A blend is compatible or incompatible depends on _____.

A. Kinetics of mixing
B. Processing conditions
C. Presence of additives
D. All of these

Compatibilizers play a role of _____.

A. Reducing degree of immiscibility
B. Decreasing interfacial tension
C. Providing morphological stability
D. All of these

Miscible polymer blend is characterized by _____.

A. Homogeneity down to molecular level
B. Comparable domain size to macromolecular dimension
C. Negative value of free energy
D. All of these

Mixtures of polymers that have positive heats and entropies of mixing usually tend to exhibit_____.

A. Upper critical solution temperature
B. Lower critical solution temperature
C. Both of these
D. None of these

In polyblend, entropy of mixing of components depends on the _____ of chains.

A. Weight fraction
B. Volume fraction
C. Mole fraction
D. All

Which is not the most widely used equipment in mechanical blending?

A. Twin screw extruder
B. Single screw extruder
C. Intensive mixer
D. Palletizer

PPO/PS blend primarily prepared for _____.

A. High resistance to acids and alkalies
B. Excellent electrical properties
C. Rheological properties necessary for processing by current technology
D. All

Miscible blend system exhibits a single glass transition temperature (Tg).

A. True
B. False

Identify type of polymer blend requiring a third component to improve compatibility by mechanical or physical means.

A. Miscible
B. Homogeneous
C. Heterogeneous
D. Immiscible

Compatibilizers are generally _____.

A. Block copolymers
B. Graft copolymers
C. Ionomeric polymer
D. All

Characteristics of miscible polymer blend does not include _____.

A. Homogeneity down to molecular level
B. Comparable domain size to macromolecular dimension
C. Negative value of free energy
D. None

Two polymers which are thermodynamically miscible but physically incompatible can be blended by the method of _____.

A. Melt blending
B. Latex blending
C. Solution blending
D. Reactive blending

Polymer blending in which interactions of neighbouring spheres of constituent polymers are prevented by suspending medium is _____.

A. Melt blending
B. Latex blending
C. Solution blending
D. Reactive blending

When two different polymeric molecule of blends have little attraction for each other, the enthalpy of mixing is (ΔH_{mix})_____.

A. Positive
B. Negative
C. Zero
D. None

For blends of polymers containing functional groups, _____ blending has been regarded as a better approach to improve the compatibility.

A. Latex
B. Mechanical

C. Solution
D. Reactive

Which of the following is not an advantage of Polyblend?

A. Process high Tg resin at temperature well below thermal degradation limit
B. Reduce pressure drop across die/runners thereby increasing productivity
C. Easier, more stable processing
D. None

The most important method of polymer blending.

a. Mechanical blending
b. Solution blending
c. Latex blending
d. Reactive blending

Blend of PS/PB has tensile strength ____ than that of PS.

A. same
B. low
C. high
D. can't say

Blend of PS/PB has _____ HDT than that of PS.

A. Lower
B. Higher
C. Same
D. None

Contribution of butadiene in ABS is _____.

A. Toughness
B. Chemical resistance
C. Heat distortion resistance
D. None

Main purpose of blending PPO with PS is to achieve _____.

A. High resistance to acids and alkalies
B. Excellent electrical properties
C. Rheological properties necessary for processing by current technology
D. All

PP is blended with _____ to overcome its _____.

A. Thermoset, Toxicity
B. Rubber, Rigidity
C. PE, Flexibility
D. Nylon, Heat stability

The property that decreases in PP/ABS blend

A. Melt index
B. Flexural strength
C. Impact strength
D. % shrinkage

Nylon can be blended with PP to overcome

A. High cost
B. Water absorption
C. Both
D. None

Addition of PP to PC to make a blend reduces its _____.

A. Density
B. Impact strength
C. Processability
D. None

Polyblend which is miscible over a very wide temperature range and in all compositions of constituent polymers?

A. PS/PPO
B. PC/ABS
C. PA/ABS
D. PA/PPO

Example of a partially miscible polymer blend

A. PS/PPO
B. PC/ABS
C. PA/ABS
D. PA/PPO

Choose the ODD one out of the following.
A. Transfer molding
B. Compression molding
C. Injection molding
D. Hand lay-up

Select the process which is an open mold process.
A. Reaction injection molding
B. Spray lay-up
C. Transfer molding
D. Injection molding

Hand lay-up method can be easily used for manufacturing the ____.
A. Automotive parts
B. Swimming pool
C. Engine hood

D. Pressure vessel

The correct statements in context of spray lay-up method are: 1. Spray lay-up is similar to hand lay-up process, the only difference lies in application of resin and fiber to the mold, 2. It is a open mold process, 3. The process is well suitable for small to medium volume production.
A. 1 and 3
B. 1 and 2
C. 2 and 3
D. 1, 2 and 3

Mould release agent used in BMC and SMC include ____.
A. PVA solution
B. Silicone spray
C. Cellophane film
D. Metal stearate

The correct statements in context of resin transfer molding are: 1. Ability to incorporate inserts and other attachments in the mold, 2. Low tooling cost, 3. Complex structures can be produced.
A. 1 and 2
B. 2 and 3
C. 1, 2 and 3
D. 1 and 3

The controlling parameters in filament winding are; 1 Viscosity of resin, 2 Winding pattern, 3 Carriage movement
A. 1 and 2
B. 1, 2 and 3
C. 1 and 3
D. 2 and 3

The incorrect statement in case of pultrusion is;
A. Difficult to maintain tight tolerances
B. Can fabricate extremely large parts
C. Complex thin walled shapes can be fabricated
D. Continuous fibre can not be used.

The correct statements pertaining to autoclave molding are; 1 Better adhesion characteristics between the layers, 2 Rate of production is low, 3 There is limitation on part size which depends upon autoclave size.
A. 1 and 2
B. 1 and 3
C. 1, 2 and 3
D. 2 and 3

The correct statements about pre-pegging techniques are; 1. Extreme care is required during packing and storage of prepregs, 2. Poor control over the thickness of the laminate is ensured, 3. Aramid fiber prepregs are used in making bullet proof vests.
A. 1, 2 and 3
B. 1 and 3
C. 2 and 3

D. 1 and 2

Polymer composites in which the individual nanofiller of a 10-100 Å thick are separated in a continuous polymer matrix by average distances that depend on loading of the nanofiller is ____.

a) Intercalated nanocomposites
b) Exfoliated nanocomposites
c) Micro composites
d) Macro composites

As compared to conventional composites polymer nanocomposites have final density _____.

a. Almost same as base polymer
b. Higher than base polymer
c. Lower than base polymer
d. Higher or lower depending on filler

Weight % of dispersed phase in polymer nano composites is _____.

a. 30-60%
b. 20-30%
c. 10-20%
d. 1-10%

In polymer nano composite, biodegradability of biodegradable polymer is _____.

a. Not influenced
b. Retarded
c. Enhanced
d. May retard or enhance depending on filler

In polymer nano composites aspect ratio of disperse phase cannot be _____.

a. 1000-3000
b. 3000-7000
c. 7000-10000
d. None

Example of type of nano filler not having only one dimension in nanometer range is ____.

a. Carbon nanotube
b. Nano cellulose fibre
c. Nano metal particles
d. None

Example of type of nano filler which has two dimensions in nanometer range is _____.

a. Nanoclay
b. Carbon nanotube
c. Nanometal particles
d. None of these

Example of nano filler which has all three dimensions in nanometer scale is _____.

a. Nanoclay
b. Carbon nanotube
c. Nano cellulose fibre
d. None

Mostly used nanoclay for preparation of polymer nano composites does not include _____.

a. Nanometer sized thin layered aluminosilicate inorganic fillers
b. Organically modified clay minerals
c. Synthetic clays
d. Natural clay

Not an example of nanoclay

a. Montmorillonite
b. Hectonite
c. Saponite
d. Silicamite

Nanoclays possess a hierchical morphology as defined by three general levels of structures and these are i) crystallite, ii) primary particle and iii) agglomerate.

a. i)
b. i), ii)
c. i), ii), iii)
d. None

Crystal lattice of nanoclay consists of a two dimensional 1 nm thick layers which are made up of ____ tetrahedral sheets of silica fused to an edge shaped octahedral sheet of either aluminium or magnesium hydroxide.

a. 2
b. 1
c. 3
d. 4

Nanoclay modification is essential to convert it to _____.

a. Hydrophilic
b. Organophilic
c. Inorganophilic
d. Hydrophobic