

THE INDIAN INSTITUTE OF METALS

TIRUCHIRAPPALLI CHAPTER

PROUDLY ANNOUNCES THE 26th EDITION OF MATERIALS QUIZ

FOR +1 & +2 STUDENTS

TMAQ @ XXVI



FOR 9th & 10th STUDENTS

JUNIOR TMAQ 17



WRITTEN ROUND ON
16th JULY 2017
13.30 HRS @ SEVEN CENTRES
CONTACT YOUR PRINCIPAL
RUSH YOUR REGISTRATION
CONFIRM YOUR PARTICIPATION
COMPETE FOR YOUR AWARDS



TMAQ

A TECH QUIZ ON METALS AND MATERIALS
FOR +1 AND +2 (CBSE & STATE BOARD)
STUDENTS

**PRIZES FOR
REGION WINNERS**

ZONAL WINNER Rs. 5000/-
RUNNER UP Rs. 3000/-

**MAX. EIGHT ENTRIES
FROM EACH SCHOOL**

**PRIZES FOR WINNERS AT
CENTRE LEVEL**

**WINNER & RUNNER UP
MARCH TO BPMMQ 2017 @ IGCAR**

SEMI FINALS & GRAND FINALE

06th August 2017 09.00 @ ANNA UNIVERSITY, TIRUCHY



For More Details:

Mr. N. Parameswaran Cell: 9442212263
Dr. S. Raman Sankaranarayanan Cell: 9894702353

THE QUIZ ON WORLD OF METALS
FOR 9th AND 10th (CBSE & STATE BOARD)
STUDENTS

**JUNIOR
TMAQ**

WINNER Rs. 2000/-

RUNNER UP Rs. 1000/-

**MAX EIGHT ENTRIES
FROM EACH SCHOOL**

**WINNERS OF CENTRES
WILL ALSO BE AWARDED**

E-mail to: tmaqim@gmail.com
Log on to: www.iimtiruchy.org

99426 86000





THE INDIAN INSTITUTE OF METALS

TIRUCHIRAPPALLI CHAPTER
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Anna University, Tiruchirappalli

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Dy. Manager (R&D, BHEL)

Dr. S. RAMAN SANKARANARAYANAN
Chairman

Ref: IIMT: CM: TMAQ XXVI
Dated June 22, 2017

Dear Sir / Madam,

Sub: Nomination of students for the 26th Edition of Quiz on "Metals and Materials for (+1 & +2) students" and Junior TMAQ 17 for 9th & 10th students - reg.

The Tiruchirappalli Chapter of the Indian Institute of Metals is conducting the Quiz on 'Metals and Materials' TMAQ XXVI for the students of XIth and XIIth Standards. The written quiz is scheduled on July 16, 2017 and the semi-finals & finals will be held on August 06, 2017. The main aim of the quiz is to create awareness among the students about Metals and Materials. Two top ranking teams will be nominated to participate in the International Prof. Brahmkash Memorial Materials Quiz 2017 (BPMMQ 17), which will be held at IGCAR, Kalpakkam on September 8 - 9, 2017. We are proud to inform you that the nominees of the Chapter won top prizes in the past editions of BPMMQ. The top ranking teams of TMAQ XXVI are eligible for the following privileges:

- Participation in BPMMQ 17 and opportunity to win prizes.
- Opportunity to win the O P Jindal Award, as an additional prize.
- To participate and receive the prizes during NMD celebrations at Kanpur in Nov 2017.
- To participate in the Metal Camp programme at Kalpakkam.
- Chapter will take care of travel between Kalpakkam and the school for BPMMQ 17.
- Local hospitality, accommodation and conveyance will be provided by IIM Kalpakkam.
- To participate in Elocution contest as part of BPMMQ and opportunity to get these articles published in BPMMQ souvenir.
- To win the award for best essay and present it on the day of BPMMQ 17.

The schedule of the TMAQ XXVI and the venues are given in Annex I. A set of model questions and a poster about TMAQ XXVI are attached to this letter. The poster can be used to give wide publicity among your students. We request you to kindly send the nominations from your school to the following address on or before 12th July, 2017.

*Mr. N. Parameswaran, Sr. Manager, MM (BOI), Bldg 24, BHEL, Tiruchirappalli, PIN-620 014.
Phone: 0431 - 2577434, (M) 9442212263. E-mail: npeswar@bheltry.co.in, tmaqiim@gmail.com*

As in the previous year, top two teams from each region as detailed below will be awarded.

Region A:	Karur & Tiruchy	ZONE I: Region A & C
Region B:	Madurai	
Region C:	Sankar Nagar	ZONE II: Region B & D
Region D:	Neyveli, Karaikudi & Mayiladuthurai	

(Two Teams from the finalists will be nominated for BPMMQ 2017)

This year also we announce JUNIOR TMAQ 17 for the 9th & 10th students with attractive cash prizes. The details are furnished in Annex II.

In case you need any clarification, feel free to contact the above mentioned co-ordinator.

Looking forward to your active participation and receipt of nominations, **Max. of Eight students** for each quiz (for TMAQ XXVI - 8 & Junior TMAQ 17 - 8) from your institution at the earliest.

With best regards.

Yours Sincerely,

(Dr. RAMAN SANKARANARAYANAN S.)

THE INDIAN INSTITUTE OF METALS

TIRUCHIRAPPALLI CHAPTER

SOLICITS YOUR SUPPORT

FOR THE

MATERIALS QUIZ PROGRAMMES

TMAQ XXVI

&

JUNIOR TMAQ 17



THE INDIAN INSTITUTE OF METALS

TIRUCHIRAPPALLI CHAPTER

(Near 'B' Sector Shopping Centre)

Kallasapuram, Tiruchirappalli - 620 014

Ph: 0431 - 2551847, 2572988, 2572702

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TMAQ XXVI

ANNEX I

This programme is being conducted in two stages viz. written and oral rounds. This year the written test (Individual level) will be conducted at seven centres namely Tiruchirappalli, Karaikudi, Madurai, Mayiladuthurai, Neyveli, Sankar Nagar and Karur on 16th July 2017 at 14.00 hrs. for the convenience of the students of nearby places for participation. The students will be selected based on the performance and they will appear (as teams of two students) for the semifinal / final rounds at Anna University, Tiruchirappalli on 06th August, 2017 at 09.00 hrs.

Top two winning teams in the finals of TMAQ XXVI will get attractive cash prizes and we will be sponsoring the teams to participate in the Prof. Brahm Prakash Memorial Materials Quiz 2017 (BPMMQ) to be organised by the Indian Institute of Metals at IGCAR, Kalpakkam, during September 8 - 9, 2017, which is an international event with attractive cash prizes.

Separate prizes for the winners of the written Quiz for 9th & 10th std students.

Besides top two teams from each region will be awarded.

The IIM, Tiruchirappalli Chapter will bear the travel (3rd AC fare), boarding and lodging expenses for the students participating in the BPMM Quiz at Kalpakkam.

PRELIMINARY ROUND (WRITTEN) Date: 16th July, 2017

Venue	Remarks
Institution Building (Near Kailash Guest House) B sector Kailasapuram BHEL Township Tiruchirappalli - 620 014	Covering Tiruchy, Thanjavur, Perambalur and Ariyalur districts
Cheran Matric Higher Secondary School Vennaiamai, Karur - 639 006	Covering Karur, Erode and Namakkal districts
Azad Girls Matric. Hr. Sec. School Dharmapuram Road, Nangilnadu, Mayiladuthurai	Covering Thiruvarur, Mayiladuthurai, Nagapattinam districts & Karaikkal
Jawahar Matric Higher Sec. School Thiruvalluvar Road, Block - 17, Neyveli - 607 801	Covering Villupuram, Cuddalore, Thiruvannamalai districts
Thiagarajar College of Engg. GST Road, Thirupparankundram Madurai - 625 015	Covering Dindigul, Madurai, Theni and Virudunagar districts
Central Electro Chemical Research Institute (CECRI) Karaikudi - 630 006	Covering Sivaganga, Pudukkottai and Ramanathapuram districts
Sankar Higher Secondary School Sankar Nagar PO Thirunelveli - 627 357	Covering Thirunelveli, Tuticorin and Kanyakumari districts



TMAQ XXVI

TMAQ XXVI

NOMINATION FORM FOR WRITTEN ROUND

Name of the School :

Address of the School :

Phone No. :

E mail :

Name of the Faculty Co-ordinator :

Contact No. :

Written Test Centre: Karur / Tiruchirappalli / Karaikudi / Madurai / Mayiladuthurai / Neyveli / Sankar Nagar
(✓Tick mark your choice)

S. No.	Name	Class
1		
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Mr. N. Parameswaran

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Principal / Headmaster



THE INDIAN INSTITUTE OF METALS

Metallurgy
Materials Engineering

TIRUCHIRAPPALLI CHAPTER

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JUNIOR TMAQ 17

ANNEX II

This Junior TMAQ 17 is introduced to impart the knowledge in materials to the 9th & 10th Students studying in English medium.

This programme is being conducted in two stages viz written and oral rounds. This year the written test (individual level) will be conducted at seven centres namely Tiruchirappalli, Karaikudi, Madurai, Mayiladuthurai, Neyveli, Sankar Nagar & Karur on 16th July 2017 at 14.00 hrs, for the convenience of the students of near by places for participation. Attractive prizes are awaiting for the toppers in the finals. There are prizes for toppers at centres also.

The final (WRITTEN QUIZ) will be conducted at Anna University, Tiruchirappalli on 06th August 2017.

JUNIOR TMAQ 17

PRELIMINARY ROUND (WRITTEN) Date: 16th July, 2017

Venue	Remarks
Institution Building (Near Kailash Guest House) B sector Kailasapuram BHEL Township Tiruchirappalli - 620 014	Covering Tiruchy, Thanjavur, Perambalur and Ariyalur districts
Cheran Matric Higher Secondary School Vennaimalai, Karur - 639 006	Covering Karur, Erode and Namakkal districts
Azad Girls Matric. Hr. Sec. School Dharmapuram Road, Nangilnadu, Mayiladuthurai	Covering Thiruvavur, Mayiladuthurai, Nagapattinam districts & Karaikkal
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Sankar Higher Secondary School Sankar Nagar PO Thirunelveli - 627 357	Covering Thirunelveli, Tuticorin and Kanyakumari districts



JUNIOR TMAQ 17

NOMINATION FORM FOR WRITTEN ROUND FOR 9th & 10th STUDENTS

Name of the School :

Address of the School :

Phone No. :

E mail :

Name of the Faculty Co-ordinator :

Contact No. :

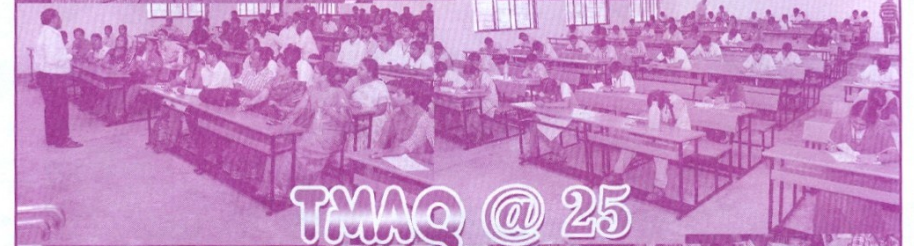
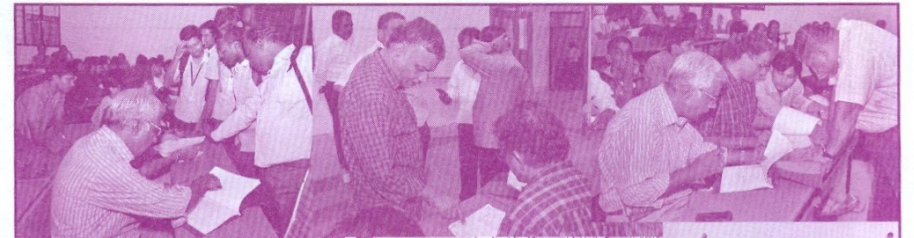
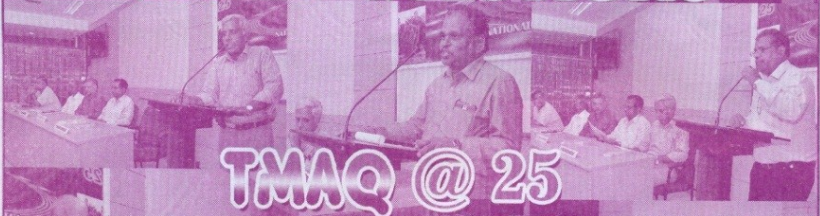
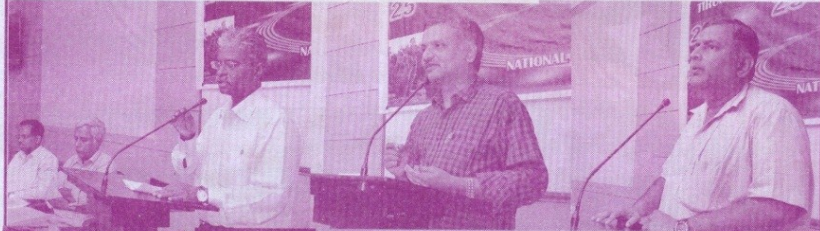
Written Test Centre: Karur / Tiruchirappalli / Karaikudi / Madurai / Mayiladuthurai / Neyveli / Sankar Nagar
(✓Tick mark your choice)

S. No.	Name	Class
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Principal / Headmaster

THE INDIAN INSTITUTE OF METALS
TMAQ TIRUCHIRAPPALLI CHAPTER  **IIM**
Metallurgy
Materials Engineering



SCOPE OF THE QUIZ

History and evolution of materials: Origin of names of minerals and metals, use of metals in the early ages, metal extraction, ores, extraction processes, location of industries and availability of metals in India; Applications of common alloys; Iron and steel making, types of steels and cast irons and their applications.

Atomic structure & periodic table: Bonding; Crystalline materials: Metals, semiconductors, crystal defects, physical properties: Electronic, optical, thermal and magnetic properties; characterisation of materials: X - ray, electron microscopy etc.

Mechanical properties: Elasticity, plasticity and fracture: Tensile, creep, impact and hardness, Processing of metals: Cold and hot working, casting, powder metallurgy, metal joining.

Corrosion: Electro deposition, oxidation of metals, corrosion protection methods.

Non - destructive testing: Radiography, ultrasonic, electrical and magnetic methods, laser methods.

Advanced materials: Amorphous materials, ceramics, polymers, composites, biomaterials, materials in energy production and transport, nuclear materials, electronic materials.

MODEL QUESTIONS

A set of 100 model questions is enclosed. The Questions 1 to 75 are Oral Questions, indicating the model of questions, which a student can expect in the semi final / final rounds. The last 25 questions are objective type questions, which a student can expect in the written round of preliminary quiz. This may be used as guidance in preparing for the quiz.

The students are advised to read books on metals, materials and metallurgy. There are also plenty of web sites, which could give a world of information on materials. The students are encouraged to go through them in their preparation process. Knowledge of materials is an asset in life. The organisers of TMAQ wish the students a great learning experience, together with attractive fame and dime.

1. A variety of HAEMATITE (Fe_2O_3), occurs as rhombohedra crystals. It is black in colour and has attractive metallic lustre. What is its common name? SPECULAR IRON
2. Indian weaponry was famous in history. What was the alloy used for this called? WOOTZ STEEL
3. Name the element that is named after the Greek Goddess of moon & is today very essential to the process of reprography SELENIUM
4. Name the metal produced at the Zawar Mines in Rajasthan? ZINC
5. On December 2nd of this year Enrico Fermi accomplished the historic first nuclear chain reaction? 1942
6. Which ionic compound is known as "Lunar caustic"? AgNO_3 , SILVER NITRATE
7. What is the name given to the alloy of elements Gold, Silver, Copper, Tin and Zinc that was used in the making of idols for temples. PANCHALOHA
8. What is the name given to describe the phenomenon in which there are dimensional changes associated with the magnetisation of a material such as Fe, Ni, Cu, etc. MAGNETOSTRICTION
9. The effect whereby a conductor carrying an electric current perpendicular to an applied magnetic field develops a voltage gradient transverse to both current and magnetic field is called as HALL EFFECT
10. What is the name given to the phenomenon when the material exhibits spontaneous electric polarisation that changes with heating PYROELECTRICITY
11. When a ferromagnetic material such as Fe is magnetised, while the magnetisation current is increased continuously, the magnetisation does not increase continuously, but as a series of small jumps. What is the name of this phenomenon? BARKHAUSEN EFFECT
12. The expulsion of magnetic flux by a super conducting material is referred to as MEISSNER EFFECT
13. In certain crystals such as calcite, the light travels at different speeds in different directions. What is this phenomenon called? BI - REFRACTANCE

14. A type of deformation behaviour, which although results in a complete recovery after the removal of stress, where a part of the deformation is viscous is called as VISCO - ELASTICITY
15. A tree like pattern that is usually formed by the solidification of a metal is called by a specific name. What is it? DENDRITE
16. "Nataraja" idols were made by some casting route, which is used today to make turbine blades for jet engines. Name this casting route. INVESTMENT CASTING (Also called as FULL MOULD CASTING)
17. What is the name given to the process in which a block of metal is reduced in cross section by forcing it to flow through a die orifice under high pressure? EXTRUSION
18. What is the name given to the process that involves heating the sample in carbonaceous atmosphere to harden steel components? CARBURISING
19. What is the name given to the process in which a continuous sheet of the thermoplastic material is fabricated by squeezing the softened material between two horizontal rollers? CALENDERING
20. What is the name given to the process of heating natural rubber with sulphur, which results in the increase in cross linking of the polymer and an increase in strength? VULCANISATION
21. What is the name given to the process of coating zinc on steel? GALVANISATION
22. What is the common name for the mineral HgS ? CINNABAR
23. A silicate of beryllium and aluminium, $3\text{BeO} \cdot \text{Al}_2\text{O}_3 \cdot 6\text{SiO}_2$ crystallizes in hexagonal form. The gem varieties are lustrous and transparent have emerald or aquamarine colour. What are these called? BERYL
24. A sulphide of Zn that crystallizes in cubic form. How is it referred to in mineralogy? BLACK JACK
25. Fool's Gold is of course not gold. What is it? CHALCOPYRITE
26. What is the common name for the mineral TiO_2 ? RUTILE
27. What is the popular name of cubic zirconia? AMERICAN DIAMONDS
28. What is the common name for the mineral potassium aluminium silicate ($\text{KAl}_3\text{Si}_3\text{O}_8$)? FELDSPAR
29. What is the trade name of the ceramic Silicon Carbide (SiC)? CARBORUNDUM
30. You may be aware that ceramics are increasingly being used as bio-compatible materials. Which is the ceramic material used as prosthesis for hip joints? ALUMINA (Al_2O_3)
31. What is the technical term that characterizes the high melting point ceramics? REFRACTORY
32. What is the important property of ceramics like BaTiO_3 that is used in the fabrication of ceramic disk capacitors? HIGH DIELECTRIC CONSTANT
33. A ceramic, $3\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$ is used as a refractory material for furnace linings. What is its common name? MULLITE
34. A naturally occurring oxide of aluminium that forms rhombohedral crystal and nearly as hard as diamond is called as CORUNDUM
35. A class of materials closely related to magnetic, having superior magnetic properties in view of their lower conductivity are called as FERRITES)
36. Natural rubber is polymer. Can you tell the name of the monomer out of which this polymer is made? ISOPRENE
37. We all know that cotton is one of the natural fibres that is derived from Plants. Can you name another? JUTE or HEMP
38. What is the common name for the polymeric material Phenol Formaldehyde? BAKELITE
39. Protective helmets, toys and automobile parts are made from this plastic which in short form is referred to as "ABS" What does "ABS" stand for? ACRYLIC BUTADIENE STYRENE.
40. Now with consciousness for preserving and protecting our environment, newer kinds of plastics are being formulated that can be attacked by microbes and broken down to cellulose. What is the name given to such plastics? BIO DEGRADABLE PLASTICS
41. An important class of polymers are polyamides. What is their common name? NYLON

42. What is the polymer in the packing material thermocole? POLYSTYRENE
43. A very widely used polymer is Polymethyl methacrylate. How is it otherwise called? PERSPEX
44. Which thermosetting material is used for making tableware? MELAMINE FORMALDEHYDE.
45. What is the name of the plastic fibre of which bullet proof vests are made? KEVLAR
46. What is the common name for the construction material that is a combination of calcite and clay? PORTLAND CEMENT
47. Name the mineral in the gem JADE. SODIUM ALUMINIUM SILICATE, $\text{NaAlSi}_3\text{O}_6$
48. What is the common name for the mineral $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$? GYPSUM
49. Name the process by which metals heated to higher temperature and cooled rapidly in water, air, molten or fused salts for the purpose of hardening. QUENCHING
50. What is gun metal? BRONZE (88 % Cu, 10 % Sn and 2 % Zn)
51. Name the metal widely used in aerospace industry and named after Greek mythology hero? TITANIUM
52. This Al Cu alloy denoted by 2014, used predominantly in aerospace industry? DURALUMIN
53. Springs are used to absorb motion or energy and balance the mechanical loads in a system. This element is commonly added to spring steel? SILICON
54. The Tarapur Atomic Power Plant is located in this state MAHARASHTRA
55. Where is the oldest oil well in India located? DIGBOI (ASSAM)
56. He is the prime architect of the Indian Nuclear Programme? HOMI JEHANGIR BHABA
57. An American rolling mill company first produced commercially very pure iron. What is the name given to this pure iron? ARMCO IRON
58. The names LINZ and DONAVITZ are associated with the production of which material? STEEL
59. One of the figurines excavated near Mohenjo-dara is the "DANCING GIRL". What is it made of? BRONZE
60. This metal was formerly known as Glucinum, meaning sweet owing to the sweet taste of its salts but its present name was derived from one of its minerals. What is this Metal? BERYLLIUM
61. The expansion of the acronym MRI is: MAGNETIC RESONANCE IMAGING
62. Francium is named after France. Name one more element, which derives its name from France? GALLIUM
63. What are SIALONS? CERAMIC
64. What makes stainless steel stainless? ADDITION OF CHROMIUM
65. What is Rayon? A general name for artificial silk.
66. What is ALNICO and what is its application? It is a permanent magnetic material, composed of aluminium, nickel and cobalt.
67. Why Dolomite is added along with the charge in blast furnace? TO FLUX SILICEOUS IMPURITIES AS SLAG.
68. We know about normal process cooling. What is Super cooling? COOLING OF LIQUID BELOW ITS NORMAL FREEZING POINT.
69. We know normal electrical conductivity as the ability of the material to carry current. What is super conductivity? REFERS TO ZERO RESISTANCE FOR CONDUCTING ELECTRICITY.
70. Name the element, which finds extensive application in photocopying? SELENIUM
71. Alloy refers to a phase with more than one element. What is a super alloy? AN ALLOY WITH SUPERIOR MECHANICAL PROPERTIES AT HIGH TEMPERATURES.
72. Crystal structure refers to arrangement of atoms in a lattice. What is a super lattice?
WHEN MORE THAN ONE TYPE OF ATOMS ARE PRESENT AND WHEN DISTINCT ATOMS OCCUPY DISTINCT POSITIONS, THE RESULTING LATTICE IS CALLED SUPER LATTICE.
73. Atomic Packing Factor of Hexagonal close packed Crystal is? 0.74
74. The most common colour of the gemstone Topaz is? Yellow
75. Sphalerite is an ore of? Zinc

76. The wavelength of light can be experimentally found using:

A	Ripple Tank	B	Diffraction Grating	C	Plane Mirror	D	Glass Prism
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77. A transformer steps up the voltage from 220 Volts to 11,000 Volts. If the primary has 100 turns the secondary should have _____ turns? (Answer = $(11,000 / 220) * 100 = 5000$)

A	5000	B	500	C	50	D	50000
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78. In a Germanium Crystal the inter atomic bonds are:

A	Ionic	B	Metallic	C	Van der Waals	D	Covalent
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79. A compound alloy of metals A and B has a unit cell containing A atoms at the corners and B atoms at the face centres of the FCC structure. What would be the formula for the compound?

A	AB	B	AB_3	C	AB_2	D	A_2B
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80. A wire of length 2 m is redrawn to a length of 4 m. Then its resistance will:

A	Decrease to 1/4 of original	B	Double	C	Increase four times	D	Does not change
---	-----------------------------	---	--------	---	---------------------	---	-----------------

81. At the magnetic equator the angle of dip would be:

A	0°	B	90°	C	180°	D	45°
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82. The SI units of magnetic field is:

A	Gauss	B	Oersted	C	Tesla	D	Pascal
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83. The activity of a radioactive sample decreases to one third of its original intensity (I_0) in 9 years. After a further period of 9 years, its activity would be:

A	Same	B	$I_0 / 6$	C	$I_0 / 4$	D	$I_0 / 9$
---	------	---	-----------	---	-----------	---	-----------

84. The unit of Planck's constant is:

A	Nm	B	eV	C	Js^{-1}	D	Js
---	----	---	----	---	------------------	---	----

85. An example of a diamagnetic substance is:

A	Aluminium	B	Copper	C	Antimony	D	Cobalt
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86. Poisonous gas present in the exhaust fume of a car is:

A	CH_4	B	C_2H_2	C	CO	D	CO_2
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87. Carborundum is the commercial name of:

A	Al_2O_3	B	$\text{Ca}(\text{H}_2\text{PO}_4)_2$	C	H_3PO_4	D	SiC
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88. During the daytime, plants absorb:

A	Carbon dioxide	B	Carbon monoxide	C	Nitrogen	D	Oxygen
---	----------------	---	-----------------	---	----------	---	--------

89. Which of the following forms of carbon finds use in the sugar industry?

A	Animal charcoal	B	Sugar charcoal	C	Lamp black	D	Wood charcoal
---	-----------------	---	----------------	---	------------	---	---------------

90. Iron is rendered passive by treatment with concentrated:

A	H_2SO_4	B	H_3PO_4	C	HCl	D	HNO_3
---	-----------	---	-----------	---	-----	---	---------

91. Melting point of an alloy is normally

A	Less than pure metal	B	More than pure metal	C	Same as pure metal	D	Dependent on the base metal and alloy
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92. In the extraction of iron, the furnace charge consists of iron ore coke and limestone. The function of limestone is to act as:

A	An oxidiser	B	A deoxidiser	C	Flux	D	Slag
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93. This is a measure of toughness of a material?

A	Tensile Strength	B	Yield Strength	C	Creep Strength	D	Impact Strength
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94. The anode mud obtained during electrolytic refining of copper contains:

A	Iron	B	Nickel	C	Silver	D	Zinc
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95. Aluminium is not present in the mineral:

A	Cryolite	B	Feldspar	C	Fluorspar	D	Mica
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96. PVC has the repeating unit of:

A	Acrylonitrile	B	Ethylene	C	Tetrafluoroethylene	D	Vinyl Chloride
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97. Bakelite is manufactured by the reaction between:

A	Ethylene glycol and Phthalic acid	B	Melamine and Formaldehyde	C	Phenol and Formaldehyde	D	Urea and Formaldehyde
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98. Terylene is the polyester of:

A	Ethylene glycol and phthalic acid	B	Hexa-methylene	C	Phenol fordiamine & Adipic acid	D	Urea and formaldehyde maldehyde
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99. A raw material used in making nylon is:

A	Adipic acid	B	Butadiene	C	Ethylene	D	Methyl methacrylate
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100. Chemically considering, digestion is basically:

A	Hydrolysis	B	Anabolism	C	Hydrogenation	D	Dehydrogenation
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Answers

76 B 77 A 78 D 79 B 80 C 81 A 82 C 83 D 84 D 85 B 86 C 87 D 88A

89 A 90 D 91 A 92 C 93 D 94 C 95 C 96 D 97 C 98 A 99 A 100 A

**"Education is not the filling of a pail, but the lighting of a fire."
William Butler Yeats**

