**
48. If the line frequency is 60 Hz the output frequency of a half wave rectifier is
- a. 30Hz
 - b. 60Hz**
 - c. 120Hz
 - d. 240Hz
49. The superposition theorem is applicable to
- a. Linear responses only**
 - b. Linear and non linear responses
 - c. Non linear responses
 - d. Time variant responses
50. The steady state error of a feed back control system with an acceleration input becomes finite in a
- a. Type 0 system
 - b. Type 1 system
 - c. Type 2 system
 - d. All of these

51. A narrow band amplifier has a band pass nearly.....of central frequency
- 33.3%
 - 10%
 - 50%
 - 25%
52. Phase shift oscillator consists of
- RL
 - RC
 - LC
 - RLC
53. When modulation frequency is doubled, modulation index also doubled in case of
- AM
 - FM
 - PM
 - AM and PM
54. Read write capable memory
- RAM
 - ROM
 - Both
 - None
55. Transistor that can be used in enhancement mode
- NPN
 - UJT
 - MOSFET
 - FET
56. Ripple factor of half wave rectifier
- 1.21
 - 0.48
 - 0.5
 - 1.11