



## CBRT - 2020 Question Paper Grid

Government of Goa

19 January 2020

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### Associate Professor(Pharmaceutics)

Itemcode : **PA1051**

**Q1** : Who is the author of 'Dreams of a Billion: India and the Olympic Games'?

- (a) Ram Singh
- (b) Nalin Mehta
- (c) Chetan Bhagat
- (d) Baggi Anveil

Key: **B**

Itemcode : **PA1052**

**Q2** : How many commercial satellites have been launched by ISRO along with RISAT-2BR1?

- (a) 7
- (b) 9
- (c) 10
- (d) 12

Key: **B**

Itemcode : **PA1053**

**Q3** : The National Unity Day is celebrated every year on which of the following date?

- (a) October 31
- (b) October 30
- (c) October 29
- (d) October 20

Key: **A**

Itemcode : **PA1054**

**Q4** : The famous "Chatham Saw Mill" is located in which among the following states / union territories of India?

- (a) Daman & Diu
- (b) Goa
- (c) Andaman & Nicobar
- (d) Laskhadweep

Key: **C**

Itemcode : **PA1055**

**Q5** : One kilobyte (KB) is equal to

- (a) 1,000 bits
- (b) 1,024 byte
- (c) 1,024 megabytes
- (d) 1,024 gigabytes

Key: **B**

Itemcode : **PA1056**

**Q6** : The concentration of which gas is highest in our environment?

- (a) Oxygen
- (b) Hydrogen
- (c) Nitrogen
- (d) Carbon dioxide

Key: **C**

Itemcode : **PA1057**

**Q7** : In which field of Art Jamini Roy make his name?

- (a) Music
- (b) Drama
- (c) Sculpture
- (d) Painting

Key: **D**

Itemcode : **PA1058**

**Q8** : Goa Shipyard Limited (GSL) was established in

- (a) 1972
  - (b) 1957
  - (c) 1962
  - (d) 1965
- Key: **B**

Itemcode : **PA1059**

**Q9** : Which country produces the most rubber in the world?

- (a) Vietnam
  - (b) Malaysia
  - (c) Thailand
  - (d) India
- Key: **C**

Itemcode : **PA1060**

**Q10** The venue for Summer Olympics in year 2020 is \_\_\_\_\_  
:

- (a) Paris
  - (b) Tokyo
  - (c) Qatar
  - (d) Sydney
- Key: **B**

Itemcode : **PA1001**

**Q11** Presence of p-glycoprotein at high levels on gastro-intestinal membrane \_\_\_\_\_  
:

- (a) Increases bioavailability of drugs
  - (b) Reduces systemic circulation of drug
  - (c) Increases systemic circulation of drug
  - (d) Decreases efflux of the drug into GI tract
- Key: **B**

Itemcode : **PA1002**

**Q12** One of the popular examples for RSM designs is \_\_\_\_\_  
:

- (a) Plackett-Burman design
  - (b) Fractional factorial design
  - (c) Full factorial design
  - (d) Box-Behnken design
- Key: **D**

Itemcode : **PA1003**

**Q13** Important feature of Hatch-Waxman Act.  
:

- (a) Duplication of preclinical and clinical studies are eliminated
  - (b) 180 days exclusivity to first generic product introduction
  - (c) 3 years 'free from generic competition' -for supplemental NDA, for new labeling/use
  - (d) All of the above
- Key: **D**

Itemcode : **PA1004**

**Q14** \_\_\_\_\_ lists biological products, including any biosimilar and interchangeable biological products, licensed by  
: FDA.

- (a) Orange Book
  - (b) Violet Book
  - (c) Blue Book
  - (d) Purple Book
- Key: **D**

Itemcode : **PA1005**

**Q15** Requirement and guidelines on clinical trials for import and manufacture of new drugs are stated in schedule  
: \_\_\_\_\_

- (a) Schedule Y
  - (b) Schedule W
  - (c) Schedule D
  - (d) Schedule M
- Key: **A**

Itemcode : **PA1006**

**Q16** The scattering of light by coarse and colloidal dispersed systems is known as \_\_\_\_\_  
:

- (a) Tyndall effect
  - (b) DLVO theory
  - (c) Reflection
  - (d) Transmission
- Key: **A**

**Itemcode : PA1007**

**Q17** Chemically Tweens are known as \_\_\_\_\_  
:

- (a) Sorbitan esters of fatty acids
- (b) Polyoxyethylenesorbitan esters of fatty acids
- (c) Alcohol polyethylene glycol esters
- (d) Fatty acid polyethylene glycol esters

Key: **B**

**Itemcode : PA1008**

**Q18** One of the following is not a Non-Ionic Stabilizer  
:

- (a) Sorbitan esters
- (b) Polysorbate
- (c) Polyoxyethylene lauryl ether
- (d) Alkylbenzenesulfonates

Key: **D**

**Itemcode : PA1009**

**Q19** In level-2 SUPAC changes, the total additive effect of all excipient changes should not be more than \_\_\_\_\_  
:

- (a) 5%
- (b) 10%
- (c) 15%
- (d) 20%

Key: **B**

**Itemcode : PA1010**

**Q20** Which solvent is most useful for bromo acids dyes in lipsticks?  
:

- (a) Liquid paraffin
- (b) Almond oil
- (c) Castor oil
- (d) Water

Key: **C**

**Itemcode : PA1011**

**Q21** As per European Union's GMP classification, Grade A cleanroom must meet  
:

- (a) 3500 particles of 0.5  $\mu\text{m}$  size per meter cube
- (b) 1500 particles of 0.5  $\mu\text{m}$  size per meter cube
- (c) 3500 particles of 5  $\mu\text{m}$  size per meter cube
- (d) 1500 particles of 5  $\mu\text{m}$  size per meter cube

Key: **A**

**Itemcode : PA1012**

**Q22** Bacillus subtilis is used as biological indicator for \_\_\_\_\_ sterilization method  
:

- (a) Moist heat
- (b) Dry heat
- (c) Filtration
- (d) Radiation

Key: **B**

**Itemcode : PA1013**

**Q23** Niosomes mainly contain \_\_\_\_\_  
:

- (a) Phospholipids
- (b) Sphingolipids
- (c) Non-ionic surfactants
- (d) Proteins

Key: **C**

**Itemcode : PA1014**

**Q24** The proportion of drug reabsorbed from the renal tubule does not depend on one of the following :  
:

- (a) glomerular filtration rate
- (b) urine flow rate
- (c) urine pH
- (d) lipophilicity of un-ionised drug

Key: **A**

**Itemcode : PA1015**

**Q25** PEGylation is often employed as a strategy to reduce \_\_\_\_\_  
:

- (a) Endocytosis  
(b) Pinocytosis  
(c) Phagocytosis  
(d) Transcytosis  
Key: **C**

Itemcode : **PA1016**

**Q26** Selection of dialysis membrane for diffusion studies generally depends on one of the following properties of the drug :

- (a) Molecular weight  
(b) Lipid solubility  
(c) Particle size  
(d) Partition coefficient  
Key: **A**

Itemcode : **PA1017**

**Q27** Following test need not be performed for chewable tablets \_\_\_\_\_ :

- (a) Uniformity of weight test  
(b) Hardness test  
(c) Friability test  
(d) Disintegration test  
Key: **D**

Itemcode : **PA1018**

**Q28** Which reaction is observed in degradation of ampicillin? :

- (a) decarboxylation  
(b) hydrolysis  
(c) oxidation  
(d) recimization  
Key: **B**

Itemcode : **PA1019**

**Q29** Which of the following module contains clinical study reports in Common Technical Document (CTD)? :

- (a) Module 2  
(b) Module 3  
(c) Module 4  
(d) Module 5  
Key: **D**

Itemcode : **PA1020**

**Q30** Which of the following is not a category of ICH guidelines? :

- (a) Quality  
(b) Multidisciplinary  
(c) Clinical  
(d) Efficacy  
Key: **C**

Itemcode : **PA1021**

**Q31** The notice of inspection of US-FDA is given in the format of \_\_\_\_\_ :

- (a) Form 481  
(b) Form 482  
(c) Form 483  
(d) Warning letter  
Key: **B**

Itemcode : **PA1022**

**Q32** As per ICH stability guideline (Q1AR2), the minimum time period covered by data for the submission of accelerated stability is \_\_\_\_\_ :

- (a) 3 Months  
(b) 4 Months  
(c) 6 Months  
(d) 8 Months  
Key: **C**

Itemcode : **PA1023**

**Q33** Which one of the following is a biocompatible and biodegradable polymer? :

- (a) Poly (methylmethacrylate)  
(b) Poly (Lactide-co-glycolide)  
(c) Ethyl cellulose

(d) Poly vinyl chloride

Key: **B**

Itemcode : **PA1024**

**Q34** Electro dialysis method is employed in colloidal dispersion for \_\_\_\_\_

:

- (a) Identification
- (b) Preparation
- (c) Purification
- (d) Stabilization

Key: **C**

Itemcode : **PA1025**

**Q35** Which of the following is a "Flow through cell"?

:

- (a) USP Type IV apparatus
- (b) USP Type III apparatus
- (c) USP Type V apparatus
- (d) USP Type VI apparatus

Key: **A**

Itemcode : **PA1026**

**Q36** When should revalidation be done

:

- (a) When there are changes in the process for the synthesis of the drug substance.
- (b) When there are changes in the composition of the finished product.
- (c) When there is a transfer of methods from one laboratory to another
- (d) All the above

Key: **D**

Itemcode : **PA1027**

**Q37** During tableting Bonding of particles is governed by

:

- (a) The mechanical theory
- (b) Intermolecular theory
- (c) Liquid surface film theory
- (d) All the above

Key: **D**

Itemcode : **PA1028**

**Q38** Which of these methods can not be used to determine crystal structure

:

- (a) Laue photographic method
- (b) Goug's method
- (c) Oscillating crystal method
- (d) Powder method

Key: **B**

Itemcode : **PA1029**

**Q39** Pareto charts in Total quality management is

:

- (a) To identify the principal causes of problems
- (b) Charts of cause and effect in processes
- (c) To provide a record of quality
- (d) Used as device in statistical process control

Key: **A**

Itemcode : **PA1030**

**Q40** The US FDA outlines the key areas of \_\_\_\_\_ in 21CFR820.70(g)

:

- (a) IQ
- (b) OQ
- (c) PQ
- (d) Report

Key: **A**

Itemcode : **PA1031**

**Q41** Energy changes involved in visible spectroscopy

:

- (a) Valence electron
- (b) Inner cell electron
- (c) Nuclear
- (d) Spin orientation

Key: **A**

Itemcode : **PA1032**

**Q42** For UV Spectroscopy, the following source of Lamp is used

:

- (a) Tungsten Lamp
- (b) Hydrogen Lamp
- (c) Nernst glow Lamp
- (d) Incandescent Lamp

Key: **A**

Itemcode : **PA1033**

**Q43** Electron transition  $\pi - \pi^*$  and  $n - n^*$  occurs in

:

- (a) Alkenes
- (b) Amines
- (c) Carbonyl (Ketones)
- (d) Nitro compounds

Key: **C**

Itemcode : **PA1034**

**Q44** How many normal vibration modes are possible in the linear molecule of Ethane

:

- (a) 10
- (b) 16
- (c) 13
- (d) 19

Key: **D**

Itemcode : **PA1035**

**Q45** Finger print region in IR spectroscopy is

:

- (a) 1300 - 650/cm
- (b) 4000 - 2500/cm
- (c) 4000 - 1300/cm
- (d) 3000 - 2000/cm

Key: **A**

Itemcode : **PA1036**

**Q46** How many fundamental vibrational frequencies would you expect to observe in the infrared absorption spectrum of

:

Water (H<sub>2</sub>O)

- (a) 2
- (b) 5
- (c) 3
- (d) 7

Key: **C**

Itemcode : **PA1037**

**Q47** Bulk property detector used in HPLC is

:

- (a) Refractive index detector
- (b) UV detector
- (c) IR detector
- (d) Phototube detector

Key: **A**

Itemcode : **PA1038**

**Q48** If in a situation one knows wavelength ( $\lambda$ ), and order 'n', it is possible to calculate the spacing between two crystal

:

lattice from Bragg's equation which may be expressed as

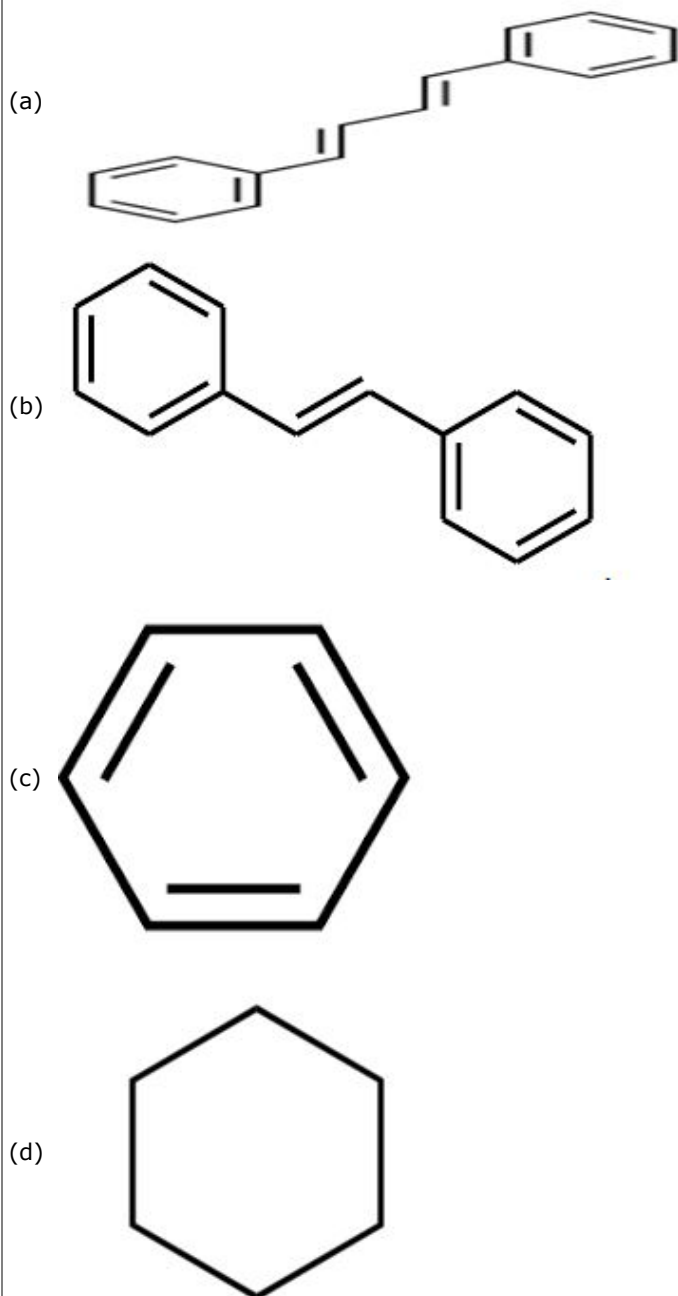
- (a)  $d = n\lambda/2\sin \theta$
- (b)  $d = \lambda/2n\sin \theta$
- (c)  $d = 2\sin \theta/n\lambda$
- (d)  $d = n/2\sin \theta\lambda$

Key: **A**

Itemcode : **PA1039**

**Q49** Which will have greater  $\lambda_{\max}$

:

Key: **A**Itemcode : **PA1040****Q50** Autoclaving cannot be used for :

- (a) Oily injections
- (b) Aqueous injections
- (c) Large volume parenterals
- (d) Plastic and rubber closures

Key: **A**Itemcode : **PA1041****Q51** Water attack test is performed on :

- (a) Type I glass
- (b) Type II glass
- (c) Type III glass
- (d) Type IV glass

Key: **B**Itemcode : **PA1042****Q52** Match the Mucoadhesive pharmaceutical polymers with their relative mucoadhesive powers

:

S. NO	POLYMER	S. NO	MUCOADHESIVE FORCE
1	Povidone	a	193
2	Carboxymethylcellulose	b	154
3	Tragacanth	c	116
4	Gelatin	d	98

- (a) 1-d, 2-a, 3-b and 4-c
- (b) 1-c, 2-b, 3-a and 4-d
- (c) 1-b, 2-c, 3-d and 4-a

(d) 1-a, 2-d, 3-c and 4-b

Key: **A**

Itemcode : **PA1043**

**Q53** Which of the following statement is not appropriate for rate of Drug release from a microreservoir drug delivery system :

- (a) increases if diffusivity of drug in liquid compartment increases
- (b) increases if diffusivity of drug in polymer coating membrane increases
- (c) increases if diffusivity of drug in elution solution increases
- (d) increases if solubility of drug increases in the polymer matrix

Key: **A**

Itemcode : **PA1044**

**Q54** In partition paper chromatography the stationary phase is :

- (a) Cellulose paper
- (b) An organic solvent
- (c) Water embedded in the matrix of cellulose paper
- (d) Silica Gel

Key: **C**

Itemcode : **PA1045**

**Q55** Most suitable carrier gas in chromatography is :

- (a) Hydrogen
- (b) Nitrogen
- (c) Helium
- (d) Argon

Key: **C**

Itemcode : **PA1046**

**Q56** Bolometer is :

- (a) Indicator
- (b) Source of IR radiation
- (c) Selective Detector
- (d) Non selective Detector

Key: **D**

Itemcode : **PA1047**

**Q57** The unit within the pharmaceutical manufacturer that ensures that the finished dosage form has met all the specifications for its intended use the :

- (a) Analytical methods unit
- (b) Marketing and sales unit
- (c) Quality assurance unit
- (d) Quality control unit

Key: **D**

Itemcode : **PA1048**

**Q58** Manufacturers may make a change in the formulation after market approval. If the change in the formulation is considered a minor change, the manufacturer needs to report the change to the FDA only

- (a) Annual report
- (b) Preapproval statement
- (c) IND submission
- (d) No report is required

Key: **A**

Itemcode : **PA1049**

**Q59** Which of the following is the astringent used in non-prescription ophthalmic agents that is recommended by FDA :

- (a) Edetic acid
- (b) Benzalkonium chloride
- (c) Zinc sulphate
- (d) Povidone

Key: **C**

Itemcode : **PA1050**

**Q60** Plaster of Paris is usually added to the adsorbent to :

- (a) make TLC more sensitive
- (b) hold the adsorbent firmly on the chromatoplate
- (c) ensure that the solvent front does not run off the chromatoplate
- (d) make it suitable for using corrosive reagents

Key: **B**

Itemcode : **PA1061**



**Q61** In each of the following questions a statement is given, followed by two conclusions. Give answer :

:

Statement : Today out of the world population of several thousand million, the majority of men have to live under governments which refuse them personal liberty and the right to dissent.

Conclusion :

I. People are indifferent to personal liberty and the right to dissent.

II. People desire personal liberty and the right to dissent.

- (a) Only conclusion I follows.  
 (b) Only conclusion II follows.  
 (c) Either I or II follows.  
 (d) Neither I or II follows.

Key: **B**

Itemcode : **PA1062**

**Q62** Among Praveen, Pravat, Pankaj, Pratap, and Prakash, each having different weight, D is heavier than only A and C is lighter than B and E. Who among them is the heaviest?

- (a) Pravat  
 (b) Pankaj  
 (c) Prakash  
 (d) Data inadequate

Key: **C**

Itemcode : **PA1063**

**Q63** From the following numbers given, find the one that does not belong to the group.

:

- (a) 215  
 (b) 143  
 (c) 247  
 (d) 91

Key: **A**

Itemcode : **PA1064**

**Q64** QLR, JPD, RNU, GNC, SPX, DLB, \_\_\_

:

- (a) ARE  
 (b) AJA  
 (c) BTU  
 (d) TRA

Key: **D**

Itemcode : **PA1065**

**Q65** PKC, SPF, XSK, AXN, \_\_\_, IFV

:

- (a) CAQ  
 (b) FCS  
 (c) FAS  
 (d) CFS

Key: **C**

Itemcode : **PA1066**

**Q66** GTB, CYV, YDP, \_\_\_, QND

:

- (a) DIV  
 (b) UIJ  
 (c) DDV  
 (d) UVV

Key: **B**

Itemcode : **PA1067**

**Q67** Here are some words translated from an artificial language.

:

godabim means kidney stones

romzbim means kidney beans

romzbako means wax beans

Which word could mean "wax statue"?

- (a) godaromz  
 (b) lazvim  
 (c) wasibako  
 (d) romzpeo

Key: **C**

Itemcode : **PA1068**

**Q68** Here are some words translated from an artificial language.

:

granamelke means big tree

pinimelke means little tree

melkehoon means tree house

Which word could mean "big house"?

- (a) granahoon
- (b) pinishur
- (c) pinihoon
- (d) melkegrana

Key: **A**

Itemcode : **PA1069**

**Q69** Here are some words translated from an artificial language.

:

lelibroon means yellow hat

plekafroti means flower garden

frotimix means garden salad

Which word could mean "yellow flower"?

- (a) lelifroti
- (b) lelipleka
- (c) plekabroon
- (d) frotibroon

Key: **B**

Itemcode : **PA1070**

**Q70** Here are some words translated from an artificial language.

:

myncabel means saddle horse

conowir means trail ride

cabelalma means horse blanket

Which word could mean "horse ride"?

- (a) cabelwir
- (b) conocabel
- (c) almamyn
- (d) conoalma

Key: **A**

Passage:

Read the following passage and answer the questions below

In the Roman times, defected enemies were generally put to death as criminals for having offended the emperor of Rome. In the middle ages, however, the practice of ransoming or returning prisoners in exchange for money became common. Though some saw this custom as a step towards a most humane society, the primary reasons behind it were economic rather than humanitarian.

In those times, rulers had only a limited ability to raise taxes. They could neither force their subject to fight nor pay them to do so. The promise of material compensation in the form of goods and ransom was therefore the only way of inducing combatants to participate in a war. In the middle ages, the predominant incentive for the individual soldiers was the expectation of spoils. Although collecting ransom clearly brought financial gain, keeping a prisoner and arrange for his exchange had its cost. Consequently, procedures were devised to reduce transaction costs.

One such device was a rule asserting that the prisoner had to assess his own value. This compelled the prisoner to establish a value without too much distortion; indicating too low a value would increase, the captive's chances of being killed, while indicating too high a value would either ruin him financially or create a prohibitively expensive ransom that would also result in death

Itemcode : **PA1071**

**Q71** It can be inferred from the passage that a medieval soldier

:

- (a) was less likely to kill captured members of opposing armies than was a soldier of the Roman Empire
- (b) was similar to a 20th century terrorist in that he operated on a basically independent level and was motivated solely by economic incentives
- (c) had few economic options and chose to fight because it was the only way to earn an adequate living
- (d) was motivated to spare prisoners' lives by humanitarian rather than economic ideals

Key: **A**

Itemcode : **PA1072**

**Q72** Which of the following best describes the change in policy from executing prisoners in Roman times to ransoming prisoners in the middle ages?

- (a) The emperors of Rome demanded more respect than did medieval rulers and thus Roman subjects went to greater

lengths to defend their nation

- (b) it was a reflection of the lesser degree of direct control medieval ruler had over subjects
- (c) It became a show of strength and honour warrior of middle ages to be able to capture and return their enemies
- (d) Medieval soldiers were not as humanitarian as their ransoming practices might have indicated

Key: **B**

Itemcode : **PA1073**

**Q73** The primary purpose of the passage is to  
:

- (a) discuss the economic basis of the medieval practice of exchanging prisoners for ransom
- (b) examine the history of the treatment of prisoner of war
- (c) emphasize the importance of a warrior's code of honour during the middle ages
- (d) explore a way of reducing the cost of ransom

Key: **A**

Itemcode : **PA1074**

**Q74** The author uses the phrase "without too much distortion" in order to  
:

- (a) Indicate that prisoners would fairly assess their worth
- (b) emphasize the important role medieval prisoners played in determining whether they should be ransomed
- (c) explain how prisoners often paid more than an appropriate ransom in order to increase their chances of survival
- (d) suggest that captors and captives often had understanding relationships

Key: **A**

Itemcode : **PA1075**

**Q75** Bring out the meaning of the word 'spoils' in the context of the passage.  
:

- (a) Destroys
- (b) Ruins
- (c) Rewards
- (d) wastes

Key: **C**